

1. False about Klumpke's paralysis?

a) Involves lower trunk of brachial plexus

b) Due to undue abduction of shoulder

c) Can cause Horner's syndrome

d) Biceps brachii is paralysed

Correct Answer - D

In Klumpke's paralysis, injury to lower trunk of brachial plexus due to undue abduction of shoulder.

It can cause Horner's syndrome,

Biceps is not paralysed.

2. Nerve roots involved in klumpke's paralysis is?

a) C6, C7

b) C7, C8

c) C8, T1

d) T1, T2

Correct Answer - C

Klumpke's Paralysis is due to injury of the lower trunk of brachial plexus. It involves mainly the *T1 nerve root and partly C8 nerve root*. All the small muscles of the hand are paralysed. Claw hand, horner syndrome and loss of sensation on the medial aspect of the arm are the common disabilities.

3. The following hand deformity is seen in?



a) Ulnar nerve injury

b) Median nerve injury

c) Klumpke's paralysis

d) All of the above

Correct Answer - D

This is a case of complete claw hand (clawing of all fingers). It is seen in:

1. Median plus ulnar nerve injury
2. Klumpke's palsy as it involves root value of ulnar nerve & medial root of median nerve → T1 & C8.

4. All are true regarding axillary lymph nodes except?

a) Posterior group lies along subscapular vessels

b) Lateral group lies along lateral thoracic vessels

c) Apical group lies along axillary vessels

d) Apical group is terminal lymph nodes

Correct Answer - B

Ans. is 'b' i.e., Lateral group lies along lateral thoracic vessels

Axillary lymph nodes

- The axillary lymph nodes are divided into 5 groups :?
 1. Anterior (pectoral) group :- Lie along lateral thoracic vessels, i.e. along the lateral border of pectoralis minor. They receive lymph from upper half of the anterior wall of trunk and from major part of breast.
 2. Posterior (scapular) group :- Lie along the Subscapular vessels. They receive lymph from the upper half of the posterior wall of trunk and axillary tail.
 3. Lateral group :- Lie along the upper part of the humerus, medial to the axillary vein. They receive lymph from upper limb.
 4. Central group :- Lie in the fat of the upper axilla. They receive lymph from the preceding groups and drain into apical group. The intercostobrachial nerve is closely related to them.
 5. Apical (infraclavicular) group :- Lie deep to the clavipectoral fascia along the axillary vessels. They receive lymph from central group, upper part of breast and the thumb and its web. These are called terminal group of lymph nodes, as they receive lymphatics from other nodes of breast.

5. Not an abductor of shoulder ?

a) Deltoid

b) Trapezius

c) Supraspinatus

d) Latissimus dorsi

Correct Answer - D

Latissimus dorsi

- Abduction is initiated by supraspinatus, which is responsible abduction upto 15° . After that deltoid (acromial or middle fibers) is the major abductor upto 90° of abduction. These two muscles, supraspinatus and deltoid are the prime movers for abduction.
- Overhead abduction ($> 90^\circ$) is caused by trapezius and serratus anterior, which act by causing upward rotation of glenoid cavity.

6. Axillary sheath is derived from?

a) Prevertebral fascia

b) Pretracheal fascid

c) Investing layer of deep cervical fascia

d) Deep fascia of throacic wall

Correct Answer - A

Ans. is 'a' i.e., Prevertebral fascia

The deep cervical fascia (fascia colli) has the following 6 layers:

- Investing layer
- Lies deep to the platysma
- Forms a pulley to hold tendons of digastrics and omohyoid
- Splits to enclose the parotid and submandibular glands; the suprasternal and supraclavicular spaces; and the sternocleidomastoid and trapezius
- Pretracheal layer
- Encloses larynx, trachea, esophagus and infrahyoid strap muscles
- Forms false capsule of the thyroid and the suspensory ligament of Berry
- Prevertebral fascia
- Forms axillary sheath around subclavian artery and brachial plexus
- Subclavian vein lies outside this sheath
- Carotid sheath
- Encloses the internal carotid artery, internal jugular vein and vagus nerve.
- Buccopharyngeal fascia
- Lies on the superficial aspect of the buccinators muscle and covers the superior constrictor muscle externally
- Pharyngobasilar fascia

- Lies deep to the pharyngeal muscles.

7. Not attached on medial border of scapula ?

a) Serratus anterior

b) Levator scapulae

c) Rhomboides major

d) Teres major

Correct Answer - D

Ans. is 'd' i.e., Teres major

Muscles attached to scapula are :-

- Coracoid process :- Tip of the coracoid process gives origin to coracobrachialis (medially) and short head of the biceps laterally.
- The upper surface receives insertion of pectoralis minor.
- Spine of scapula and acromion process :- There is origin of Deltoid and insertion of trapezius.
- Glenoid tubercle :- Supraglenoid tubercle gives origin to the long head of biceps and infra glenoid tubercle gives origin to long head of triceps.
- Lateral border :- Origins of teres minor and teres major.
- Medial border :- Insertions of serratus anterior (anteriorly); and rhomboides major, rhomboides minor and levator scapulae (posteriorly).
- Costal (anterior) surface (origin) Subscapularis.
- Dorsal surface (origins) Supraspinatus, infraspinatus and at inferior angle latissimus dorsi.

8. Adduction at wrist is caused by ?

a) Flexor carpi radialis

b) Extensor pollicis longus

c) Extensor carpi ulnaris

d) Flexor digitorum profundus

Correct Answer - C

Ans. C. Extensor carpi ulnaris

Origin and insertion:

- It originates from the lateral epicondyle of the humerus and the posterior border of the ulna, and crosses the forearm to the ulnar (medial) side to insert at the base of the 5th metacarpal.

Action:

- The extensor carpi ulnaris extends the wrist, but when acting alone inclines the hand toward the ulnar side; by its continued action it extends the elbow-joint.
- The muscle is a minor extensor of the carpus in carnivores, but has become a flexor in ungulates. In this case it is described as ulnaris lateralis.

Innervation:

- Despite its name, the extensor carpi ulnaris is innervated by the posterior interosseous nerve (C7 and C8), the continuation of the deep branch of the radial nerve.
- It would therefore be paralyzed in an injury to the posterior cord of the brachial plexus.

9. Subclavian artery is divided by which muscle ?

a) Pectoralis minor

b) Teres minor

c) Scaleneus anterior

d) Trapezius

Correct Answer - C

Ans. is 'c' i.e., Scaleneus anterior

- **Scaleneus anterior muscle divides subclavian artery into three parts :?**

A) First part :

- This part is medial (proximal) to scaleneus anterior. Branches from first part are :?
 1. Vertebral artery
 2. Internal thoracic artery
 3. Thyrocervical trunk:
 1. Costocervical trunk (on left side only).

B) Second part :

- This part lies posterior to scalenus anterior. It gives origin to Costocervical trunk on right side. Costocervical trunk gives following branches:
 1. Deep cervical artery
 2. superior intercostal artery.

C) Third part :

- This part lies lateral (distal) to scalenus anterior. It gives dorsal scapular artery (sometimes dorsal scapular artery arises from transverse cervical artery, a branch of thyrocervical trunk).

10. Which is the middle and large carpal bone ?

a) Scaphoid

b) Pisiform

c) Hamate

d) Capitate

Correct Answer - D

Ans. is 'd' i.e., Capitate

- Among the given options only capitate lies in middle (not lateral or medial) and it is the largest carpal bone.
- Scaphoid is lateral most bone in proximal row, pisiform is medial most bone in proximal row and hamate is medial most bone in distal row.

11. Common peroneal nerve is related to which of the following structures?

a) Shaft of tibia

b) Neck of fibula

c) Lower tibio-fibular joint

d) Shaft of fibula

Correct Answer - B

The common fibular nerve arises from the posterior division of the sacral plexus (L4–S2) and descends in an inferolateral direction, across the popliteal fossa to the fibular head. Just distal to the fibular head, the common fibular nerve bifurcates into the deep fibular and superficial fibular nerves. *It is easily palpated against the neck of fibula because of its subcutaneous position. It is commonly injured in fractures of neck of the fibula. It gets thickened in leprosy which may also cause foot drop.*

12. Structure passing deep to medial malleolus is ?

a) Post tibial artery

b) Long saphenous vein

c) Tibialis ant. tendon

d) Peroneus tertius

Correct Answer - A

Ans. is 'a' i.e., Post tibial artery

- Posterior tibial artery terminates behind the medial malleolus by dividing into medial and lateral plantar arteries.

13. Structure which lies outside the femoral sheath

a) Femoral artery

b) Femoral nerve

c) Femoral vein

d) Genitofemoral nerve

Correct Answer - B

Femoral nerve

Femoral sheath

Femoral sheath is a funnel shaped fascial prolongation around proximal part of femoral vessels, situated in the femoral triangle, below the inguinal ligament. *It is 3-4 cm long.* It is formed by fascia iliaca.

Femoral sheath is divided into 3 separate fascial compartments by septa :?

i) Lateral compartment :- It contains **femoral artery** and **femoral branch of genitofemoral nerve.**

ii) Intermediate compartment :- Femoral vein.

iii) Medial compartment (femoral canal) :- It is conical in shape, wider above and narrow below. The wider upper opening is known as **femoral ring**, which is potentially a *weak point* in lower abdomen and is the site for *femoral hernia*. *Femoral ring is bounded :*

Anteriorly by inguinal ligament, medially by lacunar ligament, posteriorly by pectineus with its covering fascia, and laterally by septum separating it from femoral vein. Femoral canal contains lymph node of cloquet or Rosenmuller and lymphatics.

14. Thoracic duct enters from abdomen to thorax at ?

a) T6

b) T10

c) T12

d) T8

Correct Answer - C

- Thoracic duct is also called as Pecquet duct. It is the *largest lymphatic duct* in body, about 45 cm (18 inches) long. o It has a *beaded appearance* because of the presence of many valves in its lumen.
- Thoracic duct begins as a continuation of the upper end of the cisterna chyli near the lower border of T₁₂ vertebra and enters the thorax through the aortic opening of diaphragm (at T₁₂).
- It then ascends through the posterior mediastinum and at T₅ level crosses from right side to the left side and ascends along left margin of oesophagus to enter the neck.
- At the level of C₇ vertebrae, arches towards left side to open into left brachiocephalic vein at the angle of union of left subclavian and left internal jugular veins.

15. Root value of Phrenic nerve is?

a) C1-3

b) C2-4

c) C3-5

d) C4-6

Correct Answer - C
C3-5

16. Bifurcation of trachea is at which level:

a) Opposite the disc between the T3-T4 vertebrae

b) Opposite the disc between the T5-T6 vertebrae

c) Opposite the disc between the T4-T5 vertebrae

d) Opposite the disc between the T7-T8 vertebrae

Correct Answer - C

The trachea begins in the neck as a continuation of the larynx at the lower border of the cricoid cartilage at the level of the sixth cervical vertebra.

- In the cadaver, trachea ends below at the carina by dividing into right and left principal (main) bronchi at the level of the sternal angle (opposite the disc between the fourth and fifth thoracic vertebrae).
- In living subjects, in the erect posture, the bifurcation lies at the lower border of the sixth thoracic vertebra.
- In adults the trachea is about 10-15 cm long and 2 cm in diameter.
- The fibroelastic tube is kept patent by the presence of U-shaped bars (rings) of hyaline cartilage embedded in its wall.
- The posterior free ends of the cartilage are connected by smooth muscle, the trachealis muscle.

17. Extent of esophagus is ?

a) C₃ - C₆

b) C₆ - T₁₀

c) T₁₀ - T₁₂

d) None

Correct Answer - B

Ans. is 'b' i.e., C6-T10 Organ/Structure Larynx

18. All are true about esophagus except ?

a) Lined by stratified squamous epithelium

b) Mucosa is thick

c) Middle third contains both skeletal and smooth muscles

d) Lower third contains only skeletal muscle

Correct Answer - D

Ans. is 'd' i.e., Lower third contains only skeletal muscle

Important features of esophagus

- Epithelium is stratified squamous non-keratinized epithelium.
- Muscularis mucosa contains only longitudinal layer and no circular layer.
- Mucosa is the toughest and strongest layer.
- Serosa is absent.
- Muscularis externa is made up of skeletal muscle fibers only in the upper third, smooth muscles only in the lower third and both types of muscle fibers in middle third. At upper end the longitudinal coat splits into two bundles and the triangular interval between them is called Laimer's tringle which is filled with circular muscle fibers.

19. Not true about superior vena cava

a) Opens into right ventricle

b) Enters the heart at level of 3rd costal

c) Pierces paricardium at 2nd costal cartilage

d) Receives azygos vein behind sternal angle

Correct Answer - A

SVC opens in to right atrium (not right ventricle).

Superior vena-cava

- SVC collects blood from the upper half of the body and drains into the right atrium. It is formed by the union of two brachiocephalic veins at the level of lower border of 1st right costal cartilage. It passes vertically downwards behind the right border of sternum and *piercing the pericardium* at the level of the *second costal cartilage*, enters the upper border of the right atrium to end in the upper and posterior part of sinus venorum at the lower border of third right costal cartilage (opposite **T₅ vertebra**).
- **Superior vena cava :- Has no valve**
- Behind the sternal angle (T₄ vertebral level), SVC receives the azygos vein.
- SVC is divided into two parts -
 - i) Upper half (extrapericardial)
 - ii) Lower half (intrapericardial)

20. All of the following veins lack valves except

a) Femoral vein

b) Portal vein

c) IVC

d) Dural venous sinuses

Correct Answer - A

Veins which do not have valves are:

- IVC
- SVC
- Hepatic, ovarian, uterine, renal, emissary, cerebral, pulmonary, and umbilical veins
- Portal venous system is a valveless system

Note: Inferior vena cava :- Orifice is guarded by a rudimentary valve of IVC (Eustachian valve) derived from embryonic right venous valve, which directs the blood from IVC towards foramen ovale in fetal life. This valve is nonfunctional in adults.

21. Arch of aorta begins and ends at which level:

a) T2

b) T3

c) T4

d) T5

Correct Answer - C

The arch of the aorta (Transverse Aorta) begins at the level of the upper border of the second sternocostal articulation of the right side, and runs at first upward, backward, and to the left in front of the trachea; it is then directed backward on the left side of the trachea and finally passes downward on the left side of the body of the fourth thoracic vertebra, at the lower border of which it becomes continuous with the descending aorta.

22. Rib ossification center first appears in which rib ?

a) 1st

b) 12th

c) 6th

d) 3rd

Correct Answer - C

Ans. is 'c' i.e., 6th

Each rib (except for 11th & 12th) is ossified from four centres :-

- One primary centre-->for body
- Three epiphyseal (secondary)centres for :-**
 1. Head
 2. Articular part of tubercle
 3. Non articular part of tubercle
- Ossification begins near the angle toward the end of 2nd month (around 8th week) of fetal life, and is seen first in 6th and 7th ribs.
- The epiphyses for the head and tubercle make their appearance between 16th and 20th years, and are united to the body about the 25th year.

23. Upper two posterior intercostal arteries arise from ?

a) Aorta

b) Superior intercostal artery

c) Internal mammary artery

d) Bronchial artery

Correct Answer - B

Ans. B) Superior intercostal artery

- The 1st and 2nd **posterior intercostal arteries arise** from the supreme **intercostal artery**, a branch of the costocervical trunk of the subclavian **artery**.
- The lower nine **arteries** are the aortic**intercostals**, so called because they **arise** from the back of the thoracic aorta.

24. Structures passing through diaphragm through aortic hiatus are all except:

a) Aorta

b) Azygous vein

c) Thoracic duct

d) Hemiazygous vein

Correct Answer - D

Aortic opening lies at the level of T12 vertebrae. It transmits:

- Aorta
- Thoracic duct
- Azygous vein

25. Which among the following is the last tributary of the azygos vein?

a) Right-superior intercostal vein

b) Hemi-azygos vein

c) Right bronchial vein

d) Accessory azygos vein

Correct Answer - C

Azygos vein receives venous drainage from the right bronchial vein near its termination.

Tributaries of the azygos vein include:

- The right superior intercostal vein (a single vessel formed by the second, third, and fourth intercostal veins)
- Fifth to eleventh right posterior intercostal veins
- The hemiazygos vein
- The accessory hemiazygos vein
- Esophageal veins
- Mediastinal veins
- Pericardial veins
- *Right bronchial veins*

26. Posterior to transverse pericardial sinus?

a) Aorta

b) Pulmonary trunk

c) SVC

d) Left atrium

Correct Answer - C

Ans. is 'c' i.e., SVC

- Transverse sinus is a short passage that lies between the reflection of serous pericardium (epicardium) around arterial (aorta and pulmonary trunk) and venous ends of the heart tube.
- Transverse sinus is bounded anteriorly by ascending aorta and pulmonary trunk, *posteriorly by SVC, and inferiorly by left atrium.*

27. From which of the following routes absorption of local anaesthetic is maximum?

a) Intercostal

b) Epidural

c) Branchial

d) Caudal

Correct Answer - A

A. i.e. Intercostal

- Systemic absorption is directly proportional to blood supply. *Local Anesthetic is absorbed very rapidly in intercostals block d/t close location of blood vessels around the nerve*. Highest blood level of LA is achieved per volume of drug injected in intercostals block.
- The intercostal nerve (and neurovascular bundle) run along the inferior margin of rib. They can be anaesthetized by intercostal injection of local anaesthetics for pain relief. The site is along the *posterior axillary line* deep to inferior border of one or more ribs.
- Sites of greatest absorption include: intrapleural > intercostals > pudendal > caudal > epidural > brachial > infiltration.

28. 3rd constriction of the oesophagus is at the level of?

a) Left bronchus crossing the aorta

b) Where it pierces the diaphragm

c) Junction of the oesophagus and stomach

d) Cricopharynx

Correct Answer - B

Ans. is 'b' i.e., Where it pierces the diaphragm

29. IInd constriction in oesophagus is seen at the following site :

a) Where it crosses left main bronchus

b) Crossing of aorta

c) At pharyngoesophageal junction

d) Where it pierces the diaphragm

Correct Answer - B
B i.e. Crossing of Aorta

30. Not true about right bronchus

a) Shorter

b) Wider

c) More horizontal

d) In the line of trachea

Correct Answer - C

Ans. is 'c' i.e., More horizontal

- Trachea bifurcates at Carina (at lower border of T4 vertebra at T₄-T₅ disc space) into *right and left principal (primary) bronchi*.
- Right principal bronchus is wider, shorter (2.5 cm long), and more vertical in the line of trachea (25° with median plane).
- Therefore a foreign body is most likely to lodge in the right bronchus.
- Right bronchus divides into epiarterial and hyparterial bronchi, passing respectively above and below the pulmonary artery, before entering the hilum.
- Left principal bronchus is narrower, longer (5 cm long) and more horizontal (45° with median plane).
- Left bronchus crosses in front of the esophagus producing a slight constriction.
- Inside the lung it divides into 2 lobar bronchi: upper and lower.

31. Intercostal nerve is a branch of ?

- a) Brachial plexus
- b) Dorsal rami of thoracic spinal nerves
- c) Ventral rami of thoracic spinal nerves
- d) Ventral rami of cervical spinal nerves

Correct Answer - C

Ans. is 'c' i.e., Ventral rami of thoracic spinal nerves

Ventral rami of upper 11th thoracic spinal nerves are known as intercostal nerves and ventral ramus of T12 is known as subcostal nerve.

Upper six intercostal nerves supply thoracic wall whereas lower five intercostal nerves and subcostal nerve supply thoracic and anterior abdominal walls and hence known as *thoracoabdominal nerves*.

Upper two intercostal nerves also supply the upper limb.

Thus only 3rd to 6th are called typical intercostal nerves.

32. Azygos vein drains into:

a) Left brachiocephalic vein

b) Inferior vena cava

c) Superior vena cava

d) Right brachiocephalic vein

Correct Answer - C

The azygos vein ends by joining the posterior aspect of the superior vena cava

The Azygos Vein

- The azygos vein connects the superior **and inferior venae** cavae, either directly by joining the IVC or indirectly by the hemiazygos and accessory hemiazygos veins.
- The azygos vein drains blood from the posterior walls of the thorax and abdomen.
- It ascends in the posterior mediastinum, passing close to the **right Q^A des** of the bodies of the inferior eight thoracic vertebrae (T4-T12).
- It is covered anteriorly by the oesophagus as it passes posterior to the root of the right lung.
- It then arches over the superior aspect of this root to join the SVC.
- In addition to the posterior intercostal veins, the azygos vein communicates with the vertebral venous plexuses.
- This vein also receives the mediastinal, oesophageal, and bronchial veins.

33. All veins opens into coronary sinus, EXCEPT?

a) Great cardiac vein

b) Anterior cardiac vein

c) Middle cardiac vein

d) Left posterior ventricular vein

Correct Answer - B

The coronary sinus drains all the venous blood of the heart, except those carried by anterior cardiac veins and venae cordis minimae. Anterior cardiac veins opens into the right atrium, to the left of the opening of inferior vena cava. Venae cordis minimae drain directly into the chambers of the heart.

The coronary sinus receives the following veins: (1) the great cardiac vein; (2) the small cardiac vein; (3) the middle cardiac vein; (4) the posterior vein of the left ventricle; and (5) the oblique vein of the left atrium.

34. Blood supply of diaphragm is through all, except ?

a) Musculophrenic artery

b) Inferior phrenic artery

c) Middle phrenic artery

d) Pericardiophrenic artery

Correct Answer - C

Ans. C. Middle phrenic artery

- From above, the **diaphragm** receives **blood** from branches of the internal thoracic arteries, namely the pericardiophrenic artery and musculophrenic artery; from the superior phrenic arteries, which arise directly from the thoracic aorta; and from the lower internal intercostal arteries.
- From below, the inferior phrenic arteries supply the diaphragm.

35. All are true about bronchopulmonary segment except -

- a) Have independent single artery
- b) Have independent single vein
- c) Pyramidal in shape
- d) Have a independent segmental tertiary bronchus

Correct Answer - B

Each bronchopulmonary segment is drained by intersegment parts of pulmonary vein that lie in intersegmental space and drain adjacent segments.

Thus each segment does not have its independent segmental vein and each segment drains into more than one vein. Each vein drains more than one segment.

Features of bronchopulmonary segments

Characteristic features of each bronchopulmonary segment are :?

- 1) Is a pyramidal shaped segment of lung, with its apex facing the lung root and its base at the pleural surface.
- 2) Is the largest subdivision of a lobe.
- 3) Is an independent respiratory unit.
- 4) Is separated from adjacent segments by connective tissue septa which form intersegmental planes.
- 5) Is surrounded by connective tissue which is continuous on the surface with pulmonary pleura.
- 6) Is supplied independently by a segmental (tertiary) bronchus and a tertiary branch of the pulmonary artery.
- 7) Is named according to the segmental bronchus supplying it.
- 8) Is drained by intersegmental parts of the pulmonary veins that lie in intersegmental space and drain adjacent segments. Thus each

segment has more than one vein and each vein drains more than one segment.

9) Is not a bronchovascular segment, because it does not have its own vein.

10) Is surgically resectable : During removal, the surgeon works along the pulmonary vein to isolate a particular segment.

36. True regarding bronchopulmonary segment is /are

a) Avascular intersegmental planes

b) Complete vascular segment

c) Pulmonary vein occupy central position

d) One segment drains in >1 pulmonary vein

Correct Answer - D

D i.e. 1 Segment drains in > 1 pulmonary vein

37. In the lungs bronchial arteries supply:

a) Till tertiary bronchi

b) Till segmental bronchi

c) Till respiratory bronchioles

d) Till alveolar sacs

Correct Answer - C

Bronchial arteries are branches of the descending thoracic aorta. They supply the bronchial wall as far as the respiratory bronchioles.

38. Internal thoracic artery is a branch of ?

a) 1st part of subclavian artery

b) 2nd part of subclavian artery

c) 3rd part of subclavian artery

d) Thyrocervical trunk

Correct Answer - A
1st part of subclavian artery

39. All are Anterior relations of the Right kidney *except*:

a) Suprarenal gland

b) Hepatic flexure of the colon

c) Third part of the duodenum

d) Liver

Correct Answer - C

C i.e. Third part of duodenum

- The upper pole of the kidney is covered by the suprarenal gland.
- Anteriorly, the right kidney is related to the liver, duodenum, ascending colon or right colic flexure, and small intestine.
- The left is related to the spleen, stomach, pancreas, descending colon or left colic flexure, and small intestine.
- Posteriorly, the kidneys are related to rib 12 and the diaphragm, psoas major, quadratus lumborum, and transversus abdominis.
- The upper part of the kidney is usually separated by the diaphragm from the pleura and lung.
- In the vertebrocostal trigone, however, the kidney and pleura may be separated only by connective tissue

40. Liver is divided into right and left lobe by all except?

a) Portal vein

b) Hepatic artery

c) Hepatic vein

d) Hepatic ducts

Correct Answer - C

Ans.is 'c' i.e., Hepatic vein

- Physiological right and left lobes are equally divided by an imaginary line running from fossa for gall bladder to the groove for IVC.
- The physiological right and left lobes have separate biliary drainage and vascular supply, i.e.
- They are supplied respectively by right and left branches of portal vein and hepatic artery and bile is conveyed by the corresponding hepatic ducts (bile ducts).

41. Which is not true regarding the basis of functional divisions of Liver?

a) Based on portal vein and hepatic vein

b) Divided into 8 segments

c) There are three major and three minor fissures

d) 4 sectors

Correct Answer - B

Ans: B. Divided into 8 segments

(Ref Gray's 40/e p1165, 1166,1178; Sabiston 20/e p1484, 19/e p/1413-1417; Schwartz 10/e p1265, 9/e p1095; Bailey 27/e p1154, 26/e p1065-1067; Blumgart 5/e p31-37; Shackelford 7/e p1426-1430)

Most preferred option:

- Liver is divided into 8 segments.
- Segment IX - Acent subdivision of segment I.
- Describes segment posterior to segment VIII.

Functional anatomy of liver:

- Based on Couinaud's division of liver (Coninaud 1957).
- Divided into eight (subsequently nine) functional segments.
- This is based upon distribution of portal venous branches & hepatic veins location in parenchyma.

Sectors & segments of liver:

Sectors of liver:

- Between one & three segments:
- Right lateral sector = Segments VI & VII.
- Right medial sector = Segments V & VIII.
- Left medial sector = Segments III & IV (and part of I).
- Left lateral sector = Segment II.

Segments of liver:

- Numbered in an ante-clockwise spiral centered on portal vein with liver viewed from beneath.
- Starting with segment I up to segment VI à then back clockwise for most cranial two segments VII & VIII.

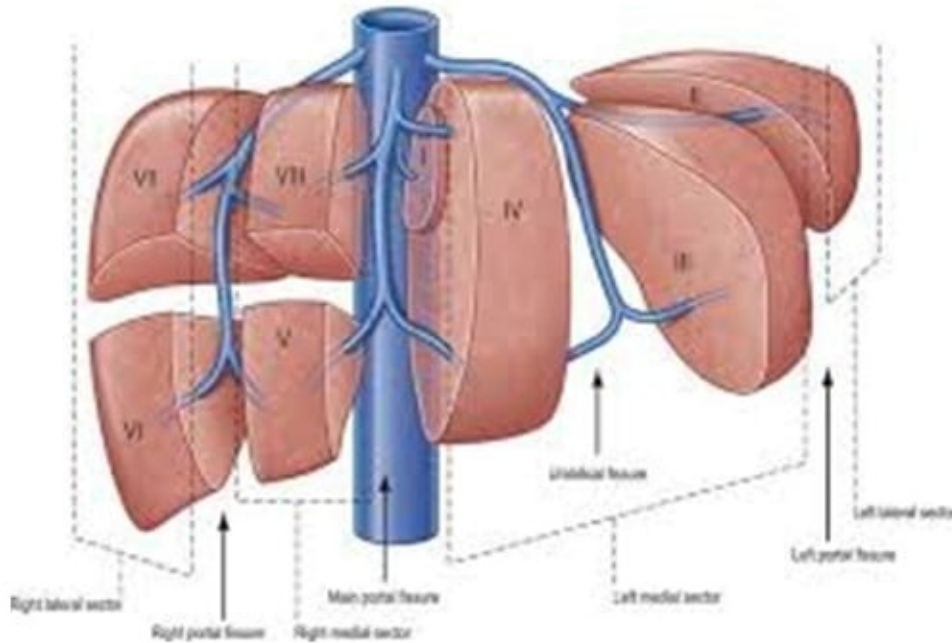


Fig 1: The fissures and sectors of the liver. (Right lateral = right posterior; right medial = right anterior)

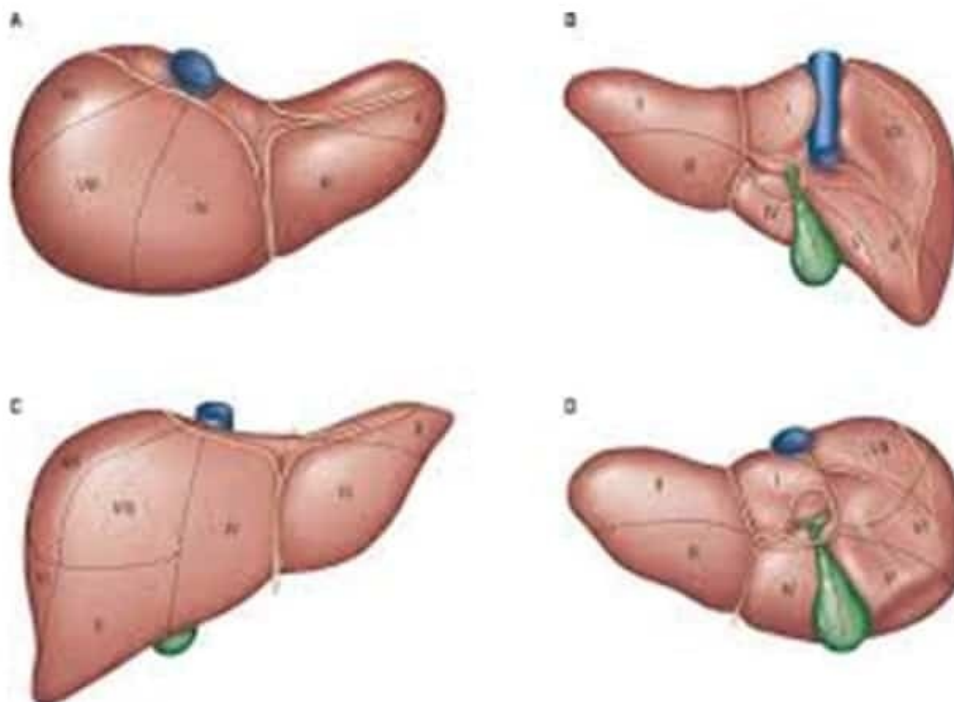


Fig 2: Segments of the liver (after Couinaud). (A) superior view; (B) posterior view; (C) anterior view; (D) inferior view.

42.

A pt. operated for direct inguinal hernia developed anesthesia at the root of the penis and adjacent part of the scrotum the nerve likely to be injured is ?

a) Genital br. of genitofemoral nerve (supply dartos muscle)

b) Femoral br. of genitofemoral nerve

c) Iliohypogastric nerve

d) Ilioinguinal nerve

Correct Answer - D

Ans. is 'd' i.e. ilioinguinal nerve

- All the three nerves ie genitofemoral, ilioinguinal & iliohypogastric are branches of the lumbar plexus and all may be injured in op. for hernia.
 - Ilioinguinal-Nerve enters the inguinal canal by piercing the internal oblique muscle (not through the deep ring)*
 - it then emerges from the superficial inguinal ring to supply skin of
 - *proximomedial skin of the thigh*
 - *skin over the penile root.*
 - *upper part of the scrotum*
 - Iliohypogastric nerves
 - divides into two branches - lateral cutaneous and anterior cutaneous.
 - lateral cutaneous supplies - *posterolateral gluteal skin*
 - Anterior cutaneous supplies - *suprapubic skin*
- Genitofemoral nerve**
divides into two branches

- *Genital and*
- *Femoral*
Genital br of Genitofemoral nerve - enters the inguinal canal at its deep ring and supplies
 - *the Cremaster**
 - *the scrotal skin**Femoral br of genitofemoral nerve
 - passes behind the inguinal ligament, enters the femoral sheath lateral to femoral artery*, pierces the ant layer of the femoral sheath and fascia lata and supplies the skin *anterior to the upper part of femoral triangle.*
- From these descriptions it is obvious that the nerve likely to be injured is ilioinguinal nerve.

**43. All structures are posterior relations of
except -**

a) Appendix

b) Greater omentum

c) Psoas major

d) Femoral nerve

Correct Answer - B

Ans. is 'b' i.e., Greater omentum

Anterior

- Coils of small intestine
- Part of greater omentum (sometimes)
- Anterior abdominal wall

Posterior

- Psoas and iliacus muscles
- Femoral nerve
- Lateral cutaneous nerve of thigh
- Appendix (most common position)

44. Nerve supply of cremastic muscle ?

a) Pudendal nerve

b) Femoral branch of genitofemoral

c) Genital branch of genitofemoral nerve

d) Ilioinguinal nerve

Correct Answer - C

Genital branch of genitofemoral nerve

Cremastic muscle is a muscle of scrotum. It is supplied by genital branch of genitofemoral nerve.

**45. Following delivery, urinary bladder becomes a pelvic organ after:
*UPSC 07; MAHE 11***

a) 4 years

b) 6 years

c) 10 years

d) puberty

Correct Answer - D

Ans. is 'd' i.e., Puberty

- In infant and children the urinary bladder, even when empty, is in the abdomen.
- It begins to enter the greater pelvis at about 6 years of age, but it does not enter the lesser pelvis and become a pelvic organ until after puberty.

46. Nerve supply to musculature of urinary bladder is ?

a) Sympathetic

b) Parasympathetic

c) Both

d) None

Correct Answer - C

Ans. is 'c' i.e., Both

Parasympathetic supply is motor to detrusor muscle and inhibitory to sphincter vesicae. Sympathetic supply is motor to sphincter vesicae and inhibitory to detrusor muscle.

Nerve supply of bladder

Bladder is supplied by both sympathetic and parasympathetic fibers.

Parasympathetic : Preganglionic fibers arise from S₂ to S₄ cord segments, pass via pelvic splanchnic nerves. After relay in ganglion cells in pelvic plexus (inferior hypogastric plexus) and in bladder wall, postganglionic fibers supply detrusor muscle. Contraction of detrusor muscle is mediated by cholinergic muscarinic receptors (M₃).

Preganglionic parasympathetic neurons at S₂, and S₄ cord segments innervating bladder form sacral micturition center.

Sympathetic : Preganglionic fibers arise from lateral horn cells of T₁-L₂ cord segments and pass via lower lumbar splanchnic nerves, superior hypogastric plexus (presacral nerve of Latarjet) to reach inferior hypogastric (pelvic) plexus. After relay in pelvic ganglia, postganglionic sympathetic fibers (i) stimulate sphincter vesicae (internal urethral sphincter) via α , adrenoceptors and (ii) cause

relaxation of detrusor muscle via 13_2 adrenoceptors. It can also inhibit presynaptically the parasympathetic ganglia via α_1 adrenoceptors

Visceral afferents : (1) pain fibers from bladder pass through both parasympathetic and sympathetic pathway and enter T_{11} - L_2 and S_2 - S_4 cord segments, hence referred pain is felt in lower part of anterior abdominal wall (hypogastrium), upper part of front of thigh, scrotum or labium majus, penis or clitoris, and perineum. Centrally, spinothalamic pathway conducts pain impulses from bladder.

Stretch afferents : arising from stretch receptors in the bladder wall pass via pelvic splanchnic nerves, enter S_2 , S_3 and S_4 cord segments and establish reflex connections with sacral micturition center, which innervates detrusor.

So afferent and efferent limb of this micturition reflex is formed by pelvic splanchnic nerves.

Sacral micturition center and the micturition reflex are controlled by facilitatory and inhibitory centers located in pons and paracentral lobule of frontal lobe of cerebrum.

47. The muscle that is most often injured by a tear of the perineum is innervated by which of the following?

a) Inferior gluteal nerve

b) Pelvic splanchnic nerve

c) Posterior femoral cutaneous nerve

d) Pudendal nerve

Correct Answer - D

The **pudendal nerve** (from S2-S4) is the principal nerve to innervate structures of the perineum, including sensory innervation to the genitalia, and motor innervation to muscles of the perineum, the external urethral sphincter, and the external anal sphincter.

This innervation may have clinical significance, as babies can also have uterine prolapse, which can be due either to congenital weakness in the pelvic musculature or to defects in innervation.

The **inferior gluteal nerve** supplies the gluteus maximus.

The **pelvic splanchnic nerve** supplies the pelvic viscera via the inferior hypogastric and pelvic plexuses.

The **posterior femoral cutaneous nerve** supplies the skin of the buttock and upper portions of the medial and posterior aspects of the thigh.

Ref: Cunningham F.G., Leveno K.J., Bloom S.L., Hauth J.C., Rouse D.J., Spong C.Y. (2010). Chapter 2. Maternal Anatomy. In F.G. Cunningham, K.J. Leveno, S.L. Bloom, J.C. Hauth, D.J. Rouse, C.Y. Spong (Eds), *Williams Obstetrics*, 23e.

48. Which of the following arteries gives blood supply to the ductus deferens?

a) Cremastric artery

b) Inferior epigastric artery

c) Middle rectal artery

d) Superior vesical artery

Correct Answer - D

D i.e. Superior vesicle artery

Vas (ductus) deferens is 45 cm long muscular tube which conveys sperms from epididymis to ejaculatory duct. It receives blood from its own artery (i.e., artery to ductus deferens) which usually arises from superior vesical artery (but may occasionally arise from inferior vesical artery). Artery to ductus deferens anastomose with testicular artery to supply epididymis and testis.

- In treating varicocele, both testicular artery & vein are ligated quite high up, which provides the advantage of ligating venae comitantes of artery. If left open these venae comitantes can lead to recurrence because of their anastomoses with internal spermatic veins

49. Supracristal plane is above ?

a) Highest point of iliac crest

b) Anterior superior iliac spine

c) Posterior superior iliac spine

d) Ischeal tuberosity

Correct Answer - A

Ans.a. Highest point of iliac crest

- Supracristal plane is an anatomical transverse plane lying at the upper most part of the pelvis, the iliac crest.
- This is usually at the level of the L4 vertebrae.
- It passes through the umbilical region and the left and right lumbar regions.

50. In case of aberrant obturator artery, it arises most commonly from ?

a) Common iliac artery

b) Femoral artery

c) Profunda femoris artery

d) Inferior epigastric artery

Correct Answer - D

Ans. is 'd' i.e., Inferior epigastric artery

Accessory obturator artery is the pubic branch of the inferior epigastric artery?

- The normal obturator artery is a branch of the internal iliac. It gives a pubic branch which anastomoses with the pubic branch of the inferior epigastric artery.
- Occasionally, this anastomosis is large and the obturator artery then appears to be a branch of the inferior epigastric.
- Usually, the abnormal (accessory) artery passes lateral to the femoral canal in contact with the femoral vein and is safe in an operation to enlarge the femoral ring.
- Sometimes, however, the abnormal obturator artery may lie along the medial margin of the femoral ring, i.e. along the free margin of the lacunar ligament. The femoral ring is enlarged by cutting the lacunar ligament.
- So, in this case the artery is likely to be cut.

51. Accessory organ which may be found in stomach ?

a) Spleen

b) Pancreas

c) Liver

d) Kidney

Correct Answer - B

Ans. is 'b' i.e., Pancreas

Ectopic (Accessory) pancreatic tissue may be found in submucosa of :?

- Stomach
- Meckel's diverticulum
- Duodenum
- Gall bladder
- Small intestine (jejunum, ileum)
- Spleen

52. Structures passing through obturator foramen are all except -

a) Obturator nerve

b) Obturator artery

c) Obturator vein

d) Internal pudendal vessels

Correct Answer - D

Through the canal the obturator artery, obturator vein and obturator nerve pass out of the pelvis.

53. Lateral umbilical fold of Peritoneum is produced by?

a) Median umbilical ligament

b) Medial umbilical ligament

c) Inferior epigastric vessels

d) None of the above

Correct Answer - C

Ans.is 'c' i.e., Inferior epigastric vessels

- Umbilical folds are reflections of the parietal peritoneum that are raised from the body wall by underlying structures.
- A median umbilical fold :Covers median umbilical ligament (a remnant of urachus).
- Two medial umbilical folds :Cover medial umbilical ligaments (remnants of distal part of obliterated umbilical artery).
- Two lateral umbilical folds :Cover inferior epigastric vessel.

54. Protective mechanism of inguinal canal ?

a) Obliquity of inguinal canal

b) Contraction of cremestric muscle

c) Contraction of conjoint tendon

d) All of the above

Correct Answer - D

Ans. is 'd' i.e., All of the above

- There are following important physiological mechanisms that protect against formation of inguinal hernia with increased intra-abdominal pressure ?
- .. Shutter mechanism :The arching fibers of internal oblique and transverse abdominis (i.e. conjoint tendon) contract when the muscles of abdomen contract. This act as a shutter on the posterior wall to protect it from herniation.
- 2.. Closure mechanism :In addition, contraction during shutter mechanism also narrows the deep ring due to sphincter action of transverse abdominis and internal oblique at deep inguinal ring.
- 3.. Obliquity of inguinal canal
- 4.. Ball valve action of cremestric causing plugging of inguinal canal.

55. Coverings of spermatic cord are all except ?

a) Internal spermatic fascia

b) Cremasteric fascia

c) External spermatic fascia

d) Dartos muscle

Correct Answer - D

Ans. is 'd' i.e., Dartos muscle

- The spermatic cord consists of a tubular sheath extending from the deep inguinal ring to the upper part of posterior border of testis. Constituents of spermatic cord are ?
- Ductus deferens (Vas deferens)
- Arteries :- Testicular artery, cremasteric artery, artery to ductus deferens.
- Veins :- Pampiniform plexus.
- Nerves :- Genital branch of genitofemoral nerve and sympathetic plexus around arteries.
- Others :- Lymphatics, remains of the processes vaginalis.
- Covering of spermatic cord, from within outwards, are :- (i) internal spermatic fascia, (ii) cremasteric fascia and (iii) external spermatic fascia.

56. Floor of Petit triangle is formed by?

a) Sacrospinalis

b) Internal oblique

c) Rectus abdominis

d) Fascia Transversalis

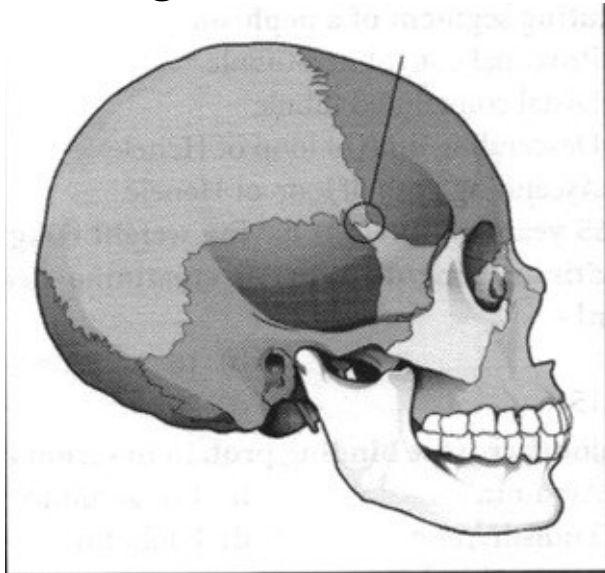
Correct Answer - B

Ans. is 'b' i.e., Internal oblique [Ref Text book of surgical anatomy p. 148]

Boundaries of Petit triangle (inferior lumbar triangle) are?

- Base - Iliac crest
- Anterior boundary (abdominal boundary) → Posterior border of external oblique muscle.
- Posterior boundary (lumbar boundary) - Anterior border of latissimus dorsi.
- Floor is formed by internal oblique muscle.

57. The injury to the marked area of skull will cause Intracranial hemorrhage due to damage to which vessel



a) Middle cerebral artery

b) Middle meningeal artery

c) Anterior cerebral artery

d) Deep temporal artery

Correct Answer - B

Ans: B Middle meningeal artery

(Ref: Clinical anatomy 2d/e p. 306)

- The pterion is situated in the floor of temporal fossa.
- An H-shaped suture, where four bones meet each other :-
 - .. Greater wing of sphenoid
 - ?. Squamous temporal
 - }. Frontal

- i. Anteroinferior angle of parietal
- Fracture at this point may injure middle meningeal artery or/and vein and give rise to extradural hemorrhage.

58. All of the following have general visceral efferent fibers except:

a) Facial nerve

b) Olfactory nerve

c) Oculomotor nerve

d) Glossopharyngeal nerve

Correct Answer - B

Ans: B. Olfactory nerve

Olfactory nerve does not have general visceral efferent fibers.

Functional Division of Cranial Nerve Nuclei

Sensory / Afferent

- 1. General Somatic**
 - Sensory nucleus of trigeminal (descending & mesencephalic nucleus of V^h)
 - Receive sensation of face
- 2. General Visceral**
 - Nucleus of tractus solitaries.
 - Receive taste from tongue &

Motor / Efferent

1. General

- Supply striated muscle derived from somites & in tongue & eye movements i.e.
- Hypoglossal nucleus of 12th
- Oculomotor nucleus of 3rd
- Trochlear nucleus of 4th
- Abducent nucleus of 6th

2. General

- Edinger Westphal nucleus of 3rd
- Superior salivatory nucleus of 7th
- Inferior salivatory nucleus

- 3. Special somatic**
- **4 vestibular nucleus**
 - **2 cochlear nucleus**
 - Receive stimuli from ear

of 9th

- Dorsal motor nucleus of 10th (Vagus)

3. Special Visceral or Branchial component

- Innervate muscles derived from branchial arches i.e.
- **Masticatory nucleus** of 5th
- **Facial nucleus of 7th**

59. All of the following cranial nerves contain Somatic Efferents, Except:

a) VII Nerve (Facial nerve)

b) III Nerve (Oculomotor nerve)

c) IV Nerve (Trochlear nerve)

d) VI Nerve (Abducent nerve)

Correct Answer - A
A i.e. VII Nerve (Facial nerve)

60. What is the length of optic nerve

a) 20 mm

b) 30 mm

c) 40 mm

d) 50 mm

Correct Answer - D

Answer- D. 50 mm

optic nerve is about 47-50 mm in length and can be divided into 4 parts : -

- Intraocular part (1 mm)
- Intraorbital part (30 mm)
- Intracanalicular part (5-9 mm)
- Intracranial part (10 mm)

61. True about lower motor neuron palsy of VIIth nerve:

a) Other motor cranial nerves also involves

b) Melkersson's syndrome cause recurrent paralysis

c) Eye protection done

d) All

Correct Answer - D

- Most common cause of lower motor neuron (LMN) type of facial palsy is Bell's palsy.
- Melkersson's syndrome consists of a triad of: (i) Facial paralysis, (ii) Swelling of lips, (iii) Fissured tongue, Paralysis may be recurrent.
- As patient is unable to close the eye, eye protection is required to protect cornea and conjunctiva.
- The prognosis in acute facial palsy can be accurately determined by serial electrical testing. The response to electrical tests have been found to be most useful in the first 5 days *after the onset*.

62. Most common cranial nerve to get compressed in increased intracranial pressure -

a) Trigeminal

b) Trochlear

c) Facial

d) Abducens

Correct Answer - D

Ans. is 'd' i.e., Abducens

- Abducent nerve is the most commonly involved nerve in increased intracranial tension and in spinal anesthesia.
- At petrous apex, abducent nerve makes a sharp bend to pass through Dorello's canal beneath Gruber's ligament.

63. Dangerous area of scalp is ?

a) Superficial fascia

b) Loose areolar tissue

c) Pericranium

d) Aponeurosis

Correct Answer - B

Ans. is 'b' i.e., Loose areolar tissue

The scalp consists of five layers:

1. Skin
2. Close network of connective tissue (superficial fascia)
3. Aponeurosis (galea aponeurotica) with occipitofrontalis muscles
4. Loose areolar (subaponeurotic) tissue
5. Pericranium (outer periosteum of skull)

First three layers are intimately connected and move as one unit, and are called **surgical layers** of scalp or **scalp proper**.

Loose subaponeurotic areolar tissue (4th layer) is called **dangerous area of scalp** because it contains emissary veins through which infection in subaponeurotic space may spread readily to intracranial venous sinuses.

64. Taste sensation to anterior 2/3 of tongue is supplied by

a) Glossopharyngeal nerve

b) Jacobson's nerve

c) Trigeminal nerve

d) Chorda tympani nerve

Correct Answer - D
D. i.e. Chorda tympani nerve

65. In dislocation of the jaw, displacement of the articular disk beyond the articular tubercle of the temporomandibular joint result from spasm or excessive contraction of which of the following muscles?

a) Buccinators

b) Lateral pterygoid

c) Medial pterygoid

d) Masseter

Correct Answer - B

The temporalis masseter and medial and lateral pterygoid muscles are the muscles of mastication that attach to the mandible. The buccinator muscle, which controls the contents of the mouth during mastication, is innervated by the seventh cranial nerve and constitutes the *chief muscle of facial expression*. The lateral pterygoid muscles, acting bilaterally protract the jaw and, acting unilaterally rotate the jaw during chewing. Because the fibers of the superior head of the lateral pterygoid muscle insert onto the anterior aspect of the articular disk of the temporomandibular joint as well as onto the head of the mandible, spasm of this muscle, such as in a yawn, can result in dislocation of the mandible by pulling the disk anterior to the articular tubercle. Reduction is accomplished by pushing the mandible downward and back, so that the head of the mandible reenters the mandibular fossa. The temporalis, medial pterygoid and masseter muscles primarily elevate the jaw in molar

occlusion

66. Charcot's artery is -

a) Medial striate branch of anterior cerebral artery

b) Striate branch of middle cerebral artery

c) Fronto-polar artery

d) Calloso-marginal artery

Correct Answer - B

Ans. Striate branch of middle cerebral artery

- One of the larger striate branches of the middle cerebral artery is known as "Charcot's artery of cerebral hemorrhage".
- Medial striate artery (a branch of anterior cerebral artery) is known as recurrent artery of Heubner

67. Third ventricle is derived from

a) Mesencephalon

b) Rhombencephalon

c) Thalamencephalon

d) Telencephalon

Correct Answer - C

C i.e. Thalamencephalon

- The part of the diencephalon of the brain that includes the thalamus, pineal gland, and adjacent structures
 - **Thalamencephalon** also called **thalamic region** is a complex structure comprising thalamus (in the wider sense of the term *thalamus*, i.e. dorsal thalamus, or thalamus proper, plus subthalamus, or ventral thalamus) and several adjacent structures: epithalamus and metathalamus
- DEVELOPMENT:
- The cavity of the thalamencephalon opens behind into the cavity of the middle cerebral vesicle, and in front communicates with the hollow rudiments of the cerebral hemispheres, and eventually it becomes the cavity of the third ventricle.
 - The floor of the thalamencephalon is ultimately developed into the optic chiasma, part of the optic nerves, and the infundibulum.
 - The latter comes in contact with a process from the mouth, uniting with which it ultimately forms the pituitary body.
 - From the posterior part of the roof of the thalamencephalon is developed the pineal gland .
 - The anterior part of the roof of the thalamencephalon becomes very thin, and its place is finally occupied by a thin membrane containing a vascular plexus, which persists in the roof of the third ventricle

{choroidplexus).

- From the sides of the thalamencephalon, which become extremely thickened, are developed the optic thalami.

68. Anterior ethmoidal artery arises from:

a) Maxillary artery

b) Mandibular artery

c) Superficial temporal artery

d) Ophthalmic artery

Correct Answer - D

Anterior and posterior ethmoidal arteries are branches of ophthalmic artery which is a branch of Internal carotid artery.

69. Maximum Flexion in thoracic vertebrae occurs at -

a) Upper thoracic

b) Middle thoracic

c) Lower thoracic

d) Same at all level

Correct Answer - C

Ans. is 'c' i.e., Lower thoracic

- Flexion (forward flexion) and lateral flexion (bending) -> Maximum at lower thoracic.
- Rotation - Maximum at mid-thoracic.

Flexion	Extension	Lateral flexion	Rotation
Upper thoracic - 8-9.5°	7-9-5° throughout	Upper thoracic 55-6°	Upper thoracic - 12-16°
Mid-thoracic 10- 11.5°		Mid thoracic -> 7.8-8°	Mid thoracic - 21.5-25°
Lower-thoracic: 12.5-13°		Lower thoracic - 12-13°	Lower thoracic - 8.5-12°

70. Spinal nerve roots are supplied by ?

a) Anterior spinal artery

b) Posterior spinal artery

c) Ascending cervical artery

d) All of the above

Correct Answer - C

Ans. is 'c' i.e., Ascending cervical artery

Anterior and posterior spinal arteries supply spinal cord, but not spinal nerve roots.

- Spinal nerve roots are supplied by *radicular arteries* which are segmental branches of vertebral, ascending cervical, deep cervical, intercostal and sacral arteries.

Blood supply of spinal cord

1. The spinal cord receives its blood supply from :

- The anterior spinal artery
 - Two posterior spinal arteries
 - In addition to these channels the pia mater covering the spinal cord has an arterial plexus (called the arterial vasocorona) which also sends branches into the substance of the cord.
2. The main source of blood to the spinal cord is from the vertebral arteries (from which the anterior and posterior spinal arteries take origin)
- However, the blood from the vertebral artery reaches only up the cervical segments of the cord.
 - Lower down the spinal cord receive blood through radicular arteries that .These arise form spinal branches of the vertebral, ascending cervical, deep cervical, intertcostal, lumbar and sacral arteries

71. Spinal cord and nerve roots are supplied by ?

a) Anterior spinal artery

b) Posterior spinal artery

c) Ascending cervical artery

d) All of the above

Correct Answer - D

Ans. is D i.e., All of the above

Anterior and posterior spinal arteries supply spinal cord, but not spinal nerve roots.

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Blood supply of spinal cord

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72. Typical feature of thoracic vertebrae ?

a) Heart shaped

b) Large body

c) Triangular vertebral foramen

d) None

Correct Answer - A

Ans. is 'a' i.e., Heart shaped

Thoracic vertebrae

- There are 12 thoracic vertebrae. *T2-T9 are typical thoracic vertebrae and T1, T10, T11, T12 are atypical thoracic vertebrae.*
- Characteristic features of typical thoracic vertebra : -
- Body is medium sized and heart shaped.
- Spinous process is long and inclined downward.
- Vertebral foramen is small and circular.
- Transverse process possess costal facets for rib articulation (last two vertebrae lack these facets).
- Costal facets are also present on the sides of body for articulation of heads of ribs.
- Superior articular facet is directed backwards and laterally, and inferior articular facet faces forward and medially.
- Articular processes are vertically placed and interlocked; So dislocation can only occur if they are fractured.

SHAPE:

- The thoracic curve, concave forward, begins at the middle of the second and ends at the middle of the twelfth thoracic vertebra. Its most prominent point behind corresponds to the spinous process of the seventh thoracic vertebra. This curve is known as a kyphotic curve.

- The thoracic and sacral kyphotic curves are termed primary curves, because they are present in the fetus. The cervical and lumbar curves are *compensatory* or *secondary*, and are developed after birth

73.

Which of this part of vertebral canal will show secondary curves with concavity backwards?

a) Cervical

b) Thoracic

c) Sacral

d) Coccyx

Correct Answer - A

A i.e. Cervical

The thoracic and sacral kyphotic curves are termed **primary curves**, because they are present in the fetus.

The cervical and lumbar curves are *compensatory* or **secondary**, and are developed after birth.

KYPHOTIC CURVE:

- The thoracic curve, concave forward, begins at the middle of the second and ends at the middle of the twelfth thoracic vertebra. Its most prominent point behind corresponds to the spinous process of the seventh thoracic vertebra. This curve is known as a kyphotic curve.
- The sacral curve begins at the sacrovertebral articulation, and ends at the point of the coccyx; its concavity is directed downward and forward as a kyphotic curve.

LORDOTIC CURVES:

- The lumbar curve is more marked in the female than in the male; it begins at the middle of the last thoracic vertebra, and ends at the sacrovertebral angle. It is convex anteriorly, the convexity of the lower three vertebrae being much greater than that of the upper two. This curve is described as a lordotic curve.
- The upper cervical spine has a curve, convex forward, that begins at

the axis (second cervical vertebra) at the apex of the odontoid process or dens, and ends at the middle of the second thoracic vertebra; it is the least marked of all the curves. This inward curve is known as a lordotic curve.



74. True about erector spinae are all except ?

a) Causes flexion of trunk

b) Causes lateral flexion and rotation of trunk

c) Includes iliocostalis, longissimus and spinalis

d) All are correct

Correct Answer - A

Ans. is 'a' i.e., Causes flexion of trunk

- **Erector spinae** is group of muscles of back which extends the vertebral column.
- It is paired formed of 3 other muscles and tendons and runs more or less vertically.

From medial to lateral it includes -

- Spinalis
- Longissimus
- Iliocostalis

Function:

- On bilateral contraction it causes extension of vertebral column.
- On unilateral contraction it causes lateral flexion (bending) and rotation to ipsilateral side.

75. Which of the following structure helps in maintaining the centralized location of the spinal cord in the subarachnoid space?

a) Filum terminale

b) Cerebrospinal fluid

c) Denticulate ligament

d) All of the above

Correct Answer - C

Denticulate ligaments are lateral extensions of the pia mater which attaches to the arachnoid and dura mater. *It helps in maintaining the centralized location of the spinal cord in the subarachnoid space.* These ligaments are found between the ventral and dorsal roots, and project through the arachnoid mater in order to attach to the dura mater in a series of sawtooth projections.

Filum terminale is an extension of the pia mater beyond the tip of the spinal cord which attaches to the coccyx in the vertebral canal.

76. Organogenesis is maximally affected in which period of gestation ?

a) Germinal phase

b) Embryonic phase

c) Fetal phase

d) None

Correct Answer - B

Ans. is 'b' i.e., Embryonic phase

The development of a new individual in the uterus involves three phases :-

1. Pre-embryo phase or germinal phase (day 0-3 weeks).
 2. Embryo phase or embryonic period (weeks 4-8).
 3. Fetal phase (weeks 8-38).
- The embryonic period of development extends from fourth to eighth week of gestation and is also called period of organogenesis.
 - During this period the main organ systems are developed from three germinal layers. However, the function of most of them is negligible except for cardiovascular system, i.e. cardiovascular system is the earliest to function.

77. Organogenesis is maximally affected in which period of gestation ?

a) 1-4 weeks

b) 4-8 weeks

c) 10-15 weeks

d) 15-20 weeks

Correct Answer - B

Ans. is 'b' i.e., 4-8 weeks

The development of a new individual in the uterus involves three phases :-

1. Pre-embryo phase or germinal phase (day 0-3 weeks).
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- The embryonic period of development extends from fourth to eighth week of gestation and is also called period of organogenesis.
 - During this period the main organ systems are developed from three germinal layers. However, the function of most of them is negligible except for cardiovascular system, i.e. cardiovascular system is the earliest to function.

78. Centromere near the end of chromosome

a) Acrocentric

b) Metacentric

c) Submetacentric

d) Telocentric

Correct Answer - A

Acrocentric

Centromere positions

Each chromosome has two arms, labeled p (the shorter of the two) and q (the longer). The p arm is named for "petit" meaning 'small'; the q arm is named q simply because it follows p in the alphabet. ("q" refers to the French word "queue" meaning 'tail')

Metacentric: A chromosome is metacentric if its two arms are roughly equal in length. In some cases, a metacentric chromosome is formed by balanced Robertsonian translocation: the fusion of two acrocentric chromosomes to form one metacentric chromosome.

Example 1, 3, 16, 19, 20.

Submetacentric: If arms' lengths are unequal, the chromosome is said to be Submetacentric. Example-*X chromosome, 2, 4, 12, 17, 18*

Acrocentric: If the p (short) arm is so short that is hard to observe, but still present, then the chromosome is acrocentric (The "acro-" in acrocentric refers to the Greek word for "peak"). The human genome includes acrocentric *Y-chromosomes, 13, 14, 15, 21 and 22*

79. Nucleus pulposus is derived from ?

a) Sclerotome

b) Myotome

c) Notochord

d) None

Correct Answer - C

Ans. is 'c' i.e., Notochord

Development of vertebral column

- The human nervous system develops from *neuroectoderm*.
- During development, behind the neuroectoderm lies the *mesoderm* (*paraxial mesoderm*) that *encloses the notochord* (a derivative of endoderm).
- This paraxial mesoderm give rise to *somites*.
- Somites further differentiated into
 - i. *Dermatomyotome* :- Give rise to skeletal muscles and dermis.
 - i. *Sclerotomes* :- Give rise to vertebral column.

Sclerotomes which surround notochord starts projecting posteriorly (dorsally) to surround neural tube and forms.
- *Ventral sclerotomes* :- Give rise to *vertebral body and annulus fibrosus*.
- *Lateral sclerotomes* :- Give rise to *vertebral arch (pedicle and lamina)*.
- *Dorsal sclerotomes* :- Give rise to spinous process.
- *The notochord forms the nucleus pulposus.*

80. Meckel's diverticulum is a remnant of ?

a) Stenson's duct

b) Wolffian duct

c) Mullerian duct

d) Vitellointestinal duct

Correct Answer - D

Ans. is 'd' i.e., Vitellointestinal duct

Meckel's diverticulum

- Meckel's diverticulum is the persistent proximal part of the vitellointestinal duct which normally disappears during intrauterine life.
- It follows '*rule of 2*' :- present in 2% subjects, 2 inches (5 cm) long and is situated 2 feet (60 cm) proximal to ileocecal valve.
- It is attached to antimesenteric border of ileum.
- Its calibre is equal to that of the ileum.
- Its apex may be free or attached to umbilicus or mesentery by a fibrous band. o Vitellointestinal duct possesses all three coats of intestinal wall.

81. The defect as shown in the picture below occurs due to defect in which of the following arches?



a) 1st arch defect.

b) 2nd arch defect.

c) 3rd arch defect.

d) 4th arch defect.

Correct Answer - A

Ans:A.)First Arch Defect

The image shown is of **Treacher Collins syndrome**.

- First arch syndromes are congenital defects caused by a failure of neural crest cells to migrate into the first pharyngeal arch.
- They can produce facial anomalies.
- Examples of first arch syndromes include **Treacher Collins syndrome** and **Pierre Robin syndrome**.
- **Treacher Collins syndrome** is an autosomal dominant congenital disorder characterized by craniofacial deformities, involving the ears, eyes, cheekbones, and jawbone. Those affected have normal

intelligence.

- The typical physical features include downward-slanting eyes, micrognathia (a small lower jaw), conductive hearing loss, underdeveloped zygomatic bones, drooping part of the lateral lower eyelids, and malformed or absent ears.
- **Pierre Robin Syndrome** is characterized by an unusually small mandible (micrognathia), posterior displacement or retraction of the tongue (glossoptosis), and upper airway obstruction.

82. Patent foramen ovate is due to?

a) Failure of closure of sinoatrial orifice

b) Failure of fusion of septum primum and endocardial cushion

c) Failure of fusion of septum primum and septum intermedium

d) Failure of fusion of septum primum and septum secundum

Correct Answer - D

Ans. is 'd' i.e., Failure of fusion of septum primum and septum secundum

- After birth, the foramen ovale closes by fusion of septum primum with septum secundum.
- Failure of fusion of these two septa results in patent foramen ovale.

83. A newborn baby is noted to have a left unilateral cleft lip. There are no abnormalities of the baby's palate. Which of the following developmental defects accounts for this occurrence?

a) Failure of the left lateral palatine process to fuse with the median palatine process

b) Failure of the left maxillary prominence to unite with the left medial nasal prominence

c) Failure of the primary palate to fuse with the secondary palate

d) Failure of the right and left medial nasal prominences to merge

Correct Answer - B

In the formation of the upper lip, the right and left medial nasal prominences merge to form the philtrum of the upper lip. The lateral maxillary prominence then merges with the merged medial nasal prominences. Failure of this merger to occur results in a **unilateral cleft lip**. Failure of a lateral palatine process to fuse with the median palatine process, which is synonymous with a failure of the primary palate to fuse with the secondary palate, results in a **primary cleft palate**. Primary clefts of the palate are found anterior to the incisive foramen of the palate. Primary cleft palates may occur along with cleft lips but are the result of a separate developmental defect.

Failure of the right and left medial nasal prominences to merge results in a **median cleft lip**. This is a rare anomaly. Normally, the right and left medial nasal prominences merge into a single prominence which forms the philtrum of the lip.

Ref: Losee J.E., Gimbel M., Rubin J., Wallace C.G., Wei F. (2010). Chapter 45. Plastic and Reconstructive Surgery. In F.C. Brunickardi, D.K. Andersen, T.R. Billiar, D.L. Dunn, J.G. Hunter, J.B. Matthews, R.E. Pollock (Eds), *Schwartz's Principles of Surgery*, 9e.

84. Structure derived from first pharyngeal arch:

a) Levator palatini

b) Buccinator

c) Stylohyoid

d) Anterior belly of digastric

Correct Answer - D

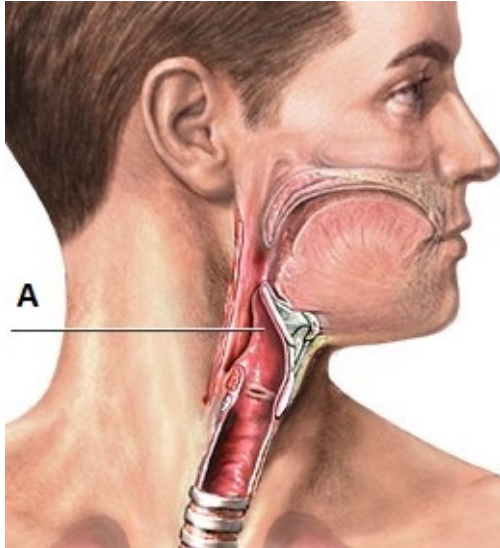
Answer D. Anterior belly of digastric

MESODERMAL DERIVATIVES OF PHARYNGEAL ARCHES

Pharyngeal arch	Muscular contributions	Skeletal contributions	Nerve
Ist (also called "mandibular arch")	<ul style="list-style-type: none"> • Mylohyoid • Muscles of mastication • Anterior belly of digastric • Tensor veli palatini • Tensor tympani • Stapedius • Stylohyoid 	<ul style="list-style-type: none"> • Maxilla • Zygomatic bone • part of temporal and vomer, sphenoid, mandible • Meckel's cartilage:- Malleus, incus • Anterior ligament of malleus • sphenomandibular ligament • Reichert's cartilage, stapes (except footplate) 	Mandibular division of Trigeminal Nerve (V3).

IIInd (also called the "hyoid arch")	<ul style="list-style-type: none"> • Posterior belly of digastric • Facial expression muscles 	<ul style="list-style-type: none"> • Styloid process • Stylohyoid ligament • Smaller cornu of hyoid • Superior part of body of hyoid 	Facial
IIIrd	<ul style="list-style-type: none"> • Stylopharyngeus 	<ul style="list-style-type: none"> • Greater cornu of hyoid • Lower part of body of hyoid 	Glossopharyngeal
IVth	<ul style="list-style-type: none"> • Pharyngeal muscles • Cricothyroid 	<ul style="list-style-type: none"> • Cartilage of larynx except arytenoids • superior parathyroids, epiglottic cartilage 	Superior laryngeal branch of Vagus
VIth	<ul style="list-style-type: none"> • Intrinsic muscles of larynx (except cricothyroid) 	<ul style="list-style-type: none"> • Arytenoid cartilages of larynx 	Recurrent laryngeal nerve (branch of vagus)

85. Which of the following pharyngeal arch give rise to the structure marked as "A" in embryological life in the picture below?



a) 1st pharyngeal arch.

b) 2nd pharyngeal arch.

c) 3rd pharyngeal arch.

d) 4th pharyngeal arch.

Correct Answer - D

Ans:D.)4th pharyngeal arch.

The structure marked as A in the picture above represents the **epiglottis**.

DERIVATIVES OF PHARYNGEAL ARCH

Pharyngeal arch	Muscular contributions
------------------------	-------------------------------

1st (also called **"mandibular arch"**) Muscles of mastication, anterior belly of the digastric, mylohyoid, tensor tympani, tensor veli palatini

2nd (also called the **"hyoid arch"**) Muscles of facial expression, buccinator, platysma, stapedius, stylohyoid, posterior belly of the digastric, auricular

3rd Stylopharyngeus

4th Cricothyroid muscle, all intrinsic muscles of soft palate (including levator veli palatini) *except* tensor veli palatini

6th All intrinsic muscles of larynx *except* the cricothyroid muscle

86. Ventral pancreatic duct give rise to ?

a) Body

b) Tail

c) Neck

d) Uncinate process

Correct Answer - D

Ans. is 'd' i.e., Uncinate process

Development of pancreas

- Pancreas is developed from the two pancreatic buds.
 - i) Dorsal pancreatic bud :-* It is larger and most of the pancreas is derived from it i.e. most of the head, and whole neck, body & tail.
 - ii) Ventral pancreatic bud :-* It is smaller and forms lower part of the head of pancreas including uncinat process.
- During 7th week of development, the ventral and dorsal pancreatic buds fuse to form a single pancreatic mass.
- After the fusion of ventral and dorsal pancreatic buds, their ducts develop cross communications. Final duct system is formed as below ?
 - i) Main pancreatic duct (Duct of wirsung) is formed by the duct of ventral bud, distal part of duct of dorsal bud and an oblique communication between the two.* The main pancreatic duct join the bile duct to form hepatopancreatic ampulla that enters th 2nd part of duodenum at major duodenal papilla.
 - ii) Accessory pancreatic duct is formed by the proximal part of the duct of dorsal bud. It opens into 2nd part of duodenum at minor duodenal papilla, 2 cm proximal (cranial) to major duodenal papilla.*

Anomalies of pancreatic development may be:

1. *Annular pancreas :-* Two components of the ventral bud fail to

fuse and grow in opposite direction around the duodenum and meet the dorsal pancreatic duct.

2. *Pancreatic divisum (divided pancreas)* :- Ventral and dorsal buds fail to fuse with each other. It is the most common congenital anomaly of pancreas.

3. *Inversion of pancreatic duct* :- The main pancreatic duct is formed by the duct of dorsal bud, i.e. accessory duct is larger than the main duct and the main drainage of pancreas is through the minor duodenal papilla.

4. *Accessory pancreatic tissue* :- May be found in ?

- i) Wall of stomach, duodenum, jejunum or ileum.
- ii) Meckel's diverticulum.

87. Paramesonephric duct forms which of the following

a) Ureter

b) Uterus

c) Bladder

d) Penis

Correct Answer - B

B. i.e. Uterus

Paramesonephric ducts (or **Müllerian ducts**) are paired ducts of the embryo that run down the lateral sides of the urogenital ridge and terminate at the sinus tubercle in the primitive urogenital sinus. In the female, they will develop to form the uterine tubes, uterus, cervix, and the upper two third of the vagina. Lower 1/3 of vagina is derived from sinovaginal bulb derived from urogenital sinus; in the male, they are lost. These ducts are made of tissue of mesodermal origin.

88. Muscular component of dorsal aorta develops from?

a) Axial mesoderm

b) Paraxial mesoderm

c) Intermediate mesoderm

d) Lateral plate mesoderm

Correct Answer - D

D i.e. Lateral plate mesoderm

Muscular component of dorsal aorta develops from splanchnopleure (splanchnic/ visceral) layer of lateral plate mesoderm

- Angioblastic mesenchyme forms early in 3rd week of development from extraembryonic mesenchyme in the splanchnopleure (splanchnic/ visceral) of yolk sac, in the body stalk (containing allantois), and in the somatopleure of the chorion. The *peripheral cells* flattens as a *vacular endothelium*, whereas *central cells* transform into *primitive RBCs*.
- *Intra embryonic blood vessels are first seen at endoderm mesenchyme interface within the lateral splanchnic mesenchyme* at the caudolateral margins of the cranial intestinal portion. Angioblastic competence has been demonstrated within the ventral (splanchnopleuric) mesenchyme with which the endoderm interacts. However, the notochord, prechordal plate and ectodermal tissue do not contain angiogenic cells.
- The earliest angiogenic mesenchymal cells form blood vessels by vasculogenesis, a process in which new vessels (*e.g endothelial heart tubes, dorsal aortae, umbilical and early vitelline vessels*) develop in situ. Later vessels develop by angiogenesis, sprouting and branching from the endothelium of pre existing vessels.

- Somites , derived from paraxial mesenchyme, have been shown to be a source of angioblasts which either differentiate with the somite derivatives or migrate to the neural tube, ventrolateral body wall, limb buds, mesonephros and dorsal > part of aorta.

89. Diaphragm develops from all except:

a) Septum transversum

b) Dorsal mesocardium

c) Pleuroperitoneal membrane

d) Cervical myotomes

Correct Answer - B

B i.e. Dorsal mesocardium

- Diaphragm develops **from 4 structures** derived from **mesoderm** which unite to form a sheet.

1) Septum transversum :- Gives origin to sternal part and central tendinous region.

2) Pleuroperitoneal membrane :- Dorsal paired portion.

3) Dorsal mesentery of oesophagus :- Gives origin to crural part (Dorsal unpaired portion).

4) Lateral body walls (from cervical myotome) :- Gives origin to peripheral costal portion of diaphragm.

Mn - "ST PM DMO and CM = ST Prime Minister, District Medical Officer & Chief Minister"

90. Atlanto axial joint is:

a) Hinge joint

b) Ball and socket joint

c) Pivot joint

d) Saddle joint

Correct Answer - C

Pivot joint

The **atlantoaxial joint** is a **joint** in the upper part of the neck between the first and second cervical vertebrae; the atlas and axis. It is a pivot **joint**.

91. Intervertebral disc is an example of which category of cartilages?

a) Hyaline cartilage

b) Fibro cartilage

c) Elastic cartilage

d) Fibroelastic cartilage

Correct Answer - B

Intervertebral disc is a type of fibrocartilage. Fibrocartilage is characterized by large amount of irregular and dense bundles of collagen fibers in the matrix. It consists of alternating layers of cartilage matrix and thick dense layers of type I collagen fibers.

92. Root value of ankle jerk-

a) L1-L2

b) L3-L4

c) L4-L5

d) S1

Correct Answer - D

Answer is D S1

The **ankle jerk reflex**, also known as the **Achilles reflex**, occurs when the Achilles tendon is tapped while the foot is dorsiflexed.

It is a type of stretch reflex that tests the function of the gastrocnemius muscle and the nerve that supplies it.

A positive result would be the jerking of the foot towards its plantar surface.

Being a deep tendon reflex, it is monosynaptic. It is also a stretch reflex.

These are monosynaptic spinal segmental reflexes.

When they are intact, integrity of the following is confirmed: cutaneous innervation, motor supply, and cortical input to the corresponding spinal segment.

This reflex is mediated by the S1 spinal segment of the spinal cord.

93. Nerve roots involved in Erb's palsy:

a) C5, C6

b) C6, C7

c) C7, C8, T1

d) C5, C6, C7, C8, T1

Correct Answer - A

Erb-Duchenne Palsy

Upper lesions of the brachial plexus are injuries resulting from excessive displacement of the head to the opposite side and depression of the shoulder on the same side. This causes excessive traction or even tearing of C5 and C6 roots of the plexus. It occurs in infants during a difficult delivery or in adults after a blow to or fall on the shoulder.

The suprascapular nerve, the nerve to the subclavius, and the musculocutaneous and axillary nerves all possess nerve fibers derived from C5 and C6 roots and will therefore be functionless. The following muscles will consequently be paralyzed: the supraspinatus (abductor of the shoulder) and infraspinatus (lateral rotator of the shoulder); the subclavius (depresses the clavicle); the biceps brachii (supinator of the forearm, flexor of the elbow, weak flexor of the shoulder) and the greater part of the brachialis (flexor of the elbow) and the coracobrachialis (flexes the shoulder); and the deltoid (abductor of the shoulder) and the teres minor (lateral rotator of the shoulder).

Thus, the limb will hang limply by the side, medially rotated by the unopposed sternocostal part of the pectoralis major; the forearm will be pronated because of loss of the action of the biceps.

The position of the upper limb in this condition has been likened to that of a porter or waiter holding for a tip. In addition, there will be a

that of a porter or waiter holding for a tip. In addition, there will be a loss of sensation down the lateral side of the arm.

Treatment

The three most common treatments from Erb's Palsy are: Nerve transfers (usually from the opposite leg), sub scapularis releases and latissimus dorsi tendon transfers.

94. Contents of Adductor canal are all EXCEPT:

a) Femoral artery

b) Popliteal artery

c) Nerve to Vastus medialis

d) Saphenous nerve

Correct Answer - B

Popliteal artery

THE ADDUCTOR CANAL (Subsartorial/Hunter's canal) is an aponeurotic tunnel in the middle third of the thigh, extending from the apex of the femoral triangle to the opening in the Adductor magnus, the Adductor hiatus.

(Femoral artery, femoral vein and saphenous nerve go into this canal through superior foramen. Saphenous nerve and artery exit through anterior foramen. Finally, femoral artery and vein exit via the inferior foramen (usually called hiatus) through gap between adductor magnus)

95. Torsion of knee results in injury most commonly to :

a) Torsion of knee results in injury most commonly to :

b) Medial meniscus

c) Fibular collateral ligament

d) Tibial collateral ligament

Correct Answer - D

D i.e. Tibial collateral ligament

- Most knee ligament injuries occur while the *knee is bent* i.e. when the capsule and ligaments are relaxed and the *femur is allowed to rotate on tibia*.
- *Injury to the medial (tibial) collateral ligament is the most common knee ligament injury*
- The medial structures are most often affected but if the injury has a twist in addition to a valgus force the ACL may also be damaged. The twisting force in a weight bearing knee often tears the medial meniscus, causing a well recognized *trid of MCL, ACL, and medial meniscus injury*. ("unhappy traid of O' Donoghue")

96. Root value for nerve to Quadratus femoris ?

a) L1,L2,L3

b) L2,L3,L4

c) L₄,L₅,S₁

d) S₁, S2,S3

Correct Answer - C

Ans. C. L₄,L₅,S₁

- The nerve to quadratus femoris arises from the **anterior** divisions of the **sacral plexus**.
- It is formed from the L4-S1 nerve roots and exits the pelvis via the greater **sciatic** foramen inferior to the **piriformis muscle** and deep to the **sciatic** nerve.

97. Dodd's perforator is present between ?

- a) Short saphenous and femoral veins
- b) Short saphenous and great saphenous veins
- c) Great saphenous and femoral veins
- d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Great saphenous and femoral veins

A. Spheno-femoral perforators (between great-saphenous and femoral vein)

1. Hunterian perforator -> In mid thigh (In adductor canal)

2. Dodd's perforator In distal thigh

B. Boyd's perforator (kee perforator) 4 Just below knee between great saphenous and posterior tibial vein.

C. Cockett Perforators (medial ankle or lower leg perforators) :
Between posterior arch vein and posterior tibial vein ?

1. Cockett I (Lower medial) - Behind and below medial malleolus

2. Cockett II (Middle medial) - Between Cockett I & III (10 cm above medial malleolus)

3. Cockett III (Upper medial) - At junction of middle and lower third of leg (15 cm from medial malleolus).

D. Lateral ankle perforator: Between short saphenous vein and peroneal vein. At junction of middle and lower third of leg.

**98. Superficial inguinal lymph node drains
A/E:**

a) Toes & finger

b) Perineum

c) Gluteal region

d) Anterior abdominal wall below umbilicus

Correct Answer - A
A i.e. Toes & fingers

99. Pudendal nerve block involves?

a) L1 L2 L3

b) L3 L4 L5

c) S1 S2 S3

d) S2 S3 S4

Correct Answer - D

S2 S3 S4 REF: Morgan 3th ed p. 331, *Essentials of Pain*

Management - Nalini Vadivelu, Richard D. Urman, Roberta L. Hines
Page 428, Grant's atlas of anatomy - Page 270

"Pudendal nerve block involves S2 S3 S4"

The pudendal nerve innervates the lower vagina, perineum, and vulva. Block of this nerve can be used to supplement pain relief during the second stage of labor. The S2-S4 nerves give off branches to the *pudendal nerve* that pass between the pyriformis and coccygeal muscles. The nerve is blocked at the pudendal canal, just lateral and inferior to the sacrospinous ligament. A pudendal nerve block does not abolish sensation from anterior and lateral part of perineum and hence a block of ilioinguinal and/or posterior cutaneous nerve of thigh may also be required.

100. Potassium (K⁺) is the most abundant intracellular cation. Highest concentration of potassium is seen in:

a) Bile

b) Pancreatic juice

c) Ileal secretions

d) Rectum

Correct Answer - D

There is evidence that active potassium secretion occurs in the distal colon. This secretion combined with potassium in bacteria and colonic mucous in stool may explain the relatively high concentration of potassium, 50–90 mmol/L, in stool.

Ref: Essentials of General Surgery, 4e edited by Peter F. Lawrence, Richard M. Bell, Merrill T. Dayton, 2006, Page 55.

101. Intracellular concentration of K⁺ is -

a) 5.5 meq/L

b) 15 meq/L

c) 28 meq/L

d) 150 meq/L

Correct Answer - D

Ans. is 'd' i.e., 150 meq/L

Ref: Principles of medical physiology p. 712)

- Intracellular K⁺ concentration -+ 150 meq/L
- Extracellular K⁺ concentration -+ 4.5 - 5 meq/L

102. Diffusion of lipid-insoluble substances across the cell membrane depends on all of the following except

a) Hydrated radius

b) Electrical charge

c) Lipid solubility

d) Shape

Correct Answer - C

Ans: C. Lipid solubility

(Ref: Principle of medicalphysiolog p. 712).

- Simple diffusion of lipid-soluble substances
- The rate of diffusion through the lipid bilayer of the cell membrane is directly proportional to the solubility of a substance in lipids.
- Therefore, molecules of substances like oxygen, nitrogen, carbon dioxide, alcohol, steroid hormones and weak organic acids and bases, being lipid soluble, diffuse very rapidly through the lipid bilayer of the cell membrane.

103. True about facilitated diffusion are A/E:

a) Occur in direction of concentration gradient

b) Does not require energy

c) Occur in direction opposite to electrical gradient

d) Facilitated by charge of molecule

Correct Answer - C

C i.e. Occur in direction opposite to electrical gradient

104. Equilibrium potential for an ion is calculated using:

a) Gibbs-Donnan equation

b) Nerst equation

c) Goldman equation

d) None

Correct Answer - B

B i.e. Nernst equation

Equilibrium potential (i.e., membrane potential at which equilibrium b/w concentration & electrical gradient exist) *for any (one) univalent ion is calculated by Nernst equation* and for several different ions by *Goldmann- Hodgkin-katz equation*.

105. Least diffusible ion among following ?

a) Na⁺

b) K⁺

c) Cl⁻

d) Urea

Correct Answer - A

Ans. is'a'i.e., Na⁺

- Permeability coefficient & permeability of some important molecules in increasing order of frequency are Na⁺ < K⁺ < Cl⁻ < Glucose < Tryptophan < Urea = Glycerol < Indole < H₂O.

106. Isometric contraction is seen in?

a) Extraocular muscles

b) Small muscles of hand

c) Abdominal muscles

d) Antigravity muscles

Correct Answer - D

Ans. is'd'i.e., Antigravity muscles

[Rel Prep.Manual For UG p.a51]

- Isotonic contraction means contraction in which there is change of length at constant tension.
- The tension is equal to the weight lifted during contraction of the muscle.
- Isometric contraction means contraction in which there is no change in length of the muscle (constant length) but there is an increase in tension.
- So, isometric contraction generate more force of contraction (tension).
- Best example of isometric contraction is the contraction of antigravity muscles to maintain tension in erect posture, without changing length.

107. Increased ventilation at start of exercise is due to?

a) Stretch receptors

b) Proprioceptors

c) Pain receptors

d) T PCO

Correct Answer - B

Ans. is 'b' i.e., Proprioceptors

[Ref Ganong 23'd/e p. 636)

- In moderate exercise the abrupt increase in ventilation at the start of exercise is due to psychic stimuli and afferent impulses from proprioceptors in muscles, tendons and joints.
- Arterial pH, PCO₂, and PO₂, remain constant during moderate exercise because increase in ventilation is proportionate to increase in O₂ consumption.

108. Increase heart rate just before starting exercise is due to?

a) Stretch receptors

b) Proprioceptors

c) Release of adrenaline

d) All of the above

Correct Answer - C

Ans. is 'c' i.e., Release of adrenaline

(Ref As level textbook p.54)

- Heart rate increase before the start of exercise , i.e, anticipatory rise in heart rate.
- It is caused by release of adrenaline from the adrenal medulla acting directly on the heart and the impact of emotional excitement on the medulla.
- Heart rate increase further rapidly with the start of exercise.
- It is due to the following receptors.
- Proprioceptors (in muscle & joints) relating to increased motor activity.
- Chemoreceptors relating to increased CO₂, /lactic acid and decreased O₂.
- These receptors send messages to cardiac control center causing an increase in heart rate.

109. Soreness and pain in muscles after vigorous exercise is due to ?

a) Hyperkalemia

b) Lactic acidosis

c) Hyperthermia

d) Hyponatremia

Correct Answer - B

Ans. is 'b' i.e., Lactic acidosis

[Rel Exercise physiology p. 535)

- Immediate -onset Soreness is characterized by pain during and immediately after exercise,
- This type of soreness is thought to be caused by stimulation of pain receptors by metabolic by-products of cellular respiration, especially H^+ associated with increased lactic acid levels.

110. Fast muscle fibers are?

a) Red

b) Oxidative

c) Tonic

d) Glycolytic

Correct Answer - D

Ans. is'd'i.e., Glycolytic

(Ref: Principles of medicalphysiolog p. 512)

TYPES OF MUSCLE FIBERS:

Two fibers types:

- **Type I/red fibers**
- **Type II/white fibers.**
- Motor unit contains only one muscle fibers type:
- I.e., All motor unit fibers are either type-I or type II.
- Hence, named accordingly.

CHARACTERISTICS OF MUSCLE FIBER TYPES:

Parameters/Characteristics	Type I muscle fiber	Type II muscle fiber
Difference according to fiber type	Red - • Due to ↑ed myoglobin & mitochondrial content.	White - • Lack myoglobin & have few mitochondria.
Subtypes	- Nil -	Type IIA & Type IIB • IIA - Oxidative & glycolytic. • IIB - Glycolytic.

Other names	<ul style="list-style-type: none"> 1. "Slow-twitch" fibers: <ul style="list-style-type: none"> • Due to small fiber length & diameter. • Maintain relatively sustained contraction. 2. "Slow motor units" • Have early recruitment. 	<ul style="list-style-type: none"> • Usually type IIB fibers refer type II fibers. <ol style="list-style-type: none"> 1. "Fast-twitch" fibers - • Short duration of twitch. • Due to bigger diameter & ↑ed myosin & actin filaments. • Generate greater tension comparatively. <ol style="list-style-type: none"> 2. Type IIa/"Fast Fatigue Resistant" (FR) units: <ul style="list-style-type: none"> • Intermediate fatigability. 3. Type IIb/"Fast fatigable units": <ul style="list-style-type: none"> • Late recruitment threshold
Metabolism	<ul style="list-style-type: none"> • Aerobic. • Slow oxidative. 	<ul style="list-style-type: none"> • Anaerobic. • Fast glycolytic.
Glycolytic capacity & glycogen content	Low	High
Sarcoplasmic reticulum	Normal	Extensive
Blood supply	High	Normal
Myosin ATPase activity	Low	High
Conduction velocity	Slow	Fast
Contractile properties	Slow time to peak tension	<ul style="list-style-type: none"> • Type IIa - Fast time to peak tension. • Type IIb - Fastest

Type of muscle

time to peak
tension.

Red muscles -

- In muscles required for prolonged contraction.
- Also with muscles maintaining posture.
- Back muscles (At back of hip)
- Gluteus muscles .
- Calf muscles.

White/Pale

muscles -

- Muscles helpful in rapid contractions & finer movements.
- Hand & extraocular muscles.

111. Actin filament is not present in which of the band zones?

a) H band

b) I band

c) M band

d) Z band

Correct Answer - A

The myosin and actin filaments overlap in peripheral regions of the A band, whereas a middle region (called the H zone) contains only myosin. H-band is the zone of the thick filaments that is not superimposed by the thin filaments.

112. Hormone responsible for BP regulation after a fall due to blood loss.

a) ADH

b) ANP

c) Epinephrine

d) Aldosterone

Correct Answer - A

Ans. is 'a' i.e., ADH

(principles of medical physiology p. 573)

- Blood pressure is regulated by following mechanisms.

Short term regulation

- These mechanisms act immediately and correct the blood pressure quickly.

These are :-

- .. Baroreceptor reflex: Works during Bp range 70-150 mmHg
- 2.. Chemoreceptor reflex - Works when Bp below 80 mmHg.
- 3.. CNS ischemic response : This the only hope of survival when BP is below 40 mmHg.

Hormonal release : These are -

- .. Antidiuretic hormone (ADH) : Increases water reabsorption in kidney.
- 2.. Angiotensin II: Causes vasoconstriction.

113.

Sodium channels are maximum in which part of neuron ?

a) Soma

b) Axon hillock

c) Dendrites

d) Axon

Correct Answer - B

Ans. is'b'i.e., Axon hillock

- In a motor neuron, the axon hillock and the initial segment of axon have the lowest threshold for excitation.
- This is because they have a much higher intensity of voltage gated sodium channel.

114. Dorsal root ganglion contains ?

a) Dendrites of motor neuron

b) Dendrites of sensory neuron

c) Body of motor neuron

d) Body of sensory neuron

Correct Answer - D

Ans. is 'd' i.e., Body of sensory neuron

(Ref Ganong 23'd/e p'153)

- Dorsal root ganglion contains body (soma) of sensory neuron, coming from the receptor.

115. Visual center is present in?

a) Parietal lobe

b) Occipital lobe

c) Frontal lobe

d) Temporal Lobe

Correct Answer - B

Ans. is 'b' i.e., Occipital lobe

(Ref: BDC 6h/e Vol. III p. 421-425)

- Occipital lobe has the following areas related to vision

Primary visual cortex (strike area, area 17):

- It is present in medial surface of occipital lobe on upper lip and lower lip of calcarine sulcus.

116. EEG rhythm in full awake and alert state?

a) Alpha

b) Beta

c) Theta

d) Delta

Correct Answer - B

Ans. is 'b' i.e., Beta

[Ref: Ganong 24/e p. 273 & 23'd/e p. 233-235; Principles of medical physiology p. 6921]

- Beta wave is seen when the person is fully awake and alert and is thinking with maximum concentration.
- Therefore it is also called arousal or alert response.

117. Bilateral damage to lateral hypothalamus causes?

a) Hyperthermia

b) Hypothermia

c) Anorexia

d) Increased sexuality

Correct Answer - C

Ans. is 'c' i.e., Anorexia

Ref: Psychology As p'151)

- Feeding center is located in lateral hypothalamus, thus its damage will cause anorexia'
- Satiety center is located in the ventromedial hypothalamus, thus damage to this area causes overeating.

118. Unconscious proprioception is carried by ?

a) Dorsal column

b) Spinothalamic tract

c) Spinocerebellar tract

d) Reticulospinal tract

Correct Answer - C

Ans. is 'c' i.e., Spinocerebellar tract

(Ref. Principles of medical physiology p.712)

- Conscious proprioception → Dorsal column - medial lemniscal system.
- Unconscious proprioception → Spinocerebellar tract.

119. Which of the following is a chemoreceptor?

a) Osmoreceptors

b) Rods & cones

c) Hair cells

d) Merkel's disc

Correct Answer - A

Ans. is'a'i.e. Osmoreceptors

Chemoreceptors are:-

- Taste buds (gustatory receptors) - Osmoreceptors
- Olfactory receptors - Glucoreceptors

120. The nucleus involved in Papez circuit is:

a) Pulvinar

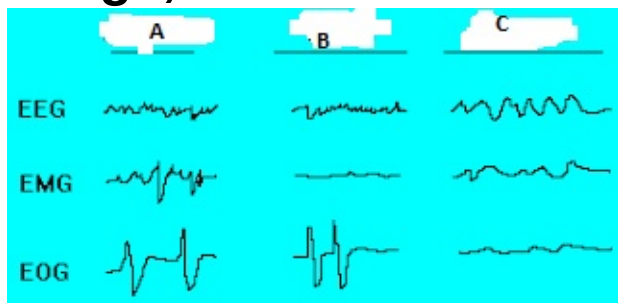
b) Intralaminar

c) VPL nucleus

d) Anterior nucleus of Thalamus

Correct Answer - D
D i.e. Anterior nucleus of Thalamus

121. Study the graphs carefully. In the image, wave 'C' indicates?



a) REM Sleep

b) NREM Sleep

c) Awake

d) Quiet Wakefulness

Correct Answer - B

Ans: B.) NREM sleep.

In the image, Wave A - represents awake stage, Wave B - represents REM sleep, Wave C - represents NREM sleep.

Sleep Cycle.

- Sleep is generally divided into 2 broad types: nonrapid eye movement (NREM) sleep and REM sleep.
- NREM and REM occur in alternating cycles, each lasting approximately 90-100 minutes, with a total of 4-6 cycles. In general, in the healthy young adult NREM sleep accounts for 75-90% of sleep time (3-5% stage I, 50-60% stage II, and 10-20% stages III and IV). REM sleep accounts for 10-25% of sleep time.
- Based on EEG changes, NREM is divided further into 4 stages (stage I, stage II, stage III, stage IV).

○

Stage I sleep is also referred to as drowsiness or prolept and is the

Stage I sleep is also referred to as drowsiness or presleep and is the first or earliest stage of sleep.

- The earliest indication of transition from wakefulness to stage I sleep (drowsiness) usually consists of a combination of drop out of alpha activity and slow rolling eye movements.
- Stage II is the predominant sleep stage during a normal night's sleep. The distinct and principal EEG criterion to establish stage II sleep is the appearance of sleep spindles or K complexes.
- Stages III and IV sleep are usually grouped together as "slow wave sleep" or "delta sleep."
- The different types and stages of sleep can be best identified using polysomnography, which simultaneously measures several body functions such as brain wave activity (electroencephalogram or EEG), eye movement (electrooculogram or EOG), muscle activity (electromyogram or EMG), respiration, heart rhythm, etc.
- Electroencephalogram :
 - Non-REM sleep is characterized by very slow but relatively high amplitude or high voltage oscillations (with the frequency gradually slowing and the amplitude increasing as sleep deepens), while REM sleep shows a much faster and lower amplitude trace, much more similar to normal waking activity
 - Brain waves during non-REM sleep tend to be highly synchronized, and those during REM sleep much more unsynchronized.
- Electrooculogram (EOG) :
 - Rapid eye movements during REM sleep, and little or no eye movement during non-REM sleep.
- Electromyogram (EMG) :
 - The body is effectively completely paralyzed during REM sleep, the body does make some limited movements during non-REM sleep, including a major change in body position about once every twenty or thirty minutes on average.

122. Dreaming is common in which stage of sleep:
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a) REM

b) NREM 1

c) NREM 2

d) NREM 3

Correct Answer - A

Ans. A: REM

Humans aroused at a time when they show the EEG characteristics of REM sleep generally report that they were dreaming, whereas individuals awakened from slow-wave sleep/ NREM do not. This observation and other evidence indicate that REM sleep and dreaming are closely associated. The tooth-grinding (bruxism) that occurs in some individuals is also associated with dreaming.

123. Reciprocal excitation is ?

a) Contraction of antagonist with relaxation of agonist

b) Contraction of agonist with relaxation of antagonist

c) Contraction of both agonist and antagonist

d) Relaxation of both agonist and antagonists

Correct Answer - A

Ans.is'a'i.e.,Contractionof antagonist with relaxation of agonist

- Principles Of medical physiology p.715)

Reciprocal inhibition:

- Seen in Stretch reflex.
- There is contraction of with relaxation of antagonists.

Reciprocal excitation:

- Seen in golgi tendon reflex (inverse stretch refelx).
- There is a relaxation of agonists with contraction of antagonists.

124. Which of the following is true about autonomic nervous system?

- a) The sympathetic outflow from the CNS is through both the cranial nerves and sympathetic chain
- b) The parasympathetic outflow from the CNS is through the cranial nerves only
- c) The superior hypogastric Plexus is located at the anterior aspect of the aortic bifurcation and the fifth lumbar vertebrae
- d) The superior hypogastric Plexus contains sympathetic chain

Correct Answer - C

The sympathetic preganglionic fibers leave the spinal cord with ventral roots of spinal cord between first thoracic and second lumbar segment called thoracolumbar division. The nerve fibers leaving the CNS from the brain and sacral portion of spinal cord is via III, VII, IX and X cranial nerves and second and fourth spinal nerves. Hollow viscera like stomach have dual innervation from both sympathetic and parasympathetic division: hypogastric plexus. This enables a very fine degree of control over the effect or organ .

125. Function of spinocerebellum is ?

a) Equilibrium

b) Smoothens and coordinates movement

c) Learning induced by change in vestibuloocular reflex

d) Planning and programming

Correct Answer - B

Ans. b' i.e., Smoothens and coordinates movement

126. Which one of the following clearly states the role of cerebellum in motor performance:

- a) Planning and programming of movement
- b) Convert abstract thought into voluntary action
- c) Initiation of skilled voluntary action
- d) Smoothens and coordinates ongoing movements

Correct Answer - D

D i.e. Smoothens and coordinates ongoing movement

Cerebellum smoothens & coordinates ongoing movement in motor performance this is the reason why lesion of cerebellum causes: -

- *Ataxia* (lack of coordination of movement)

- *Asynergia* (lack of coordination b/w different group of muscles)

- *Astasia* (Unsteady voluntary movement).

127. Normal tidal volume is ?

a) 500 ml

b) 12 00 ml

c) 3000 ml

d) 2400 ml

Correct Answer - A

Ans. is'a' i.e., 500 ml

(Ref: Ganong 24e/e p.629)

128. Normal residual volume is ?

a) 500 ml

b) 12 00 ml

c) 3000 ml

d) 2400 ml

Correct Answer - B

Ans. is'b'i.e., 1200 ml

(Ref: Ganong 24e/e p.629)

129. Normal inspiratory reserve volume (IRV) is ?

a) 500 ml

b) 1200 ml

c) 3000 ml

d) 4900 ml

Correct Answer - C

Ans. is 'c' i.e., 3000 ml

(Ref: Ganong 24e/e p.629)

130. Normal expiratory reserve volume of adult?

a) 500 ml

b) 3000 ml

c) 1200 ml

d) 4500 ml

Correct Answer - C

Ans. is 'c' i.e., 1200 ml

(Ref: Ganong 24n/e p.629)

- Inspiratory reserve volume → 3000 ml
- Expiratory reserve volume → 1200 ml

131. Mean pulmonary artery pressure is:
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a) 10 mm Hg

b) 15 mm Hg

c) 20 mm Hg

d) 25 mm Hg

Correct Answer - B

Ans. B:15 mm Hg

Pulmonary arterial pressure is generated by the right ventricle ejecting blood into the pulmonary circulation, which acts as a resistance to the output from the right ventricle. With each ejection of blood during ventricular systole, the pulmonary artery blood volume increases, which stretches the wall of the artery. As the heart relaxes (ventricular diastole), blood continues to flow from the pulmonary artery into the pulmonary circulation. The smaller arteries and arterioles serve as the chief resistance vessels, and through changes in their diameter, regulate pulmonary vascular resistance. In hemodynamic terms, the mean pulmonary arterial pressure (PAP) can be described by

$$\text{PAP} = (\text{CO} \times \text{PVR}) + \text{PVP}$$

Where CO = cardiac output, PVR = pulmonary vascular resistance, and PVP = pulmonary venous pressure.

The PVP is essentially the same as left atrial pressure. Therefore, increases in CO, PVR or PVP will lead to increases in PAP.

Normally, mean pulmonary artery pressure is about 15 mmHg, and the pulmonary artery systolic and diastolic pressures about 25 and 10 mmHg, respectively. Pulmonary venous pressure is about 8 mmHg. Therefore, the pressure gradient driving flow through the

pulmonary circulation is rather small at about 7 mmHg (mean pulmonary arterial minus venous pressures).

132. Chemoreceptors are located in which area?

a) Medulla

b) Arch of aorta

c) Bifurcation of carotid artery

d) All of the above

Correct Answer - D

Ans. is'd'i.e., All of the above

- Central chemoreceptors - Ventral Surface Of Medulla.
- Peripheral chemoreceptors - At bifurcation of common carotid artery (carotid body) and arch of aorta (aortic bodies)

133. V/Q ratio at the base of lung?

a) 1

b) 3

c) 0.6

d) 1.8

Correct Answer - C

Ans. is 'c' i.e., 0.6

(Ref: Ganong 24hle P.636-637)

- Overall V/Q ratio of lung 0.8
- V/Q ratio at aPex 3.0 (maximum)
- V/Q ratio at base - 0.6 (Least)

134. Physiological dead space is?

a) 150 ml

b) 200 ml

c) 250 ml

d) 100 ml

Correct Answer - A

150 ml REF: Guyton physiology 11th edition page 478,
http://en.wikipedia.org/wiki/Dead_space_%28physiology%29#Anatomical_dead_space

Indirect repeat from June 2009

"The normal dead space air in a young adult man is about 150 millilitres. This increases slightly with age"

Some of the air a person breathes never reaches the gas exchange areas but simply fills respiratory passages where gas exchange does not occur, such as the nose, pharynx, and trachea. This air is called *dead space air* because it is not useful for gas exchange.

TOTAL DEAD SPACE (also known as "PHYSIOLOGICAL" DEAD SPACE) can be divided into anatomical dead space and alveolar dead space.

.. ANATOMICAL DEAD SPACE

Anatomical dead space is the gas in the conducting areas of the respiratory system, such as the mouth and trachea, where air does not come into contact with the alveoli of the lungs. Birds, which, relatively, have a far longer and wider trachea than mammals, have a higher proportion of dead space.

It is normally equal in milliliters to your body weight in pounds. A 150 lb (68 kg) male would have an anatomical dead space of about 150 mL. 1 mL per lb or 2.2 mL per kilogram of body weight. This is the same conversion of kilograms to pounds, except the final unit is in

same conversion of kilograms to pounds, except the final unit is in mL. This is about a third of the resting tidal volume (450-500 mL). Anatomic dead space is the volume of the conducting airways. It may be measured by Fowler's method, a nitrogen washout technique.

.. ALVEOLAR DEAD SPACE

Alveolar dead space is caused by air contacting alveoli without blood flow in their adjacent pulmonary capillaries, i.e. ventilation without perfusion. As a result, no gas exchange can occur. Alveolar dead space is negligible in healthy individuals, but can increase dramatically in some lung diseases.

135. Which of the following increases turbulence in blood flow

a) Reynolds number less than 2000

b) Decreases in velocity of blood

c) Decrease in density of blood

d) Increase in diameter of blood vessel

Correct Answer - D

D i.e. Increase in diameter of blood vessels

Probability of *turbulence increases* with Reynolds number > 3000 , increase in **velocity** (above critical level), density of blood and diameter of vessel or with **decrease** in viscosity.

Average **velocity of flow is inversely proportional** to the total cross sectional area of the vessel. Therefore the average velocity of flow is high in aorta declines steadily in smaller vessels and is lowest in capillaries. So the cause of laminar flow in small vessels mainly is *large area of cross section and less effective velocity* Q .

Laminar (Streamline) Flow

- A streamline flow is also K/ a laminar flow because it moves in layers (or lamina). So a dye carefully introduced into a given lamina (layer) remain in that lamina as the fluid moves longitudinally along the tube.

In laminar flow the layer touching the wall of tube adheres to it and hardly moves b/o friction, while the concentric layer or lamina next to it shear/slide against this motionless layer with less friction. In this way the inner lamina moves faster than laminae on their outside with the result that the portion of fluid at the center moves fastest. This is why the shape of progressing front is parabola.

The velocity at the center of stream (in stream line flow) **is** maximal

and equal to twice the mean velocity of flow across the entire cross section of the tube. Flow of blood in vessels is normally **laminar (stream line)**, which means the layer in the center of stream has highest velocity & peripheral layer (near blood vessel wall) has lowest. Streamline flow is silent. Therefore no sounds are heard with stethoscope in normal arteries.

- Average velocity of flow is inversely proportional to the total cross section area of that vessel. Therefore the average velocity of blood is high (33 cm/s) in aorta (CS 2.5 cm²), **declines steadily in smaller vessels** and is lowest in the capillaries (0.3 mm/s), which have 1000 times the total cross sectional area of aorta (i.e. 2500 cm²).

The average velocity of blood flow increases again in veins and is relatively high in venacava, although not so high as in the aorta. So *the cause of laminar flow in small vessels is large area of cross section and less average velocity Q.*

Turbulence

- Turbulent flow is a *chaotic flow with irregular motions and flows in all directions*; it forms *eddies or whirlpools* and fluid elements *do not remain confined to definite lamina, but rapid, radial mixing occurs.*

- Turbulent flow offers more resistance than laminar flow; so greater pressure is required to force a given flow of fluid through the same tube when the flow is turbulent than when it is laminar. In turbulent flow, pressure drop is approximately proportional to the square of flow rate whereas in laminar flow, the pressure drop is proportional to the first power of the flow rate. So to produce same flow a pump like heart must do considerably more work if turbulence develops.

- Laminar flow occurs at velocities upto *critical velocity*, at or above which the flow becomes turbulent, and creates sound. Turbulent flow accounts for development of heart **sounds, murmurs** a/w valvular heart disease, **Korotkov sounds** heard during the measurement of arterial blood pressure, bruits heard over arteries constricted by atherosclerotic plaque and **functional cardiac murmurs** heard in patients with *hyper dynamic circulation (as thyrotoxicosis & severe chronic anemia)*.

Turbulence is more common in anemia because of **reduced viscosity** and **high flow velocities** a/w high cardiac output.

- Turbulence is usually accompanied by **audible vibrations**. **Blood clots** and **thrombi** are more likely to develop in turbulent flow than in laminarflow.

136. Pericytes, which are seen in the capillary bed are:

a) Modified endothelial cells

b) Phagocytes

c) Pluripotent cells lining the capillaries

d) None of the above

Correct Answer - C

Pericytes are closely associated with capillaries. It is most commonly found at the venous end of capillary bed, and also extend onto the post capillary venules. They can differentiate into smooth muscle cells during blood vessel growth and during repair after injury to a vessel. They also act as contractile cells and can affect blood flow through the capillary.

Pericytes have histologic characteristics of both smooth muscle cells and endothelial cells.

137. Most important factor determining the strength of a pulse?

a) Mean BP

b) TPR

c) Pulse pressure

d) None

Correct Answer - C

Ans. is 'c' i.e., Pulse pressure

[Ref: Textbook of cardiovascular physiology p.851]

- The Strength (or amplitude or volume) of pulse depends on the volume of blood ejected out with each beat (Stroke volume)
- and extent of elasticity (compliance) of arterial wall, both of which are determinant of pulse pressure (i.e. systolic Pressure - diastolic pressure).
- "The pulse strength indicates the strength of ventricular contraction and cardiac output, If The pulse is strong, then systolic pressure is high.
- If it is weak systolic pressure has fallen and medical intervention may be warranted."

138. Which muscarinic receptor causes dilatation of vessels?

a) M₁

b) M₂

c) M₃

d) M₄

Correct Answer - C

Ans. is 'c' i.e., M₃

(Ref: Rapid Review of Physiology p.32)

- M₃ receptors are found in vessels (endothelium).
- Activation of these receptors causes vasodilation by release of EDRF(NO).
- Unique muscarinic receptors in that their activation does not cause release of acetylcholine, rather causes release of EDRF(NO).

139. C wave in JVP indicates:

a) Atrial contraction

b) Bulging of tricuspid valve

c) Ventricle systole

d) Rapid ventricular filling

Correct Answer - B

Answer is B (Bulging of Tricuspid valve)

The 'c' wave in JVP is a positive wave produced by the bulging of the tricuspid valve into the right atrium during right ventricular isovolumetric systole and by the impact of the carotid artery adjacent to the jugular vein.

140. Angiotensin II causes all of the following, EXCEPT:

a) Stimulation of thirst

b) Aldosterone secretion

c) Increased ADH secretion

d) Vasodilation

Correct Answer - D

"Angiotensin II is one of the most potent vasoconstrictors known, being four to eight times as active as norepinephrine on a weight basis in normal individuals". It produces arteriolar constriction and a rise in systolic and diastolic blood pressure. - Ganong

It also acts on the adrenal cortex to increase secretion of aldosterone.

It facilitates the release of norepinephrine by a direct action on postganglionic sympathetic neurons, contraction of mesangial cells with a resultant decrease in GFR and a direct effect on the renal tubules to increase Na⁺ reabsorption.

It acts on the brain to increase water intake (through subfornical organ) and increase the secretion of vasopressin and ACTH.

141. True about erythropoietin ?

a) Produced by liver

b) Activity is decreased in pregnancy

c) Is a glycoprotein

d) Hypoxia decreases its secretion

Correct Answer - A:C

Ans. is 'c > a' i.e., Is a glycoprotein > Produced by liver

(Ref: Ganong 24th/e p.709)

- Erythropoietin is a glycoprotein hormone which stimulate erythrocyte production. Erythropoietin increases the number of erythropoietin sensitive committed stem cells in the bone marrow that are converted to red blood cells precursors and subsequently to mature erythrocytes.
- In the absence of erythropoietin, erythroid stem cells undergo apoptosis.

142. Affect of sympathetic stimulation on GFR ?

- a) Increased GFR with afferent arteriolar dilatation
- b) Increased GFR with efferent arteriolar constriction
- c) Decreased GFR with afferent arteriolar constriction
- d) Decreased GFR with efferent arteriolar dilatation

Correct Answer - C

Ans. is 'c' i.e., Decreased GFR with afferent arteriolar constriction

Sympathetic stimulation causes afferent arteriolar constriction with decrease in RBF and GFR.

Effect of sympathetic discharge on the renal regulation of body fluid and electrolytes

Sympathetic discharge on the kidney results in :-

- Decreased GRF.
- .. Increased reabsorption of Na^+ and water from the PCT.
- 2. Increased reabsorption of Na^+ and water from the DCT.
- 3. Thirst (due to angiotensin II production).
- 4. The overall effect is fluid and electrolyte retention due to :-
 - Decreased urinary output.
 - .. Decreased urinary Na^+ excretion.
 - 2. Increased water intake.

143. Cephalic phase of gastric secretion is mediated by

a) Neurohormones

b) Parasympathetic

c) Sympathetic

d) Gastrin

Correct Answer - B
B i.e. Parasympathetic

144. Salivary amylase is activated by:
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a) Sodium Ion

b) Chlorine Ion

c) Potassium Ion

d) Bicarbonate Ion

Correct Answer - B

Ans. B: Chlorine Ion

Salivary Amylase break large, insoluble starch molecules into soluble starches (amythrodextrin, achrodestrin and ultimately maltose.

Ptyalin acts on linear alpha (1,4) glycosidic linkages.

Optimum conditions for ptyalin

- Optimum pH - 5.6 -6.9
- Human body temperature-37 degrees Celsius
- Presence of certain anions and activators:
 - **Chlorine** and bromine - **most effective**
 - Iodine - less effective
 - Sulfate and phosphate
 - least effective

145. Transport of glucose through apical membrane of enterocytes is ?

a) Simple diffusion

b) Facilitated diffusion

c) Primary active transport

d) Secondary active transport

Correct Answer - D

Ans. is'd'i.e., Secondary active transport

(Ref: Principles of medical physiology p. 789)

- Absorption of glucose - Secondary active transport (cotransport) with Na⁺
- Absorption of lipids - Passive diffusion.
- Absorption of fructose - Facilitated Diffusion.
- Absorption of amino-acids -Secondary active transport (cotransport) with Na⁺.

146. Total fluid secreted by salivary gland, stomach, pancreas and intestine in a day

-

a) 2000 ml

b) 4000 ml

c) 6500 ml

d) 10000 ml

Correct Answer - C

Ans. is'c'i.e., 6500 ml

Ref: Ganong 23'd/e p. 441)

- Endogenous secretions in GIT is 7000ml : 1500ml from salivary glands; 2500ml from stomach; 500ml is bile; 1500ml from pancreas; and 1000ml from intestine,

147. All of the following statements are correct about stomach, EXCEPT:

a) Pylorus has more acid secreting cells

b) A high number of goblet cells are present in mucous lining

c) Chief cells secrete pepsinogen

d) Parietal cells secrete intrinsic factor

Correct Answer - A

In the cardiac and pyloric regions, these are called the cardiac and pyloric glands, respectively, secrete mucus only. Parietal cells secrete hydrochloric acid and intrinsic factor; chief cells secrete rennin and lipase in infancy and pepsinogen throughout life; and enteroendocrine cells secrete hormones and paracrine messengers that regulate digestion.

148. The most important hormone that increases gallbladder contraction after a fatty meal is:

a) Gastrin

b) Secretin

c) CCK

d) GIP

Correct Answer - C

Ans. c. CCK

Cholecystokinin (CCK)-

Stimulation of pancreatic enzyme secretion

Contraction of the gallbladder

Relaxation of the sphincter of Oddi

149. True about secretin is:

- a) Increased gallbladder contraction and HCO₃ rich pancreatic fluid
- b) Increased gastrin secretion
- c) Gastric hypermotility
- d) Increase enzyme rich pancreatic fluid

Correct Answer - A

A i.e. Increased gallbladder contraction and HCO₃ rich pancreatic fluid

150. JAK-STAT kinase receptors is associated with ?

a) T cAMP

b) IP3 - DAG

c) Ion channels

d) Nuclear transcription

Correct Answer - D

Ans. is'd'i.e., Nuclear transcription

JAK-STAT-Kinase binding receptors:

- These receptors differ in not having intracellular enzymatic action on receptor itself. Agonist binding induces interaction of these receptors with free intracellular tyrosine kinase - Janus kinase (JAK).
- jAK phosphorylates activators of transcription (STAT), which then regulate the nucleus transcription resulting in a biological response.
- Examples -+ Growth hormone, Prolactin,

151. Which of the following is an aminoneurotransmitter

a) Acetylcholine

b) GABA

c) Lignocaine

d) Epinephrine

Correct Answer - B

B i.e. GABA

152. Thyroid hormones are transported into the cells by?

a) Transthyretin

b) MTC - 8

c) Transferrin

d) Ceruloplasmin

Correct Answer - B

Ans. is 'b' i.e., MTC - 8

Ref. Textbook of clinical endocrinology 4n/e p. 414)

- Transport across the target cell membrane is affected by a number of transport proteins including monocarboxylate transporter 8 (MTC 8) in the body and organic anion transporter polypeptide 1C1 (OATP1C1) in the brain.

153. Thyroid hormone receptor which is predominantly expressed in CNS/Brain ?

a) α - 1

b) α - 2

c) β -1

d) β -2

Correct Answer - C

Ans. is 'c' i.e., β -1

There are three forms of thyroid hormone receptor that are able to bind thyroid hormone.

- TR - α 1+ Widely expressed with high expression in cardiac and skeletal muscle.
- TR- β 1-+ Predominantly expressed in brain, liver and kidney.
- TR- β 2-+ Expression primarily limited to hypothalamus & pituitary.
- Fourth isotypes TR- α 2, is also widely expressed but is unable to bind thyroid hormone.

154. Percentage of T₄ and T₃ released from thyroid gland?

a) 50% T₄ ; 50% T₃

b) 25% T₄ ; 75% T₃

c) 80% T₄ ;20% T₃

d) 1000% T₄ ;0% T₃

Correct Answer - C

Ans. is 'c' i.e., 80% T₄ ;20% T₃ ,

(Ref: Elsevier's medical laboratory science examination review p.246)

- Approximately 80% of secreted hormone is T₄ & 20% T₃ ,"

155. Which hormone is converted into active form in liver?

a) Corticosteroid

b) ACTH

c) Thyroid hormone

d) Estradiol

Correct Answer - C

Ans. is'c'i.e., Thyroid hormone

(Ref Principles of medical physiology It p.71)

- Thyroxine (T4) is converted to T, (active form) in liver (majority) and kidney.

156. The intake of Iodine in to the Thyroid Gland is an example of which of the followings means of molecular transport?

a) Primary active transport

b) Secondary active transport

c) Facilitated diffusion

d) Endocytosis

Correct Answer - B

Secondary active transport or co-transport, uses energy to transport molecules across a membrane against a concentration/electrochemical gradient. In contrast to primary active transport, there is no direct coupling of ATP; instead, the electrochemical potential difference created by pumping ions out of the cell is used.

Primary active transport, also called direct active transport, directly uses energy to transport molecules across a membrane.

Facilitated diffusion is a type of passive transport that allows substances to cross membranes with the assistance of special transport proteins.

Endocytosis is a process by which cells absorb molecules (such as proteins) by engulfing them.

157. Stimulus for prolactin release is ?

a) Dopamine

b) Hyperglycemia

c) Sleep

d) Nipple stimulation

Correct Answer - D

Ans. is'd'i.e., Nipple stimulation

[Ref: Human physiology p.383)

- Prolactin is the only pituitary hormone which is primarily under inhibitory control of hypothalamus .
- Its secretion is suppressed by dopamine (Prolactin inhibitory substance) secreted by hypothalamus.

158. Not true about pituitary gland ?

a) Lies in sella turcica

b) Corticotrophs are acidophilic

c) ADH is secreted by posterior lobe

d) Anterior lobe is developed from Rathke's pouch

Correct Answer - B

Ans. is'b'i.e., Corticotrophs are acidophilic

- Pituitary gland is situated in sella turcica.
- Anterior pituitary develops from Rathke's pouch and posterior pituitary develops from infundibular process from diencephalon.
- Corticotroph are basophils.
- ADH is secreted from posterior pituitary.

159. Growth hormone does not cause ?

a) Gigantism

b) Acromegaly

c) Diabetes mellitus

d) Hypothyroidism

Correct Answer - D

Ans. is 'd' i.e., Hypothyroidism

Physiological effects of Growth hormone

- Growth hormone has two major action, i.e., (1) Stimulation of skeletal growth, and (2) Regulation of metabolism. 3) Stimulation of skeletal growth

The effect of GH on skeletal growth is mediated by somatomedins (Insulin-like growth factors : IGF). They are synthesized mainly *in the liver*. The growth promoting action of somatomedins is helped by their insulin like actions. GH, through somatomedin (IGF-1), stimulates proliferation of chondrocytes and osteocytes resulting in increased deposition of chondroitin sulfate in cartilage and increased ossification of the newly formed cartilage.

GH deficiency in early life causes dwarfism (small height). GH excess in early life leads to *gigantism*, whereas growth hormone excess in adulthood results in acromegaly.

2) Regulation of metabolism

Protein metabolism : - GH has predominantly *anabolic effects* on skeletal and cardiac muscle where it promotes amino acid transport into cells and increase protein synthesis.

Carbohydrate and fat metabolism : - The effects of GH on carbohydrate and fat metabolism are complicated by the fact that *GH has anti-insulin effects, whereas somatomedins it produces have*

insulin like effects:-

- i) Anti-insulin effects due to direct effect of GH include **decreased peripheral utilization of glucose, increased gluconeogenesis, hyperglycemia,** and lipolysis. Due to its anti-insulin effects GH excess can cause **insulin resistant diabetes mellitus.**
- ii) Insulin like effects due to somatomedins (IGF) include **antilipolytic activity,** and other insulin like effects.

160. The primary action of leptin is:

a) To increase food intake

b) To decrease food intake

c) To increase gastric contraction

d) To increase intestinal motility

Correct Answer - B
LEPTIN

It is a 167 aa peptide secreted from adipocytes, blood leptin level reflects total body fat.
Its primary action: To decrease food intake. It in CNS decreases NPY and alpha MSH.
Leptin deficiency may lead to obesity.

Ref: Sleisenger and Fordtran's, Edition-9, Page-8.

161. Cyclic peptide chain is present in ?

a) Gramicidin A

b) Gramicidin B

c) Gramicidin D

d) Gramicidin S

Correct Answer - D

Ans. is d i.e., Gramicidin S

Gramicidin

Gramicidin is a heterogeneous mixture of three antibiotic compounds, gramicidins A, B and C, making up 80%, 6%, and 14%, respectively, all of which are obtained from the soil bacterial species *Bacillus brevis* and called collectively gramicidin D.

Gramicidin D contains linear pentadecapeptides, that is chains made up of 15 amino acid.

This is in contrast to gramicidin S, which is a cyclic peptide chain. Gramicidin is active against Gram-positive bacteria, except for the Gram-positive bacilli, and against select Gram-negative organisms, such as *Neisseria* bacteria. Its therapeutic use is limited to topical application, as it induces hemolysis in lower concentrations than bacteria cell death, so it cannot be administered internally.

162. Amylin is secreted by ?

a) α -cells of pancreas

b) β -cells of pancreas

c) δ -cells of pancreas

d) None

Correct Answer - B

Ans. is 'b' i.e., β -cells of pancreas

Pancreas is a structure which may be considered two organs in one : *Exocrine pancreas and endocrine pancreas.*

Its exocrine part secretes digestive enzymes and has been discussed in respective chapter.

The endocrine part, which secretes hormone will be discussed here.

The endocrine part forms only about 1% of weight of pancreas.

Histologically, the endocrine pancreas is formed by about a million of pancreatic islets (islets of langerhans).

The islets have four types of cells which secrete four different hormones.

i) A cells form about 25% of the islet cells and secrete glucagon.

ii) B cells form about 70% of the islet cells and secrete insulin and amylin.

iii) D cells form about 5% of the islet cells and secrete somatostatin.

iv) F cells are very few in number and secrete pancreatic polypeptide.

163. The hormone which helps in milk secretion:

September 2008, September 2010

a) Oxytocin

b) Growth hormone

c) FSH

d) Prolactin

Correct Answer - D

Ans. D: Prolactin

Prolactin causes milk secretion from the breast after estrogen and progesterone priming. Its effect on the breast involves increased action of mRNA and increased production of casein and lactalbumin. Prolactin also inhibits the effects of gonadotropins, possibly by an action at the level of the ovary.

The function of prolactin in normal males is unsettled, but excess prolactin secreted by tumors causes impotence. Remember oxytocin causes Ejection of milk.

164. Major function of dihydrotestosterone?

a) Spermatogenesis

b) Development of male external genitalia

c) Erythropoiesis

d) Development of male internal genitalia

Correct Answer - B

Ans. is 'b' i.e., Development of male external genitalia.

165. The cell bodies of orexinergic neurons are present in:

a) Locus ceruleus

b) Dorsal raphe

c) Lateral hypothalamic area

d) Hippocampus

Correct Answer - C

C i.e. Lateral Hypothalamic Area

'Orexins are synthesized in neurons located in the lateral hypothalamus'. And neurons that produce orexigenic substances NPY & AGRP have their cell bodies in arcuate nuclei and project to paraventricular nuclei of hypothalamus.

The Orexins (Hypocretins) System

Orexins were first described in 1998 as a result of signal substances used both in CNS & periphery.

In the CNS

- All the orexinergic neurons have their origin in the lateral hypothalamus from where they project wide
- They are believed to regulate:
 - Wakefulness and paradoxical sleep,
 - Appetite and food intake
 - Endocrine and Autonomic processes.

In the Periphery

- Orexins and orexin receptors have been found in the gastro-intestinal tract and in the endocrine organs.
- The prominent peripheral effects seen so far include regulation of gastro-intestinal motility and hormone production and release, especially in the adrenal gland

The orexins most often act in an excitatory manner both via putative pre-, post- and extrasynaptic mechanisms. The orexin system consists of

Orexin - A and Orexin B, two closely related neuropeptides, derived from the same gene (common precursor) by alternate splicing. OX-1 and OX-2, the two orexin receptors. At most of the projection sites both OX1 & OX2 receptors are expressed. Mutation in one of the orexin receptor genes cause narcolepsy.

166. Which does not cause relaxation of urinary bladder ?

a) Sympathetic Stimulation

b) Muscarinic receptors

c) Beta receptors

d) None of the above

Correct Answer - B

Ans. is'b'i.e., Muscarinic receptors

- Sympathetic stimulation causes relaxation of bladder (detrusor muscle) via beta-2 adrenoreceptors.
- Parasympathetic stimulation cause contraction of bladder (detrusor muscle) via muscarinic M3 receptors.

167. Histamine acts on?

a) G protein coupled receptors

b) Ligand gated ion channels

c) Enzyme linked receptors

d) Intracellular receptors

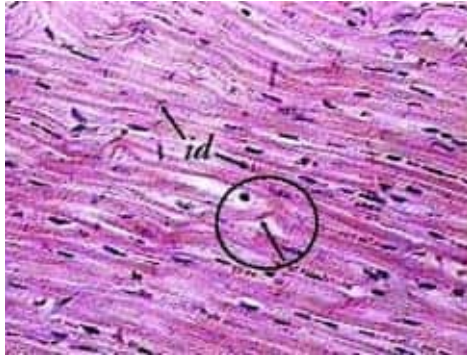
Correct Answer - A

Ans. is'a' i.e., G protein coupled receptors

Ref: Principles of medical physiology p.7911

- Histamine acts on G-protein coupled membrane receptors : -

168. Area marked by the arrow in the given figure contain all the following, except:



a) Zona occludens

b) Fascia adherens

c) Macula adherens

d) Gap junction

Correct Answer - A

Ans: A. Zona occludens

(Ref. Gray's 40/e p140; Ganong 25/e p41, 24/e p43)

- Given diagram is showing intercalated discs of cardiac muscle containing all types of cellular junctions except occluding tight junction (Zona occludens).

Intercalated disc:

- Junctional complex between neighbouring cells in cardiac muscle cells.
- Interdigitating transverse parts of intercalated disc form a fascia adherens, with numerous desmosomes.
- Gap junctions are found in longitudinal parts of disc.

Zonula occludens:

- Type of junction that tie cells together & endow tissues with strength

and stability.

- Also referred as “tight junctions”.
- Characteristically surround apical margins of cells in epithelia (intestinal mucosa, renal tubular walls & choroid plexus).

Other cells:

- Desmosome & zonula adherens help to hold cells together.
- Hemidesmosome & focal adhesions attach cells to their basal laminas.

169. Most Important hormone responsible for volume maintenance?

a) Aldosterone

b) Angiotensin

c) ADH

d) Renin

Correct Answer - C

Ans. is 'c' i.e., ADH

[Rel Principles of medical physiology p. 412; Ganong 2, {h/e p. 7041

- "Despite its effect on Na* and water reabsorption, aldosterone k a weak regulator of boily Na+ and water balance, the major
- regulator being the 'thirst-ADH' mechanism, Aldosterone k the sole regulator of external potassium balance'.
- - Principles of medical physiology

170. Shivering is controlled by:
September 2012, March 2013

a) Dorsomedial nucleus

b) Posterior hypothalamus

c) Perifornical nucleus

d) Lateral hypothalamic area

Correct Answer - B

Ans. B i.e. Posterior hypothalamus
Shivering/Shuddering

- It is a bodily function in response to **early** hypothermia in warm-blooded animals.
- When the core body temperature drops, the shivering reflex is triggered to maintain homeostasis.
- Muscle groups around the vital organs begin to shake in small movements in an attempt to create warmth by expending energy.
- Shivering can also be a response to a fever, as a person may feel cold, though their core temperature is already elevated.
- Located in the posterior hypothalamus near the wall of the third ventricle is an area called the primary motor center for shivering.
- This area is normally inhibited by signals from the heat center in the anterior hypothalamic-preoptic area but is excited by cold signals from the skin and spinal cord.

171. Erythropoietin production is inhibited by ?

a) Estrogen

b) Progesterone

c) Thyroxine

d) Testosterone

Correct Answer - A

Ans. is 'a' i.e., Estrogen

[Ref: Principles and practice of maternal health]

- The most important stimulus for erythropoietin secretion is hypoxia.
- Other stimulus that can increase its secretion are cobalt salts, androgens, alkalosis due to high altitude, and catecholamines via beta-adrenergic mechanism.

172. Which of the following enzyme is not a protein ?

a) Carboxypeptidase

b) Amylase

c) Ribozyme

d) DNAase

Correct Answer - C

Ans. is 'c' i.e., Ribozyme [Ref RC Gupta 2ndie p. 65]

- Enzymes are natural thermolabile, biological catalysts. They are protein or polypeptide in nature, except for a few, i.e., ribozyme is not a protein but a RNA molecule with catalytic activity. enzymes are secreted by living cells.

173. Alcohol dehydrogenase is a/an -

a) Transferase

b) Hydrolase

c) Ligase

d) Oxidoreductase

Correct Answer - D

Ans. is 'd' i.e., Oxidoreductase [Ref Essentials of biochemistry p. 786]

- Alcohol dehydrogenase is a NAD-linked *dehydrogenase* (*oxidoreductase*), It catalyzes the oxidation of ethanol to acetaldehyde.

174. Regan enzyme is an isoenzyme of ?

a) LDH

b) Creatinine kinase

c) Acid phosphatase

d) Alkaline phosphatase

Correct Answer - D

Ans. is 'd' i.e., Alkaline phosphatase

- Regan enzyme (isoenzyme) is the isoenzyme of alkaline phosphatase.
- It arises from placenta known as carcinoplacental enzyme.
- It is elevated in about 15% of cases of carcinoma of lung, liver and gut.

175. Carbonic anhydrase is which type of enzyme ?

a) Coenzyme

b) Metalloenzyme

c) Serine protease

d) Endopeptidase

Correct Answer - B

Ans. is 'b' i.e., Metalloenzyme [Ref: *Essentials of biochemistry* p. 785]

- The active site of carbonic anhydrase contains a zinc ion, they are therefore classified as metalloenzymes.

176. Clinically enzymes are classified as functional plasma enzymes and non functional plasma enzymes. Which among the following is an example for functional enzyme?

a) ALT

b) Lipoprotein lipase

c) Prothrombin

d) Amylase

Correct Answer - B

Functional enzymes and non-functional enzymes:

- Functional plasma enzymes or specific enzymes have their substrates in the plasma itself.
- These enzymes are synthesized in the liver and actively secreted into plasma.
- Examples: Enzymes of blood coagulation, **lipoprotein lipase, pseudocholesterase.**
- **Nonfunctional enzymes or nonspecific enzymes** are coming out from cells of various tissues due to normal wear and tear.
- Their normal levels in blood are very low; but are drastically increased during cell death or disease.
- Therefore assays of these enzymes are very useful in diagnosis of diseases.
- Examples: **Alkaline phosphatase, acid phosphatase, lipase, amylase.**

Ref: Textbook of Biochemistry by DM Vasudevan, 5th edition, Page 53.

177. Maximum protein to lipid ratio is seen in ?

a) Inner mitochondrial membrane

b) Outer mitochondrial membrane

c) Sarcoplasmic reticulum

d) Myelin sheath membrane

Correct Answer - A

Ans. is 'a' i.e., Inner mitochondrial membrane [Ref Principles of medical physiology p. 15]

- Mitochondrial inner membrane has maximum protein contents with highest protein to lipid ratio and cell membrane in myelin has lowest protein to lipid ratio.

Protein to lipid ratio in decreasing order of frequency is as follows:

- Inner mitochondrial membrane (3.2) : Maximum > Sarcoplasmic reticulum (2.0) > outer mitochondrial membrane (1.1) = Human erythrocyte cell membrane (1.1) > Myelin sheath cell (plasma) membrane (0.23) : Minimum.
- In all the membranes, proteins content is higher than lipid, with only one major exception of myelin which has higher lipid content than protein to provide good insulation.

178. Both lipid and protein contents are equal in membrane of which organelle -

a) Sarcoplasmic reticulum

b) Mitochondria

c) Myeline Sheath

d) Golgi apparatus

Correct Answer - B

Ans. is 'b' i.e., Mitochondria [Ref Harper 28th/e p. 407]

Outer mitochondrial membrane has protein to lipid ratio of 1.1.

179. In ETC, cyanide inhibits ?

a) Complex I

b) Cytochrome C oxidase

c) Complex IV

d) Complex III

Correct Answer - B:C

Ans. is 'b' i.e., Cytochrome C oxidase & 'c' i.e., Complex IV

[Ref Harper 29th/e p. 127, 28th/e p. 108, 109; Vasudevan 6th le p. 234]

- Complex I :- Barbiturates (amobarbital), piercidin A, rotenone, chlorpromazine, guanithidine.
- Complex II :- Carboxin, TTFA, malonate.
- Complex III:- Dimercaprol, BAL, actinomycin A, Naphthylquinone.
- Complex IV (cytochrome c oxidase) :- Carbon monoxide (CO), cyanide (CN⁻), H₂S, azide (N⁻)

180. FADH₂ enters at which complex in ETC ?

a) I

b) II

c) III

d) IV

Correct Answer - B

Ans. is 'b' i.e., II [Ref Harper 29^m/e p. 125-126; Vasudevan 5th/e p. 231]

FADH, enters at complex II, therefore, generates only 1-5 molecules of ATP (1 ATP production is bypassed at complex I).

181. Physiological uncoupler is ?

a) Thyroxine

b) Free fatty acids

c) Thermogenin

d) All of the above

Correct Answer - D
Ans. is 'd' i.e., All of the above

182. Glycogen phosphorylase catalyzes the first step in glycogen degradation.
Glycogen phosphorylase requires:

a) Pyridoxine

b) Vit. B

c) Nickel

d) Cobalt

Correct Answer - A
Pyridoxine (Vitamin B6):

The active form of pyridoxine is pyridoxal phosphate.

Functions:

- Transamination reactions
- Alanine synthetase (heme synthesis)
- Decarboxylation of histidine to histamine
- Deamination of serine to pyruvate
- Glycogen phosphorylase action
- Conversion of tryptophan to niacin
- Synthesis of several neurotransmitters

One half of the total pyridoxine is bound to muscle glycogen phosphorylase.

Ref: Elsevier's Integrated Review Biochemistry By John W. Pelley, 2011, Page 175.

183. True about gluconeogenesis ?

a) Occurs mainly in muscle

b) It is reverse of glycolysis

c) Alanine & lactate both can serve as substrate

d) Glycerol is not a substrate

Correct Answer - C

Ans. is 'c' i.e., Alanine & lactate both can serve as substrate

- Synthesis of glucose from noncarbohydrate precursors is called gluconeogenesis i.e., synthesis of new glucose.
- The major noncarbohydrate precursors (substrate) for gluconeogenesis are lactate, pyruvate, glycerol, glucogenic amino acids, propionate and intermediates of the citric acid cycle.
- All amino acids, except for leucine and lysine, are substrate for gluconeogenesis.
- Alanine is the most important gluconeogenic amino acid.
- Gluconeogenesis occurs mainly in the liver and to a lesser extent in renal cortex.
- Some gluconeogenesis can also occur in small intestine, but it is not significant.
- Some of the reactions of gluconeogenesis occurs in the mitochondria but most occur in cytosol.
- Gluconeogenesis involves glycolysis, the citric acid cycle plus some special reactions.
- Glycolysis and gluconeogenesis share the same pathway but in opposite direction.
- Seven reactions of glycolysis are reversible and therefore are used with same enzyme in the synthesis of glucose by gluconeogenesis.
- However, three of the reactions of glycolysis are irreversible and

must be circumvented by four special reactions which are unique to gluconeogenesis and catalyzed by : (1) Pyruvate carboxylase, (ii) Phosphoenolpyruvate carboxykinase, (iii) Fructose-1,6-bisphosphatase, (iv) Glucose-6-phosphatase.

- These four enzymes are the key enzymes of gluconeogenesis (or gluconeogenesis enzymes).
- Among these four, pyruvate carboxylase is a mitochondrial enzyme and other three are cytoplasmic enzymes.

184. Pyruvate kinase is inhibited by ?

a) Insulin

b) Fructose -1,6 bisphosphate

c) ATP

d) All of the above

Correct Answer - C

Ans. is 'c' i.e., ATP

- Pyruvate Kinase enzyme catalyzes conversion of PEP to pyruvate.
- Pyruvate kinase is an inducible enzyme that increases in concentration with high insulin level and decreases with glucagon.
- It is activated by fructose-1,6 bisphosphate and inactivated by ATP and alanine.

185. Which is not a common enzyme for glycolysis and gluconeogenesis?

a) Aldolase

b) Glucose-6-phosphatase

c) Phosphoglycerate mutase

d) Phosphoglycerate kinase

Correct Answer - B

Seven of the reactions of glycolysis are reversible and are used in the synthesis of glucose by gluconeogenesis.

Thus, seven enzymes are common to both glycolysis and gluconeogenesis :

- (i) Phosphohexose isomerase;
- (ii) Aldolase;
- (iii) Phosphotriose isomerase,
- (iv) Glyceraldehyde 3-phosphate dehydrogenase;
- (v) Phosphoglycerate kinase;
- (vi) Phosphoglycerate mutase;
- (vii) Enolase.

Three reactions of glycolysis are irreversible which are circumvented in gluconeogenesis by four reactions. So, enzymes at these steps are different in glycolysis and gluconeogenesis.

186. Irreversible step in citric acid cycle is catalyzed by ?

a) Aconitase

b) Succinate thiokinase

c) a-ketoglutarate dehydrogenase

d) Isocitrate dehydrogenase

Correct Answer - C

Ans. is 'c' i.e., a-ketoglutarate dehydrogenase [*Ref Harper 29th/e p. 165*]

There are two irreversible steps :

- .. oxaloacetate to citrate catalysed by citrate (synthase), and
- ?. a-ketoglutarate to succinyl CoA, catalyzed by a-ketoglutarate dehydrogenase.

187. Structure of triglyceride is ?

a) 2 molecules of FA + Glycerol

b) 3 molecules of FA + Glycerol

c) 2 molecules of FA + 2, 3 DPG

d) 3 molecules of FA + 2, 3 DPG

Correct Answer - B

Ans. is 'b' i.e., 3 molecules of FA + Glycerol

- Triglycerides (or Triacylglycerols) are esters of the alcohol glycerol and fatty acid. Triglyceride contains one molecule of glycerol and 3 molecules of fatty acids.
- Triglycerides are synthesized in many tissues, e.g. liver, kidneys, lactating mammary glands, intestinal mucosa, adipose tissue, muscles etc.

188. Hydrogenation of fatty acid is ?

a) Hydrolysis by Alkali

b) Auto-oxidation of PUFA

c) Addition of hydrogen to unsaturated fatty acid

d) Addition of hydrogen to saturated fatty acid

Correct Answer - C

Ans. is 'c' i.e., Addition of hydrogen to unsaturated fatty acid

[Ref Harper 29th le p. 143; Lippincott's 4th/e p. 363-364]

- Addition of hydrogen atoms to unsaturated fatty acid refers to hydrogenation. It reduces the number of double bonds in the unsaturated fats.
- Hydrogenation of unsaturated fats in the presence of a catalyst (nickel) is known as "hardening", because it converts liquid vegetable oils into solid fats e.g. margarine, vegetable ghee, etc.

189. Which of the following reaction is due to lipid peroxidation ?

a) Saponification

b) Rancidity

c) Hydrogenation

d) Soap formation

Correct Answer - B

Ans. is 'b' i.e., Rancidity [Ref Chatterjee 8th le p. 54]

- Peroxidation (auto-oxidation) of lipids exposed to oxygen is responsible not only for deterioration of foods (rancidity) but also for damage to tissues *in vivo*.
- Lipid peroxidation is a chain of reaction generating free radicals that initiate further peroxidation.

190. End point of fatty acid synthesis is formation of -

a) Palmitic acid

b) Stearic acid

c) Oleic acid

d) Linoleic acid

Correct Answer - A

Ans. is 'a' i.e., Palmitic acid

- Palmitate (Palmitic acid) is formed after a total of seven cycles in fatty acid synthesis.
- Fatty acid synthesis takes place in cytosol.
- Acetyl-CoA is the immediate substrate for lipogenesis and synthesis always ends in formation of palmitic acid.

191. True regarding familial hypercholesterolemia is:

- a) Deficient VLDL receptors
- b) Deficient HDL receptors
- c) HMG CoA reductase deficiency
- d) Deficient LDL receptors

Correct Answer - D

Familial hypercholesterolemia have defective LDL receptors
Many patients with familial hypercholesterolemia have mutations in the LDLR gene that encodes the LDL receptor protein, which normally removes LDL from the circulation, or apolipoprotein B (ApoB), which is the part of LDL that binds with the receptor.

Patients who have one abnormal copy (are heterozygous) of the LDLR gene may have premature cardiovascular disease at the age of 30 to 40.

Having two abnormal copies (being homozygous) may cause severe cardiovascular disease in childhood.

Patients may have xanthelasma palpebrarum, yellowish patches consisting of cholesterol deposits above the eyelids.

192. Limiting amino acid in legumes ?

a) Lysine

b) Methionine

c) Alanine

d) Tryptophan

Correct Answer - B

Ans. is b, i.e., Methionine

Food item limiting amino acid

Legumes Methionine (also leucine & threonine)

Cereals Threonine (also lysine)

Pulses Methionine (also cysteine)

Maize Tryptophan (also lysine)

193. Methionine is synthesized from ?

a) Cysteine

b) Glycine

c) Histidine

d) Arginine

Correct Answer - A

Ans. is 'a' i.e., Cysteine [Ref Essentials of biochemistry p. 332; Plant Biochemistry p. 74]

- Methionine is a sulphur containing amino acid and is synthesized from cysteine.
- The precursor is homoserine, a product of reduction of aspartic acid.
- Homoserine is phosphorylated (by ATP) and the phosphate is then displaced by sulfhydryl group of cysteine to form cystathionine.
- Cleavage of alanine group from cystathionine yields homocysteine, which is methylated to yield methionine.

194. In human body, methionine is synthesized from ?

a) Cysteine

b) Proline

c) Threonine

d) None

Correct Answer - D

Ans. is 'd' i.e., None *[Ref Read above explanation]*

- Methionine is an essential amino acid, cannot be synthesized in body.

195. Most important amino acid which acts as methyl group donor -

a) Cysteine

b) Methionine

c) Tyrosine

d) Tryptophan

Correct Answer - B

Ans. is 'b' i.e., Methionine

- Methionine is activated into S-adenosylmethionine, which then transfers its methyl group to an acceptor.
- **Thus methionine acts as methyl donor in transmethylation reactions.**
- Some of the important transmethylation reactions are?
- Norepinephrine - Epinephrine
- Phosphatidylethanolamine - Phosphatidylcholine
- Guanidoacetate → Creatine
- Ethanolamine → Choline
- Acetyl serotonin - Serotonin
- Nucleotides methylated nucleotides

196. Amino-acid substitute for tryptophan without altering proteins characteristics ?

a) Tyrosine

b) Phenylalanine

c) Methionine

d) Alanine

Correct Answer - B

Ans. is `b' i.e., Phenylalanine [Ref Rawn biochemistry p. 47]

- Tryptophan is an aromatic amino acid, thus it can only be replaced with other aromatic amino acid.
- **Other two aromatic amino acids are :?**
- Phenylalanine
- Tyrosine
- Among these two, phenylalanine can substitute tryptophan but not tyrosine because
- Phenylalanine and tryptophan both are hydrophobic (non-polar).
- Whereas, tyrosine is hydrophilic (Polar).
- "The only other aromatic residue that can substitute for tryptophan is phenylalanine.
- Tyrosine cannot substitute since it has hydrophilic property"

197. Semiessential amino acid is -

a) Histidine

b) Alanine

c) Leucine

d) Lysine

Correct Answer - A

Ans. is 'a' i.e., Histidine [Ref Rawl biochemistry p. 47]

- Arginine and histidine are semi - essential amino acids.

198. Serine is produced in human from -

a) Glycine

b) Methionine

c) Homocysteine

d) Homoserine

Correct Answer - A

Ans. is 'a' i.e., Glycine

- Serine is converted to glycine and after that its metabolism is similar to glycine. Conversion of serine to glycine is reversible reaction; therefore, serine is synthesized also from glycine.

199. Which amino acid spares the use of methionine -

a) Cysteine

b) Glycine

c) Histidine

d) Arginine

Correct Answer - A

Ans. is 'a' i.e., Cysteine [*Ref Essentials of biochemistry p. 332; Plant Biochemistry p. 74*]

"Adequate dietary source of cysteine 'spares' methionine".

- Methionine is an essential amino acid.
- Methionine is required for synthesis of cysteine (thus cysteine is non-essential amino acid)
- Thus, cysteine can spare the requirement of methionine in diet.

200. Which of the following amino acid contains free sulphhydryl group

a) Cysteine

b) Methionine

c) Serine

d) Glycine

Correct Answer - A

Ans. is 'a' i.e., Cysteine [Ref Mark's Basic Medical Biochemistry p. 76]

There are two sulfur containing amino acids :?

- Cysteine
- Methionine
- The side chain of cysteine contains sulphhydryl group that has a pKa of approximately 8.4 for dissociation of its hydrogen sulphhydryl groups of two cysteine molecules can form covalent disulfide bond to form cystine.
- Methionine although it contains sulfur group, does not contain sulphhydryl group and cannot form disulfide bond.

201. True about carbamoyl phosphate synthase ?

a) Mitochondria] enzyme

b) Cytosolic enzyme

c) Catalyzes condensation reaction

d) All are true

Correct Answer - D

Ans. is 'd' i.e., All are true [Ref: Harper 29th/e p. 277-278]

- There are two types of carbamoyl phosphate synthase (CPS) :?
- CPS - I:- catalyzes the condensation of CO₂ and ammonia to form carbomoyl phosphate in urea cycle. It is a mitochondrial enzyme.
- CPS - II:- It is a cytosolic enzyme and participates in pyrimidine synthesis.

202. Carbamoyl group of carbamoyl phosphate is derived from ?

a) Ammonia

b) Citrulline

c) Ornithine

d) Arginosuccinate

Correct Answer - A

Ans. is 'a' i.e., Ammonia [Ref A guide to Biochemistry p. 203]

- **1st** reaction of urea cycle is synthesis of carbamoyl phosphate by condensation of ammonia (NH_4^+) and CO_2 .
- The carbamoyl group of carbomoyl phosphate is derived from NH_4^+ and a bicarbonate ion.
- The reaction is energetically demanding (two ATP) and is catalyzed by carbomoyl phosphate synthase L
- CPS-I is allosterically activated by N-acetyl glutamate.

203. Urea cycle is linked to TCA cycle by ?

a) Arginine

b) Ornithine

c) Oxaloacetate

d) Fumarate

Correct Answer - D

Ans. is 'd' i.e., Fumarate [Ref Harper 29thie p. 276-277]

- Fumarate is released during urea cycle, which is an intermediate of Krebs's cycle, thus linking the two.

204. Enzyme deficient in maple syrup urine disease?

a) α -ketoacid decarboxylase

b) Transaminase

c) Isomerase

d) Mutase

Correct Answer - A

Maple syrup urine disease (MSUD) or branched chain ketoaciduria

- It is an inborn error of metabolism of branched chain amino acids *valine*, *leucine* and *isoleucine*.
- It is due to deficiency of enzyme that catalyzes the second reaction in these amino acids metabolism i.e. **branched chain- α keto acid dehydrogenase** which catalyses decarboxylation of branched chain amino acids.
- As a result, the branched chain amino acids, leucine, isoleucine and valine, and their α -keto acids accumulate in blood, urine and CSF.
- There is characteristic maple syrup odor to the urine.
In maple syrup urine disease there is excretion of branched chain amino acids (*isoleucine*, *leucine*, *valine*) and their keto acids (α -keto β -methylvalerate, α -ketoisocaproate, α -ketoisovalerate) in urine.

205. Conversion of phenylalanine to tyrosine is hampered in ?

a) Phenylketonuria

b) Alkaptonuria

c) Maple syrup disease

d) Tyrosinemia

Correct Answer - A

Ans. is 'a' i.e., Phenylketonuria

- Phenylketonuria is characterized by inability of oxidation of phenylalanine into tyrosine.
- It is an inborn metabolism of phenylalanine, in which there is inability of oxidation of phenylalanine into tyrosine.
- There is defective function of phenylalanine hydroxylase, which may be due to : ?
- Classical phenylketonuria (hyperphenylalanemia type I) - Deficiency of phenylalanine hydroxylase.
- Atypical phenylketonuria (Hyperphenylalanemia type II and III) → Defect in dihydrobiopterin reductase.
- Hyperphenylalanemia type - IV and V - Defect in dihydrobiopterin synthesis.

206. Hartrup disease causes deficiency of ?

a) Nicotinamide

b) Thiamine

c) Riboflavin

d) Biotin

Correct Answer - A

Ans. is 'a' i.e., Nicotinamide [Ref Harper 29th /e p. 292] Hartnup disease

- It is an inherited disorder in the metabolism of tryptophan.
- It is due to defective transport of tryptophan and other neutral amino acids in the intestine and kidney.
- This results in deficiency of tryptophan leading to decreased synthesis of niacin and serotonin.
- Thus there are pellagra (niacin deficiency), neurological symptoms (serotonin deficiency) and amino aciduria due to defective transport of amino acids in kidney.
- Note : Niacin is a general name for the nicotinic acid and nicotinamide, either of which may act as a source of vitamin in the diet

207. HHH syndrome is due to defect in ?

a) Tryptophan metabolism

b) Histidine transporter

c) Branched chain AA metabolism

d) Ornithine transporter

Correct Answer - D

Ans. is 'd' i.e., Ornithine transporter [Ref Textbook of clinical paediatrics p. 496]

- Hyperornithinaemia, hyperammonaemia, homocitrullinuria (HHH) syndrome is an autosomal recessive disorder of ornithine transport caused by mutations in gene SLC 25A15 encoding the ornithine transporter protein (ORNT1).
- There is defective activity of the ornithine transporter across the mitochondrial membrane, which causes a functional deficiency of two mitochondrial enzymes:
- Ornithine transcarbamoylase : Which catalyses the condensation of ornithine and carbamoylphosphate to citrulline.
- Ornithine-8-aminotransferase (OAT) : Which metabolizes the ornithine to Δ^1 -pyrroline-5-carboxylate and ultimately glutamate and proline.
- Ornithine accumulates in the cytoplasm and its deficiency in mitochondria causes a secondary urea cycle disorder and hyperammonemia.

Carbamoylphosphate accumulates and undergoes alternate metabolism to form :

1. Homocitrulline - Excreted in urine
2. Orotic acid
3. Plasma

208. HHH syndrome is due to deficiency of which enzyme?

a) Arginase

b) Arginosuccinase

c) Ornithine transcarbomylase

d) None

Correct Answer - C

Ans. is. c' i.e., Ornithine transcarbomylase [Ref: Textbook of clinical pediatrics p. 496]

- Actually there is no molecular deficiency of any enzyme but functional deficiency.
- In HHH syndrome there is deficiency/defect in Ornithine transporter across the mitochondrial membrane which causes functional deficiency of :?
 - .. Ornithine transcarbomylase
 - ?. Ornithine -8- aminotrans ferase (OAT)

209. Orotic aciduria like picture can be produced by deficiency of -

a) Vitamin B12

b) Essential fatty acids

c) Riboflavin

d) None of the above

Correct Answer - A

Deficiency of folate or vitamin B12 can cause hematological changes similar to hereditaty ototic aciduria"

210. First protein to be broken down for energy in prolonged starvation is from?

a) Skeletal muscle

b) Smooth musclesc

c) Kidney

d) Liver

Correct Answer - A

Ans. is 'a' i.e., Skeletal muscle [Ref Satyanarayan le p. 386]

- Proteins are degraded in Skeletal muscles to liberate amino acids which are utilized for gluconeogenesis.

211. Positive nitrogen balance is seen in ?

a) Trauma

b) Burns

c) Pregnancy

d) Stress

Correct Answer - C

Ans. is 'c' i.e., Pregnancy [Ref Essentials of biochemistry p. 224]

- The normal healthy adult is in "nitrogen balance or equilibrium".
- That is the amount of nitrogen ingested in the diet over a given period of time is equals that excreted in the urine and feces as excretory products.
- Positive nitrogen balance means amount of nitrogen taken in and retained exceeds that excreted.

Positive nitrogen balance is seen in ?

1. Pregnancy
2. Recovery phase of trauma/surgery
3. Infancy and childhood

Negative nitrogen balance is seen in :

1. Starvation
 2. Infection
 3. Burns
 4. Acute stress
 5. Immediately after trauma/surgery
- Hormones causing positive nitrogen balance → GH, insulin, testosterone
 - Hormone causing negative nitrogen balance → Glucocorticoids

212. Insulin causes decrease in activity of which enzyme?

a) PFK-1

b) Glucokinase

c) Pyruvate Carboxylase

d) Acetyl CoA Carboxylase

Correct Answer - C

Ans. is 'c' i.e., Pyruvate carboxylase [Ref Dinesh purl 3^{ra} le p. 414]

→ **Enzymes / Pathways activated by insulin**

1. Glycolysis : PFK-1, Pyruvate kinase, glucokinase, PDH.
2. Glycogenesis : Glycogen synthase.
3. Lipogenesis : Acetyl-Co-carboxylase, Fatty acid synthase.
4. Cholesterol synthesis : HMG - CoA reductase.
5. Triglyceride synthesis : Acyl - CoA glycerol-3-P transferase, glycerol kinase.
6. Lipoprotein degradation : Lipoprotein lipase.

→ **Enzymes / Pathways inhibited by insulin :**

1. Gluconeogenesis : Pyruvate carboxylase, PEP carboxykinase, fructose-1, 6-bisphosphatase, glucose-6 phosphatase
2. Glycogenolysis : Glycogen phosphorylase
3. Lipolysis : Hormone sensitive lipase.

213. Most important vitamin which prevent autooxidation of PUFA in membrane ?

a) Tocopherol

b) Ascorbate

c) Retinol

d) Calcitriol

Correct Answer - A

Ans. is 'a' i.e., Tocopherol [Ref : Harper 25⁰/e p. 532, 541, 543]

- Amongst given options, vitamin A, E and C are anti-oxidants.
- However, Vitamin E (tocopherol) is the most important antioxidant in the body, acting in the lipid phase of membranes protecting against the effects of free radicals.
- The main function of vitamin E is as a chain-breaking, free radical-trapping antioxidant in cell membranes and plasma lipoproteins by reacting with lipid peroxide radicals formed by peroxidation of polyunsaturated fatty acid.

214. Lipid soluble plasma membrane associated antioxidant?

a) Ubiquitin

b) Vitamin E

c) Vitamin C

d) Glutathione

Correct Answer - B

Ans. is 'b' i.e., Vitamin E

"Alpha-tocopherol is the only lipid soluble, chainbreaking antioxidant present in biological membranes".

215. Test to diagnose thiamine deficiency ?

a) RBC transketolase

b) FIGLU excretion

c) Methyl-malonic acid in urine

d) Histidine load test

Correct Answer - A

Ans. is 'a' i.e., RBC transketolase [Ref Harper 29th/e p. 534]

- Thiamine diphosphate is also the coenzyme for transketolase, in the pentose phosphate pathway.
- Therefore, thiamine nutritional status is best assessed by erythrocyte (preferred) or whole blood transketolase activity..

216. Single base pair substitution is related to which of the following?

a) RFLP

b) PCR

c) FISH

d) Southern blot

Correct Answer - A

The term RFLP (Restriction Fragment Length Polymorphisms) refers to single base pair substitutions in germ line DNA of different individuals that either destroys or creates new recognition site for a given restriction enzyme.

PCR is used to amplify a specific region of a DNA strand (the DNA target).

FISH is a technique used to identify the presence of specific chromosomes or chromosomal regions through hybridization (attachment) of fluorescently-labeled DNA probes to denatured chromosomal DNA.

Southern blotting combines transfer of electrophoresis-separated DNA fragments to a filter membrane and subsequent fragment detection by probe hybridization.

217. True regarding ubiquitin is:

a) Product of purine metabolism

b) Protein destructions

c) Present in prokaryotes

d) Protein synthesis

Correct Answer - B

There are two major pathways of protein degradation in eukaryotes. One involves lysosomal proteases and does not require ATP. The other way involves ubiquitin and is ATP-dependent. Ubiquitin is a small, highly-conserved regulatory protein that is ubiquitously expressed in eukaryotes.

Ubiquitination (or ubiquitylation) refers to the post-translational modification of a protein by the covalent attachment (via an isopeptide bond) of one or more ubiquitin monomers. The most prominent function of ubiquitin is labeling proteins for proteasomal degradation.

218. Circular DNA, found in eukaryote cells are found in all, EXCEPT:

a) Nuclear

b) Plasmid

c) Mitochondrial

d) Yeast

Correct Answer - A

Circular DNA are occasionally found in eukaryotic cells, including plasmids such as the 2 μ circle of yeast. Mitochondria and chloroplasts also contain their own genomes, or replicons, which are circular molecules of self-replicating DNA.

219. During destruction in proteosomes, proteins are bound to ubiquitin by ?

a) Covalent bond

b) Hydrogen bond

c) Hydrophobic interactions

d) Van-der Wall's forces

Correct Answer - A

Ans. is 'a' i.e., Covalent bond [Ref Essentials in Biochemistry p. 717]

- Defective protein is first covalently attached to ubiquitin.
- Covalent bond is formed between glycine (α-carboxyl group) of ubiquitin and lysine (amino group) of target protein.
- Ubiquitinated protein is then degraded in proteosomes by ATP dependent (energy dependent) mechanism.
- Proteins are degraded by proteolytic enzymes which is energy independent (non-energy dependent).

220. In lac operon, transcription is inhibited by binding into ?

a) Promotor site

b) Operator site

c) CAP site

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Operator site

- **Repressor binds to this site and blocks transcription.**

221. All are circular DNA EXCEPT:

a) Nuclear

b) Plasmid

c) Mitochondrial

d) Yeast

Correct Answer - A

Nuclear REF: Jawetz's 24th edition chapter 7

The Eukaryotic Genome

- The genome is the totality of genetic information in an organism. Almost all of the eukaryotic genome is carried on *two or more linear chromosomes* separated from the cytoplasm within the membrane of the nucleus.
- Eukaryotic cells *contain mitochondria* and, in some cases, chloroplasts. Within each of these organelles is a *circular molecule* of DNA that contains a few genes whose function relates to that particular organelle. Most genes associated with organelle function, however, are carried on eukaryotic chromosomes.
- *Many types of yeast* contain an additional genetic element, an independently replicating *2-m circle* containing about 6.3 kbp of DNA. *Such small circles of DNA, termed plasmids*, are frequently encountered in the genetics of prokaryotes. The small size of plasmids renders them amenable to genetic manipulation and, after their alteration, may allow their introduction into cells. Therefore, plasmids are frequently called upon in genetic engineering.

222. True regarding collagen synthesis is all except ?

a) Synthesized in ribosomes as procollagen

b) Hydroxylation of proline occurs in Golgi apparatus

c) Hydroxylation of lysine occurs in ER

d) Triple helix assembly occurs in ER

Correct Answer - B

Ans. is 'b' i.e., Hydroxylation of proline occurs in Golgi apparatus

223. Which of the following elements is not required for hydroxylation of proline in collagen synthesis?

a) Vit C

b) O₂

c) Dioxygenases

d) Pyridoxal phosphate

Correct Answer - D

Fe²⁺ and α-ketoglutarate are also needed in hydroxylation of proline for collagen synthesis.

224. Which of the following is the major proteoglycan of synovial fluid ?

a) Chondroitin sulfate

b) Dermatan sulfate

c) Heparan sulfate

d) Hyaluronic acid

Correct Answer - D

Ans. is 'd' i.e., Hyaluronic acid

	Distribution
Hyaluronic acid	Synovial fluid (provides viscosity), vitreous humor, loose connective tissue)
Chondroitin sulfate	Cartilage, bone, tendon, ligament, cornea
Dermatan sulfate	Pliability of skin, and heart valves, wide distribution
Keratan sulfate	Horny structures like hair, nails, claws, horn, hoofs Also present in cornea
Heparin	Mast cells
Heparan sulfate	Skin fibroblast, aortic wall

225. Type of inheritance in MELAS -

a) AD

b) AR

c) Mitochondrial

d) X-linked

Correct Answer - C

Ans. is 'c' i.e., Mitochondrial

o MELAS (mitochondria) encephalopathy with lactic acidosis an stroke) is a mitochondrial disease.

226. Enzyme needed in leucocytes for production of hypochlorite ?

a) NADPH oxidase

b) Myeloperoxidase

c) Catalase

d) Superoxide dismutase

Correct Answer - B

Ans. is 'b' i.e., Myeloperoxidase [Ref Robbins 4th/e p. 47-48]

- Enzyme required to generate superoxide anion (O_2^-) NADPH oxidase
- Enzyme required to generate Hypochlorite ($HOCl$) → Myeloperoxidase
- NADPH oxidase is also called respiratory burst (oxygen burst) oxidase.

227. Glycopeptide bond is cleaved by ?

a) Endopeptidase

b) Exopeptidase

c) Glycosidase

d) Trypsin

Correct Answer - C

Ans. is 'c' i.e., Glycosidase [Ref Essentials of biochemistry p. 132]

- glycopeptide bonds can be hydrolysed by glycosidases.
- "A number of endoglycosidases and glycosidases have been effectively employed to split N- and O- glycosidic bonds in structural investigations"

228. 17-a hydroxylase is not involved in the pathway for synthesis of ?

a) Cortisol

b) Aldosterone

c) Androsteredione

d) Testosterone

Correct Answer - B

Ans. is 'b' i.e., Aldosterone [Ref: Dinesh Puri .3rd le p. 626]

229. Example of physiological atrophy is

a) Senile atrophy

b) Disuse atrophy

c) Post pregnancy uterine atrophy

d) All of the above

Correct Answer - C

Answer- C. Post pregnancy uterine atrophy

Atrophy is reduced size of an organ or tissue resulting from a decrease in cell size and number.

Atrophy may be

1. Physiological
 - atrophy of notochord and thyroglossal duct during fetal development
 - Decrease in uterus size after delivery
2. Pathological

230. True about metaplasia is

a) Loss of polarity

b) Nucleus is smaller in size

c) It is a reversible change

d) Immature cells

Correct Answer - C

Answer- C. It is a reversible change

Metaplasia is an adaptive change in which one adult (mature) cell type is replaced by another adult (mature) cell.

It is reversible.

- There is no pleomorphism, and cell polarity as well as cell & nuclear size are not altered.

231. Lipofuscin is associated with

a) Brown atrophy

b) White atrophy

c) Red atrophy

d) Black atrophy

Correct Answer - A

Answer- A. Brown atrophy

- Deposition of lipofuscin in the heart is referred as brown atrophy.

232. What is the common change in cell death associated with both apoptosis and necrosis ?

a) Cell shrinkage

b) Bleb formation

c) Chromatin condensation

d) Presence of inflammation

Correct Answer - C

Answer- C. Chromatin condensation

- Both form of cell death, finally lead to nuclear changes i.e. chromatin condensation (pyknosis).

233. Fibrinoid necrosis is seen in

a) Diabetes

b) Rheumatoid arthritis

c) Pancreatitis

d) Alzheimer's disease

Correct Answer - B

Answer- B. Rheumatoid arthritis

- Diseases causing fibrinoid necrosis are malignant hypertension (most common), PAN, SLE, SABA, acute rheumatic fever (Aschoffs nodule), RA, HSP, HBV.

234. Which is pluripotent stem cell ?

a) Embryonic stem cell

b) Tissue stem cell

c) Adult stem cell

d) Hematopoietic stem cell

Correct Answer - A

Answer- A. Embryonic stem cell

Stem cells

1. **Embryonic stem cells** : These are pluripotent cells

2. Adult stem cells

235. Which Vitamin deficiency results in poor wound healing?

a) K

b) C

c) D

d) E

Correct Answer - B

Answer- B. C

- Vitamin C is important to the synthesis of collagen and the growth of new blood vessels to replace damaged tissue. This element also has a strong antioxidizing effect that enhances the immune system and, in effect, protects against wound infection.

236. Which of the following is not a cachectic gene?

a) APEH

b) MC4R

c) Smad7

d) Smad 3

Correct Answer - C

Answer- C. Smad7

Smad 7 gene delivery prevents cachexia.

237. Edema is due to

a) Increased capillary osmotic pressure

b) Decreased hydrostatic pressure in capillaries

c) Both of the above

d) Decreased lymph flow

Correct Answer - D

Answer- D. Decreased lymph flow

Conditions causing edema-

1. Increased hydrostatic pressure of capillaries
2. Decreased plasma osmotic pressure of capillaries
3. Defective removal of interstitial fluid by lymphatics
4. Increased vascular permeability
5. Sodium (salt) and water retention

238. All of the following are included in pathogenesis of edema except?

a) Decreased hydrostatic pressure of capillaries

b) Decreased plasma osmotic pressure of capillaries

c) lymphatic obstruction

d) Increased vascular permeability

Correct Answer - A

Answer- A. Decreased hydrostatic pressure of capillaries

239. The role of bradykinin in process of inflammation is

a) Vasoconstriction

b) Bronchodilation

c) Pain

d) Increased vascular permeability

Correct Answer - D

Ans. d. Increased vascular permeability

- *The role of bradykinin in process of inflammation is to increase vascular permeability.*
- *"Bradykinin increases vascular permeability and causes contraction of smooth muscle, dilation of blood vessels, and pain when injected into the skin."- Robbins 8/e p65*

Kinins

- Kinins are vasoactive peptides derived from plasma proteins, called kininogens, by the action of specific proteases called kallikreins.
- The kinin and coagulation systems are also intimately connected.
- *The active form of factor XII, factor XIIa, converts plasma prekallikrein into an active proteolytic form, the enzyme kallikrein, which cleaves a plasma glycoprotein precursor, high-molecular-weight kininogen, to produce bradykinin*
- *Bradykinin increases vascular permeability and causes contraction of smooth muscle, dilation of blood vessels, and pain when injected into the skin.*
- *These effects are similar to those of histamine.*
- *The action of bradykinin is short-lived, because it is quickly inactivated by an enzyme called kininase.*
- *Any remaining kinin is inactivated during passage of plasma through*

the lung by angiotensin-converting enzyme.

- Kallikrein itself is a potent activator of Hageman factor, allowing for autocatalytic amplification of the initial stimulus.
- Kallikrein has chemotactic activity, and it also directly converts CS to the chemoattractant product C5aQ.

240. Immediate transient type of increase vascular permeability in acute inflammation -

a) Venules

b) Capillaries

c) Arterioles

d) None

Correct Answer - A

Ans. is 'a' i.e., Venules

Formation of endothelial gaps in venules is the most common mechanism of vascular leakage

241. Increased vascular permeability in acute inflammation is due to ?

a) Histamine

b) IL 2

c) TGF beta

d) FGF

Correct Answer - A
Ans. is 'a' i.e., Histamine

242. Cardinal signs of Inflammation are all except?

a) Rubor

b) Tumor

c) Color

d) Cyanosis

Correct Answer - D

Answer- D. Cyanosis

- Cardinal signs of acute inflammation (Celsus signs) : Rubor (redness), tumor (swelling), calor (warmth), Dolor (pain).

243. Stellate granuloma is seen in?

a) Crohn's disease

b) Cat scratch disease

c) Hodgkin's disease

d) Berylliosis

Correct Answer - B

Answer- B. Cat scratch disease

- Granuloma with characteristic central neutrophilic abscess surrounded by macrophages and other mononuclear cells are characteristic findings in lymph nodes in cat scratch disease.
- Granulomas are often large and irregular in shape and may exhibit a stellate configuration.

244. Sequence of events in acute inflammation ?

a) Vasodilatation → Stasis → Transient vasoconstriction
→ Increased permeability

b) Transient vasoconstriction → Stasis → Vasodilatation →
Increased permeability

c) Transient vasoconstriction → Vasodilatation → Stasis
→ Increased permeability

d) Transient vasoconstriction → Vasodilatation → Increased
permeability → Stasis

Correct Answer - D

Ans. is 'd' i.e., Transient vasoconstriction → Vasodilatation
→ Increased permeability → Stasis

245. Which of the following helps in movement and adhesion ?

a) MCP1

b) PGE2

c) LTB4

d) CD31

Correct Answer - D

Answer- D. CD31

- Platelet endothelial cell adhesion molecule (PECAM or CD-31) is present on both endothelium and leukocytes. It is the major adhesive molecule for diapedesis

246. Slow mediators of inflammation are?

a) Leukotrienes

b) Prostaglandins

c) Interleukins

d) Vasoactive amines

Correct Answer - A

Answer- A. Leukotrienes

- Leukotrienes are slow acting, therefore LTC₄, LTD₄ and LTE₄ are also called Slow reacting Substances of anaphylaxis (SRS-A).

247. Systemic inflammatory response syndrome, false is

a) Hypoglycemia

b) Fever

c) Leukocytosis

d) Altered mental status

Correct Answer - A

Answer- A. Hypoglycemia

It is an inflammatory state affecting the whole body frequently a response of the immune system to infection, but not necessarily so.

When two or more of these criteria are met with or without evidence of infection -

1. Body temperature less than 36 c greater than 38 C
2. Heart rate greater than 90 beats per minute
3. Tachypnea
4. White blood cell count less than 4000 cells/mm³
5. Hyperglycemia
6. Altered mental state

248. C3 compliment is cleared by

a) CD 59

b) CD 55

c) Factor D

d) Factor E

Correct Answer - B

Answer- B. CD 55

- Decay accelerating factor (DAF; CD55) increases the dissolution of C3 convertase.

249. Major Basic Protein is formed by -

a) Lymphocyte

b) Basophil

c) Neutrophil

d) Eosinophil

Correct Answer - D

Ans. is 'd' i.e., Eosinophil

Eosinophil

- Eosinophils are the major participants in *allergic responses* and *parasitic infestation*.
- Eosinophils develop from stem cells in response to *IL-5*.
- The major chemokine for eosinophils is *eotaxin*.
- Eosinophils have a granule that contains *major basic protein (MBP)*.
- Major basic protein has the following effect ?
 1. *Bactericidal*
 2. *Toxic to parasites*
 3. Causes degranulation of mast cells.
- Eosinophils also produce *leukotrienes, PAF, peroxidase, neurotoxin, eosinophil Cationic proteins, reactive form of O₂*.
- Eosinophils also have *weak phagocytic activity* (The major phagocytic cells are neutrophils and macrophages).

250. HLA 2 is associated with

a) Auto immune diseases

b) Graft rejection

c) Cell mediated cytolysis of viral infected cells

d) Mixed leukocyte reaction

Correct Answer - D

Answer- D. Mixed leukocyte reaction

- MHC-II is responsible for graft versus host response and mixed leukocyte reaction

251. Runt disease is ?

a) Graft rejection

b) Graft vs host disease

c) Host vs graft disease

d) Type III hypersensitivity

Correct Answer - B

Ans. is 'b' i.e., Graft vs host disease

252. Acute graft rejection occurs within

a) 3 hours

b) 3 days

c) 3 months

d) 3 years

Correct Answer - C

Answer- C. 3 months

- Acute rejection - It occurs 5 days to 3 months after transplantation.
- Both cell-mediated (cellular) rejection and humoral (antibody mediated) rejection are involved.

253. Method of prevention of GVHD in bone marrow transplantation is

a) T-cell removal

b) Prior immune suppression

c) Post procedure immune suppression

d) All of the above

Correct Answer - D

Answer- D. All of the above

1. Prior immunosuppression
2. T cell depletion from the marrow or stem cells
3. Treatment after transplant

254. No prior immune suppression is helpful in which type of graft rejection ?

a) Acute rejection

b) Hyperacute rejection

c) Chronic rejection

d) None of the above

Correct Answer - B

Answer- B. Hyperacute rejection

- Hyperacute rejection is caused by ABO incompatibility and preformed cytotoxic antibodies against donor HLA antigens.

255. Secondary allograft rejection is mediated by

a) Memory cells

b) Antibodies

c) Immune complexes

d) None of the above

Correct Answer - A

Answer- A. Memory cells

- After hyperacute rejection, transplantation of a second graft, which shares a significant number of antigenic determinants with the first one, results in a rapid (2 - 5 days) rejection. It is due to presence of T-lymphocyte sensitized during the first graft rejection(memory cells).

256. Complement proteins constitute what percentage of serum proteins ?

a) <1

b) 1-5

c) 5-10%

d) >10%

Correct Answer - C

Answer- C. 5-10%

- The complement system consists of a large number of proteins that together constitute about 10% of the total circulating serum protein.

257. To rule out rheumatoid arthritis, most important among the followings is -

a) HLA DR8

b) HLA DR4

c) HLA DQ1

d) HLA B27

Correct Answer - B

Answer- B. HLA DR4

- DR4 is strongly associated with RA (also with Type 1 DM Pemphigus vulgaris).

258. Amyloid protein seen in dialysis patients

-

a) AA

b) AL

c) Beta - 2- microglobulin

d) ATTR

Correct Answer - C

Answer- C. Beta - 2- microglobulin

- A Beta- 2m
- Precursor- Beta-2 microglobulin
- Syndrome- Hemodialysis

259. Familial amyloidosis is seen in

a) Alzheimer's disease

b) Senile cardiac amyloidosis

c) Renal amyloidosis

d) Splenic amyloidosis

Correct Answer - B

Answer- B. Senile cardiac amyloidosis

- Systemic senile amyloidosis (Senile cardiac amyloidosis). Wild or non-mutant transthyretin amyloid.

260. Amyloidosis is seen in which type of diabetes mellitus?

a) Maturity onset DM

b) Type I DM

c) Type II DM

d) all of the above

Correct Answer - C

Answer- C. Type II DM

- The two best examples of localized amyloidosis are Alzheimer's disease and type 2 diabetes mellitus.
- In type 2 diabetes it is the islet amyloid polypeptide (IAPP) also known as amylin.

261. Inheritance of Crouzon syndrome is -

a) Autosomal dominant

b) Autosomal recessive

c) X-linked recessive

d) Mitochondrial

Correct Answer - A

Answer- A. Autosomal dominant

- Crouzon syndrome is an autosomal dominant disorder with complete penetrance and variable expressivity. It is characterized by premature closure of calvarial and cranial base sutures as well as those of the orbit and maxillary complex.

262. Inheritance of hereditary multiple exostoses

a) Autosomal dominant

b) Autosomal recessive

c) X-linked recessive

d) Mitochondrial

Correct Answer - A

Answer- A. Autosomal dominant

- Hereditary multiple exostoses is characterized by multiple osteochondilomas which cause limb deformities, skeletal abnormalities, short stature, nerve compression and decreased joint range of motion.
- It is inherited as autosomal dominant disorder due to mutation in EXT 1 or EXT2 gene.

263. SnRNA mutation is associated with which syndrome ?

a) Turner syndrome

b) Prader Willi syndrome

c) Klinefelter syndrome

d) Patau syndrome

Correct Answer - B

Answer- B. Prader Willi syndrome

- The syndrome has been linked to the deletion of a region of paternal chromosome 15 that is not expressed on the maternal chromosome (Genomic imprinting). This region includes a brain-specific snRNA that targets the serotonin-2C receptor mRNA.

264. Lysosomal transport defect is seen in

a) Cystinosis

b) Goucher's disease

c) Metachromatic leukosytrophy

d) Tay Sach's disease

Correct Answer - A

Answer- A. Cystinosis

- Two disorders are caused by a proven defect in carrier-mediated transport of metabolites: cystinosis and the group of sialic acid storage disorders (SASD).

265. HER-2/neu gene causes breast carcinoma due to

a) Overexpression

b) Suppression

c) Mutation

d) Translocation

Correct Answer - A

Answer- A. Overexpression

- HER2/neu or ERBB2 gene which encodes for Receptor tyrosine-protein kinase erbB-2, also known as CD340.
- Amplification or over-expression of this oncogene has been shown to play an important role in the development and progression of certain aggressive types of breast cancer.

266. Activation of which gene leads to bladder carcinoma

a) p53

b) p7

c) n-myc

d) BRCA1

Correct Answer - A

Answer- A. p53

- Genes associated with bladder cancer are - p53 (mc), RBl, HRAS, FGFR3, TSC1.

267. Gene associated with superficial papillary urothelial neoplasm

a) p53

b) p16

c) p7

d) KRAS

Correct Answer - B

Answer- B. p16

- Chromosome deletions in 9p, which contains the tumor suppressor gene p16, are the only consistent finding in low grade papillary tumors and flat carcinomas in situ. Deletions in 17 p, the site of p53 gene, are often found in invasive bladder cancer.

268. ck 7 negative and ck 20 negative tumor is

a) Prostate carcinoma

b) Carcinoma colon

c) Urothelial carcinoma

d) Mesothelioma

Correct Answer - A

Answer- A. Prostate carcinoma

- CK7- 1 CK20 → carcinoma of adrenal cortex, prostate

269. Elevated AFP levels are seen in all of the following except -

a) Hepatoblastoma

b) Seminoma

c) Teratoma

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Seminoma Ca

o It is never elevated in seminomas. Presence of alpha feto protein rules out the diagnosis of seminomas.

270. Radiation is most commonly associated with which of the following cancer ?

a) Leukemia

b) Lymphoma

c) Lung carcinoma

d) Osteoblastoma

Correct Answer - A

Answer- A. Leukemia

- Leukemia is the most common radiation induced cancer. All leukemias, except CLL, can be caused by radiations.

271. Which of the following is responsible for adhesion of platelets to the vessel wall?

(4//MS May 2015, November 2013)

a) Factor IX

b) Von Willebrand factor

c) Fibrinogen

d) Fibronectin

Correct Answer - B

Ans: B. Von Willebrand factor

(Ref. Robbins 9/e p116), 660 & Robbins 9/e p116

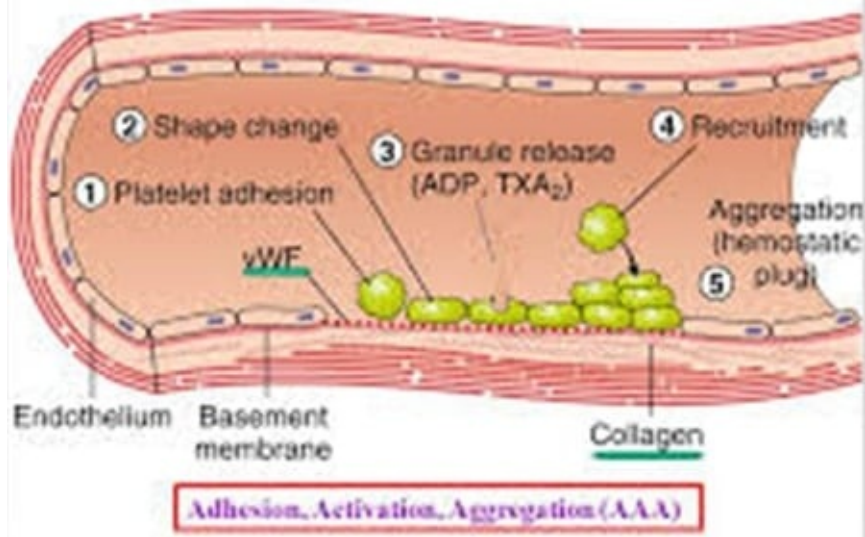
Von-Willebrand factor:

- Product of normal endothelial cells.
- An essential cofactor for platelet binding to matrix elements (adhesion of platelets to vessel wall).

Events:

- Endothelial injury allows platelets to contact underlying extracellular matrix → subsequent adhesion occurs through interactions with von Willebrand factor (vWF).

B. PRIMARY HEMOSTASIS



272. ABO incompatibility in Rh immunization has

a) Protective effect

b) Harmful effect

c) No effect

d) None

Correct Answer - A

Answer- A. Protective effect

- ABO incompatibility has protective effect against the development of Rh sensitization. This protective effect is significant when mother is type O and the father is A, B or AB.

273. MCHC criteria to diagnose iron deficiency anemia -

a) < 32

b) < 34

c) < 28

d) < 30

Correct Answer - B

Answer- B. < 34

Age	Hemoglobin (gm/dl)	MCHC (%)
Children 6 months - 6 Years	11	34
Children 6 Years - 14 Years	12	34
Adult male	13	34
Adult female	34	
Pregnant woman	11	34

274. There is no cyanosis in severe anemia because -

a) Certain min. amount of reduced Hb should be present

b) In anemia, O₂ saturation increases

c) Hypoxia stimulates erythropoietin production

d) O₂ hemoglobin curve shifts to right

Correct Answer - A

Answer-A. Certain min. amount of reduced Hb should be present

- Cyanosis is a blue coloration of the skin and mucous membranes due to the presence of >5 g/dl reduced hemoglobin in blood vessels near the skin surface.
- Now since in anemia the total amount of hemoglobin is decreased, the amount of reduced Hb to produce Cyanosis is not sufficient.

275. In which cause of jaundice there is no bilirubin excretion in urine -

a) Obstructive jaundice

b) Primary billiary cirrhosis

c) Extrahepatic billiary atresia

d) Hemolytic jaundice

Correct Answer - D

Answer- D. Hemolytic jaundice

- All other options lead to conjugated hyperbilirubinemia. Conjugated bilirubin is water soluble and only loosely bound to albumin and thus is easily filtered by glomeruli and excreted in urine.

276. Hypersegmented neutrophils are a feature of:

September 2011, March 2013

a) Hemosiderosis

b) Sideroblastic anemia

c) Megaloblastic anemia

d) Thalassemia

Correct Answer - C

Ans. C: Megaloblastic anemia

The diagnosis of vitamin B₁₂ deficiency anemia is based on leucopenia with hypersegmented granulocytes, a moderate to severe Megaloblastic anemia, elevated levels of homocysteine and methylmalonic acid in the serum and low serum vitamin B12.

Hypersegmented neutrophil

- Normally, the number of segments in the nucleus of a neutrophil increases as it matures and ages, after being released into the blood from the bone marrow.
- Whereas normal neutrophils only contain three or four nuclear lobes (the "segments"), hypersegmented neutrophils contain five or more lobes.
- Hypersegmented neutrophils have classically been thought to be pathognomonic of the megaloblastic anemias (anemias caused by failure of bone marrow blood-forming cells to make DNA, often caused by vitamin B12 or folate deficiencies, or DNA-replication poisons).
- One of the earliest, notable changes in the peripheral blood in *megaloblastic processes* is the appearance of hypersegmented

neutrophils.

- Because of the short life-span of neutrophils, these abnormal hypersegmented neutrophils characteristically appear even before the onset of anemia in megaloblastic processes.
- Such neutrophils are less often seen in the other classes of anemia, which together are far more common than megaloblastic types of anemia.
- Note that pernicious anemia is a type of megaloblastic anemia, and as such, is expected to show hypersegmented neutrophils.

277. True about sickle anemia is -

a) Leucopenia

b) Decreased ESR

c) Microcardia

d) Ringed sideroblast

Correct Answer - B

Answer- B. Decreased ESR

Investigations in sickle cell anemia-

- Peripheral smear shows sickle cells, target cell and Howell - Jolly bodies.
- ESR is decreased
- Positive sickling test
- Hb electrophoresis shows two bands in heterozygous state/sickle cell trait.
- Bone changes on X-ray show:-
 - A. Fish mouth vertebrae
 - B. Crew hair cut (hair on end) appearance of skull.
- ('Hair on end appearance' is also seen in thalassemia, hereditary spherocytosis and G6PD deficiency.)
- Gamma Gandy bodies

278. Cold agglutinins are seen in -

a) Influenza

b) PAN

c) Multiple myeloma

d) SLE

Correct Answer - A

Answer- A. Influenza

- This form of hemolytic anemia is caused by cold agglutinin IgM antibodies.
- Both intravascular and extravascular hemolysis may occur.
- Causes of cold agglutinin immunohemolytic anemia :- Mycoplasma infection, IMN, CMV, Influenza, HIV, Malignant lymphoma.

279. Anti coagulant used in coagulation study is -

a) Calcium citrate

b) EDTA

c) Sodium bromide

d) Trisodium citrate

Correct Answer - D

Answer- D. Trisodium citrate

- For coagulation studies: Trisodium citrate (citric acid).

280. Anticoagulant used for chelating calcium -

a) EDTA

b) Oxalate

c) Sodium citrate

d) All of the above

Correct Answer - D

Answer-D. All of the above

- Most of the anticoagulants used in the laboratory act by binding calcium as an insoluble salt or soluble but un-ionized salt.

These calcium chelating anticoagulants are :-

1. EDTA
2. Double oxalate
3. Sodium citrate
4. Sodium fluoride

281. Preservative used in coagulation study is

-

a) Calcium citrate

b) EDTA

c) Sodium bromide

d) Thrombin

Correct Answer - B

Answer- B. EDTA

Commonly used anti coagulants are-

- EDTA
- Heparin
- Sodium citrate
- Oxalates
- Sodium fluoride
- Sodium iodoacetate

282. Russel bodies are seen in -

a) Multiple Myeloma

b) Rabies

c) Parkinsonism

d) Intracranial neoplasm

Correct Answer - A

Answer- A. Multiple Myeloma

- Russell bodies are large homogenous eosinophilic inclusions formed by hugely distended endoplasmic reticulum of plasma cells.
- It is a characteristic feature of multiple myeloma.

283. Cyclin D1/Ig H gene is associated with -

a) Mantle cell lymphoma

b) Hairly cell leukemia

c) Follicular lymphoma

d) Diffuse large B-cell lymphoma

Correct Answer - A

Answer- A. Mantle cell lymphoma

- Mantle cell lymphoma, a translocation has juxtaposed the Iq13 band bearing cycline D1 gene with the IgH locus on chromosome 14 (11-14 translocation).

284. Most common type of emphysema is:
March 2013

a) Centriacinar

b) Panacinar

c) Paraseptal

d) Irregular

Correct Answer - A
Ans. A i.e. Centriacinar

Emphysema

- It is COPD.
- It is defined pathologically as an abnormal permanent enlargement of air spaces distal to the terminal bronchioles, accompanied by the destruction of alveolar walls and without obvious fibrosis.
- It frequently occurs in association with chronic bronchitis.
- Patients have been classified as having COPD with either emphysema or chronic bronchitis predominance.
- The 3 described morphological types of emphysema are centriacinar, panacinar, and paraseptal.
Centriacinar emphysema begins in the respiratory bronchioles and spreads peripherally.
Also termed centrilobular emphysema, this form is associated with long-standing cigarette smoking and predominantly involves the upper half of the lungs.
- Panacinar emphysema destroys the entire alveolus uniformly and is predominant in the lower half of the lungs.
- Panacinar emphysema generally is observed in patients with homozygous alfa antitrypsin deficiency.
- In people who smoke, focal panacinar emphysema at the lung bases

may accompany centriacinar emphysema.

- Paraseptal emphysema, also known as distal acinar emphysema, preferentially involves the distal airway structures, alveolar ducts, and alveolar sacs.

- The process is localized around the septae of the lungs or pleura.
- Although airflow frequently is preserved, the apical bullae may lead to spontaneous pneumothorax.
- Giant bullae occasionally cause severe compression of adjacent lung tissue.

285. Most common type of lung carcinoma in non smokers is:

March 2005 and September 2011

a) Small cell carcinoma

b) Adenocarcinoma

c) Squamous cell carcinoma

d) Large cell carcinoma

Correct Answer - B

Ans. B: Adenocarcinoma

Common types of lung cancer classification (e.g., based on histopathologic factors) include the following:

- Small cell carcinoma (also called oat cell carcinoma; lung cancer composed of anaplastic (unspecialized, undifferentiated) small cells)
- Squamous cell carcinoma (cancer of the layered, squamous epithelium (surface cells) of the lungs or bronchi)
- Adenocarcinoma (cancer of the glandular tissue, or cancer in which the tumor cells form recognizable glandular patterns)
- Large cell carcinoma (lung cancer composed of large-sized cells that are anaplastic in nature and often arise in the bronchi)
- Broncho-alveolar carcinoma
- Mixed and undifferentiated pulmonary carcinomas

Adenocarcinoma of the lung is currently the most common type of lung cancer in lifelong non-smokers. Adenocarcinomas account for approximately 40% of lung cancers.

This cancer is more often seen peripherally in the lungs than are small cell lung cancer and squamous cell lung cancer, both of which tend to be more often centrally located.

286. The most common benign tumor of the lung is ?

a) Hamartoma

b) Alveolar adenoma

c) Teratoma

d) Fibroma

Correct Answer - A
Ans. is 'a' i.e., Hamartoma

287. All are cause of transudative pleural effusion, EXCEPT:

a) Cirrhosis

b) Nephrotic syndrome

c) Congestive heart failure

d) Bronchogenic carcinoma

Correct Answer - D

Bronchogenic carcinoma causes exudative effusion. Cirrhosis, Nephrotic syndrome and Congestive heart failure cause transudative effusion. Pulmonary thrombo embolism can cause both exudative and transudative pleural effusion.

Ref: Harrisons principles of internal medicine, 18th edition, Page: 2180

288. Renal papillary necrosis is almost always associated with one of the following conditions :

a) Diabetes-mellitus

b) Analgesic-nephropathy

c) Chronic pyelonephritis

d) Post streptococcal GN

Correct Answer - A

Answer is A (Diabetes Mellitus):

'Renal papillary necrosis, an accompaniment of acute pyelonephritis is most often seen in diabetics and is characterised by necrosis of renal papillae of one or both kidneys with sharp demarcation between necrotic and living tissue' — Dorlands

Thus while papillary necrosis is a feature of more than one conditions mentioned in the question, it is most commonly seen with diabetes mellitus.

289. True about Henoch Schonlein purpura is

-

a) Medium vessels vasculitis

b) Renal symptoms start late in the disease

c) IgA deposition in mesangium

d) Low Platelet count

Correct Answer - C

Answer- C. IgA deposition in mesangium

- Henoch - Schonlein purpura is vasculitis of small vessels (capillaries, venule or arterioles) and characterized by deposition of IgA in the wall of involved vessels.
- H.S. purpura is characterized by tetrad of purpura arthritis glomerulonephritis, and abdominal pain.
Diagnosis is confirmed by presence of palpable purpura with normal platelet count along with one or more of the following:
- abdominal pain, arthralgia/arthritis and mesangial deposition of IgA.

290. Increased BP, proteinuria, RBC casts are the features of which type of Glomerulonephritis ?

a) RPGN

b) Membranous GN

c) Membranoproliferative GN

d) Focal segmental glomerulosclerosis

Correct Answer - A

Answer- A. RPGN

- Haematuria, proteinuria, hypertension, edema and oliguria are the clinical features associated with Nephritic syndrome.
- Presence of RBC casts in urine is classical feature of nephritic syndrome.

291. Most common site for small intestinal carcinoma is -

a) Duodenum

b) Jejunum

c) Ileum

d) All are affected equally

Correct Answer - A

Answer- A. Duodenum

- Adenocarcinoma is the most frequent carcinoma found in small intestine.
- Upper small intestine is the most common site for carcinoma with duodenum, jejunum and ileum.

292. Most common malignant mesenchymal tumor of liver is -

a) HCC

b) Cholangiocarcinoma

c) Angiosarcoma

d) Hepatoblastoma

Correct Answer - C

Answer- C. Angiosarcoma

- Angiosarcoma is the most common malignant mesenchymal neoplasm of the liver.

293. Maximum ground appearance change is associated with -

a) Hep A

b) Hep B

c) Hep C

d) Hep E

Correct Answer - B

Answer- B. Hep B

- HBV-infected hepatocytes may show a cytoplasm packed with spheres and tubules of HBs Ag, producing a finely granular cytoplasm (ground-glass hepatocytes).

294. True about histology in infiltrating lobular breast carcinoma-

a) Single file pattern

b) Pleomorphic cells in sheets

c) Cribriform pattern

d) Pin wheel pattern

Correct Answer - A

Ans. is 'a' i.e., Single file pattern

o Histological hallmark of invasive lobular breast carcinoma is pattern of single infiltrating tumor cells often only one cell in width or in loose clusters or sheets.

295. Dimorphic carcinoma is -

a) Papillary carcinoma breast

b) Follicular carcinoma thyroid

c) Gastric adenocarcinoma

d) Endometrial carcinoma

Correct Answer - A

Answer- A. Papillary carcinoma breast

- Dimorphic papillary carcinoma is a term that has been used to refer to papillary carcinoma that has 2 types of neoplastic cells, with a second population of cells showing pale cytoplasm.

296. BRCA- 1 gene is associated with -

a) Lobular carcinoma

b) Mucinous carcinoma

c) Tubular carcinoma

d) Papillary carcinoma

Correct Answer - B

Answer- B. Mucinous carcinoma

- Familial cancers (or around 3% of all breast cancer) can be attributed to two highly penetrant autosomal dominant genes BRCA-1 on chromosome 17 (52%) and BRCA-2 on chromosome 13.

297. Non seminal germ cell tumors of testis secrete -

a) CEA

b) Acid phosphatase

c) Alfa feto protein

d) Cytokeratin

Correct Answer - C

Answer- C. Alfa feto protein

- Non-seminoma germ cell tumors (NSGCT) are spermatocytic seminoma, embryonal carcinoma, Yolk sac tumor (also called endodermal sinus tumor or infantile embryonal carcinoma), teratoma, and choriocarcinoma.

298. Not a testicular tumor marker -

a) a-1 antitrypsin

b) HCG

c) Alfa feto protein

d) CA-125

Correct Answer - D

Answer- D. CA-125

CA-125 is an ovarian tumor marker.

299. Thyroid follicular adenoma & carcinoma are differentiated by ?

a) Nuclear pleomorphism

b) Hurthle cell change

c) Capsular invasion

d) Absence of colloid

Correct Answer - C

Answer- C. Capsular invasion

- The hallmark of all follicular adenomas is the presence of an intact, wall-formed capsule encircling the tumor.
- FNAC is the best investigation for the diagnosis of all thyroid carcinomas.
- Hurthle cells are seen both in follicular adenomas and follicular carcinoma.

300. Kinky hair disease is due to defect in ?

a) Iron transport

b) Calcium transport

c) Copper transport

d) Magnesium transport

Correct Answer - C

Answer- C. Copper transport

- Kinky Hair Disease(Steely Hair Disease, Menkes disease, Copper Transport Disease)
- It is a X-linked recessive disorder that affects copper levels in the body, leading to copper deficiency.
- It is caused by mutations in the copper transport gene, ATP7A (located on chromosome Xq21.1), which is responsible for
- making a protein that is important for regulating the copper levels in the body.
- It is characterized by kinky hair, growth failure, and deterioration of the nervous system.

301. Excessive accumulation of which hormone protein causes organ dysfunction -

a) Growth hormone

b) Prolactin

c) Calcitonin

d) Parathormone

Correct Answer - C

Answer- C. Calcitonin

- A. cal amyloid protein, derived from calcitonin, causes amyloidosis in medullary carcinoma of thyroid.

**302. Most important amino acid for formation
Neutrophilic extracellular trap [NET] is ?**

a) Leucine

b) Methionine

c) Citrulline

d) Valine

Correct Answer - C

Answer- C. Citrulline

- Positively charged arginine is converted to neutral amino acid citrulline by the enzyme peptidyl arginine deaminase (citrullination).
- Citrullination is an essential step of NET formation.
- NETs provide for a high local concentration of antimicrobial components such as neutrophil elastase, cathepsin G and histones, that have a high affinity for DNA.

303. Lipschutz bodies are seen in ?

a) Hodgkin's disease

b) Viral hepatitis

c) Herpes

d) Yellow fever

Correct Answer - C

Answer- C. Herpes

- Lipschutz bodies are Cowdry type A intranuclear inclusion bodies seen in herpes infection.

304. Rolled up edges are seen in which of the following ulcer -

a) Tubercular

b) Venous

c) Rodent

d) Gummatous

Correct Answer - C

Answer-C. Rodent

Rolled up- Rodent (BCC)

305. Infected gangrene of skin and subcutaneous tissues is ?

a) Dry gangrene

b) Wet gangrene

c) Erysipelas

d) None of the above

Correct Answer - B

Answer- B. Wet gangrene

- Wet gangrene When overlying skin of dry gangrenous tissue is devitalized, bacterial infection is superimposed.
- More commonly due to venous occlusion than arterial occlusion.

306. Tadpole cells comma shaped cells on histopathology are seen in -

a) Trichoepithelioma

b) Spideroma

c) Rhabdomyosarcoma

d) Histiocytoma

Correct Answer - C

Ans. is 'c' i.e., Rhabdomyosarcoma

Histology of rhabdomyosarcoma

o The diagnostic cell of rhabdomyosarcoma is rhabdomyoblast.

o Rhabdomyoblast contains eccentric eosinophilic granular cytoplasm rich in thick and thin filaments. o The rhabdomyoblasts may be ?

i) Round

Elongated Tadpole or Strap cells.

o It has three variants

i) Embryonal

Alveolar

iii) Pleomorphic

o Rhabdomyoblasts are positive for *desmin*, *MYOD1* and *Myogenin*.

307. Which of the following statements about Insulinoma is true:

a) Present in Pancreas

b) Mostly malignant

c) Surgery is usually not required

d) Usually multiple

Correct Answer - A

Answer is A (Present in Pancreas):

The most common site of Insulinomas is the Pancreas.

308. Cells responsible for basal cell carcinoma are ?

a) Melanocytes

b) Epidermal cells

c) Merkel's cells

d) Dermal cells

Correct Answer - B

Answer-B. Epidermal cells

- Basal cell carcinoma (BCC) is a nonmelanocytic skin cancer (ie, an epithelial tumor) that arises from basal cells (i.e, small, round cells found in the lower most layer of the epidermis).

309. True about drug metabolism ?

a) Glucuronidation is phase I reaction

b) Most common enzyme involved is Cyp 3A4/5

c) Reduction is most common reaction

d) Cytochrome p450 is involved phase-II reaction

Correct Answer - B

Ans. is'b'i.e., Most common enzyme involved is Cyp 3A4/5

(Ref: Katzung 11th/e p. 55)

- Cytochrome p450 enzymes are microsomal enzymes that are involved in phase I metabolism of many drugs.
- Most of the drugs are metabolized by Cyp 3A4 isoform.
- Cyp 3 A 4/5 carryout biotransformation of largest number (nearly 50%) of drugs.

310. All are pharmacogenetic conditions, except -

a) Adenosine deaminase deficiency

b) Malignant hyper-pyrexia

c) Coumarin insensitivity

d) G6PD deficiency

Correct Answer - A

Ans. is 'a' i.e., Adenosine deaminase deficiency

o Examples of pharmacogenetic conditions are (i) Atypical pseudocholinesterase (prolonged succinylcholine apnea); (ii) Glucose-6-phosphate dehydrogenase (G-6-PD) deficiency; (iii) Acetylator polymorphism; (iv) Acute intermittent porphyria; (v) Malignant hyperthermia by halothane; (vi) Resistance to coumarin anticoagulants; (vii) inability to hydroxylate phenytoin; (viii) CYP2D6 abnormality; and (ix) Precipitation of acute angle closure glaucoma by mydriatics.

311. Dosage of drug is determined by following except ?

a) Volume of distribution

b) Halflife

c) Lipid solubility

d) None

Correct Answer - D

Ans. is 'None'

o Loading dose is governed by volume of distribution and volume of distribution is affected by lipid solubility. o Maintenance dose is governed by clearance (excretion) of drug and half life.

o For one option go ahead for option b ie half life because :

"Clearance is the most important factor for maintenance dose".

312. True about barbiturates ?

a) Have steep dose response curve

b) Have analgesic action

c) Are enzyme inhibitors

d) Acidification of urine is done in poisoning

Correct Answer - A

Ans. is ,a, i.e., Have steep dose response curve

(Ref: Goodman & Gillman 12th ed p. 471)

- Barbiturates depress all areas of CNS, but the reticular activating system is most sensitive.
- Barbiturates have steep dose response curve.
- Except For phenobarbitone in epilepsy and thiopentone in anaesthesia, barbiturates
- are used now. The enzyme inducing property- of phenobarbitone can be utilized to hasten clearance of congenital nonhemolytic jaundice and kernicterus,
- There is no specific antidote for their poisoning

313. Maintenance dose of drug is dependent on ?

a) Half life

b) Volume of distribution

c) Total body concentration

d) Loading dose

Correct Answer - A

Ans. is 'a' i.e., Half life

Loading dose is governed by volume of distribution.

Maintenance dose is governed by clearance or $P/2$.

The drug with *short $t_{1/2}$* with loading and maintenance dose concept → *Lignocaine*.

314. Most common organ involved in elimination of drug?

a) Liver

b) Kidney

c) Intestine

d) Spleen

Correct Answer - A:B

Ans. is'a > b'i.e., Liver > Kidney

(Re.f: Clinical Pharmacology 3'd/e p.11)

The elimination of drug is the sum total of -

.. Metabolism) Most drugs are metabolized in liver.

?. Excretion) Most drugs are excreted in urine through kidney.

315. Orphan drugs are:
March 2010, March 2013

- a) Commercially easy to obtain.
- b) Drugs to treat rare diseases usually
- c) Developed with an intention of monetary gain
- d) All of the above

Correct Answer - B

Ans. B: Drugs to treat rare diseases usually

An orphan drug is a pharmaceutical agent/biological products that has been developed specifically to diagnose/treat/ prevent a rare medical condition (the condition itself being referred to as an orphan disease) or a more common condition which is endemic only in poor resource countries.

There is no reasonable expectation that the cost of developing and marketing will be recovered from the sale of that drug.

Though these drugs may be life saving for some patients, they are commercially difficult to obtain.

The assignment of orphan status to a disease and to any drugs developed to treat it is a matter of public policy in many countries, and has resulted in medical breakthroughs.

A rare disease, sometimes known as an orphan disease, is any disease that is not common.

316. Which of the following is designer drug ?

a) Propofol

b) Ketamine

c) Alcohol

d) Disulfiram

Correct Answer - B

Ans. is'b'i.e., Ketamine | Ref. Internet

- A designer drug is a structural or functional analog of controlled substance that has been designed to mimic the pharmacological effects of parent drug while avoiding detection or classification as illegal.

317. Fraction of drug that reaches in the blood is ?

a) $T_{1/2}$

b) Absorption

c) Bioavailability

d) Elimination

Correct Answer - C

Ans. is 'c' i.e., Bioavailability

"Bioavailability is a measure of fraction (F) of administered dose of a drug that reaches the systemic circulation".

318. Which of the following drugs belong to category X risk category for the use in pregnancy?

a) Penicillin V

b) Thiopentone

c) Aspirin

d) Isotretinoin

Correct Answer - D

Ans. is'd'i.e., Isotretinoin

[Ref KDT //e p. 70)

- Category X drugs have proven fetal abnormalities and are teratogenic.
- **Eg:** Estrogens, isotretinoin, ergometnne thalidomide

319. Following are the advantages of sustained release preparation over the conventional preparations except ?

a) Decreased frequency of administration

b) Improved compliance

c) Less incidence of high peak side effects

d) Drugs with half life > 4 hours are suitable

Correct Answer - D

Ans. is 'd' i.e., Drugs with half life > 4 hours are suitable

- **Acts for a longer period.**
- Frequency of administration is reduced -more convenient.
- Improved patient compliance - a single morning dose is less likely to be forgotten/omitted than a 6 or 8 hourly regimen; a monthly or quarterly administered contraceptive over one that has to be taken daily.
- Large fluctuations in plasma concentration are avoided.
- Side effects related to high peak plasma level just after a dose (e.g. nifedipine) would be minimized.
- Better round-the-clock control of blood sugar, etc.
- Drug effect could be maintained overnight without disturbing sleep, e.g. antiasthmatics, anticonvulsants, etc.

320. Anaphylactic reaction caused by NSAIDs, all are true, except ?

a) Caused by All NSAIDs

b) COX-2 inhibitors are safe

c) Related to hypersensitivity reaction

d) Not related to inhibition of COX

Correct Answer - B

Ans. is 'b' i.e., COX-2 inhibitors are safe

(Ref: Clinical pharmacology 3d/e p.786)

Anaphylactic reaction (anaphylaxis)

- It is due to immediate (type-I) hypersensitivity involving cross linking of drug-specific IgE.
- Regardless of COX selectivity pattern, NSAIDs may function as haptens capable of inducing allergic sensitization.
- Thus, all COX inhibitors (nonselective or selective) can cause this reaction.

321. Which of the following is an selective α 2 antagonist?

a) Prazosin

b) Labetalol

c) Yohimbine

d) Butoxamine

Correct Answer - C

Ans. is 'c' i.e., Yohimbine

Selective α 2-antagonists are *yohimbine* and *idozoxon*.

322. Best antihypertensive drug used in pulmonary hypertension is:

a) Digoxin

b) Furosemide

c) Amlodipine

d) Bosentan

Correct Answer - D

Ans: D. Bosentan

(Ref Harrison 19/e p1659, 18/e p2079)

Treatment of Pulmonary Arterial Hypertension

Endothelin-
Receptor
Antagonists

- Bosentan & ambrisentan are approved for the treatments of
- Bosentan is contraindicated in patients who are on cyclosporine or glyburide concurrently.
- Sildenafil and tadalafil are approved for the treatment of PAH

Phosphodiesterase-
5 Inhibitors

- MC side effect is headache
- Neither drug should be given to patients who are taking nitro vasodilators.
- Iloprost is approved via inhalation for PAH°.
- Epoprostenol is approved as a chronic IV treatment of PAH.

Prostacyclins

- Treprostinil, an analogue of poprostenol, is approved for PAH and may be given intravenously, subcutaneously, or via inhalation.
- The intravenous prostacyclins have the greatest efficacy as treatments for PAH and are often

Lung
Transplantation

effective in patients who have failed all other treatments.

- Lung transplantation is considered for patients who, while on an intravenous prostacyclin, continue to manifest right heart failure.

323. Dexmedetomidine acts on which receptor for its analgesic action ?

a) 5HT_{2A}

b) D₂

c) α_{2A}

d) D₅

Correct Answer - C

Ans. is 'c' i.e., α_{2A}

[Ref: KDT 7n/e p. 384]

- Dexmedetomidine is centrally active selective alpha (α₂) agonist that has been introduced for sedating critically ill ventilated patients in intensive care units.

324. Digitalis acts in atrial fibrillation by

a) Increasing AV node refractoriness

b) Decreasing atrial contractility

c) Inhibiting $\text{Na}^+ \text{K}^+$ ATPase pump

d) Inhibiting $\text{Na}^+ \text{H}^+$ ATPase pump

Correct Answer - A

Ans. is 'a' i.e., Increase in A.V. node refractoriness

Digitalis in arrhythmia

- Digitalis is the drug of choice for controlling ventricular rate in atrial fibrillation (AF) with heart failure.
- Digitalis reduces the ventricular rate in AF by decreasing the number of impulses that are able to pass down the A-V node and bundle of His.
- It increases effective refractory period-ERP (refractoriness) of A-V node by direct, vagomimetic and antiadrenergic action - the minimum interval between consecutive impulses that can successfully traverse the conducting tissue is increased.
- A degree of A-V block is naturally established in AF.
- Because of the relatively long ERP of A-V node, many atrial impulses impinge on it while it is still refractory; others falling early in the relative refractory period get extinguished by decremental conduction - These concealed impulses leave upper margin of A-V node refractory for a further period.
- Thus, any influence which increases atrial rate in AF (e.g. digitalis), by itself reduces ventricular rate.

325. Which of the following can cause first dose syncope?

a) Prazosin

b) Propranolol

c) ACE inhibitors

d) a and c

Correct Answer - D

Ans. is 'a' i.e., Prazosin & 'c' i.e., ACE inhibitors

"First dose effect (postural hypotension) is now uncommon and occurs mainly with drugs having an action on veins (α-adrenoreceptor blockers, ACE inhibitors) when baroreceptors reflex is impaired e.g. old age or with contracted intravascular volume following diuretics"

326. Most serious side effect of valproate is

a) Fulminant hepatitis

b) Spina bifida

c) Weight gain

d) Thrombocytopenia

Correct Answer - A

Ans. is 'a' i.e., Fulminant hepatitis

Valproate

- **Valproate acts by multiple mechanism :**
 1. Prolongation of inactivated Na^{*} channel.
 2. Inhibition of T type Ca['] current.
 3. Inhibition of degradation of GABA by GABA transaminase → facilitation of GABA mediated Cl⁻ channel opening.
- *Its most serious adverse effect is fulminant hepatitis especially in children below 3 years.*
- *Used during pregnancy, it has produced spina bifida and other neural tube defects.*
- Uses (other than epilepsy) --> mania & bipolar illness, prophylaxis of migraine, trigeminal neuralgia, tardive dyskinesia.

Adverse effect of Valproate

- Neurological - Ataxia, sedation, tremor
- Systemic- Hepatotoxicity, thrombocytopenia, GI irritation, weight gain, transient alopecia, hyperammonemia, pancreatitis, coagulation disorder.

327. Benzodiazepine binding site on GABA receptors is on ?

a) γ -subunit

b) α -subunit

c) β -subunit

d) δ -subunit

Correct Answer - B

Ans. is 'b' i.e., α -subunit

[Ref: Goodman (t Gilman 11th/e p. 405, 406; Receptor subunit & complexes p. 168]

- The exact subunit structures of native GABA receptors are still unknown, but it is thought that most GABA receptors are composed of α , β & γ subunits that coassemble with some uncertain stoichiometry.
- Binding site of GABA is on β -subunit.
- Benzodiazepine site is located on the α subunit but the stabilization or completion of that site in the assembled structure also requires the γ subunit.

328. Which of the following is incorrect about NSAIDs?

a) Used in neuropathic pain

b) Decreases antihypertensive action of diuretics

c) Should be avoided in renal failure

d) Can be used topically

Correct Answer - A

Ans. a. Used in neuropathic pain

- NSAIDs are not used in neuropathic pain.
- NSAIDs reduce renal blood flow and thereby decrease the efficacy of diuretics, and inhibit the elimination of lithium and methotrexate.'
- NSAIDs may aggravate hypertension (high blood pressure) and thereby antagonize the effect of antihypertensives, such as ACE inhibitors and diuretic.
- Globally, topical preparations are available for diclofenac, eltenac, felbinac, ibuprofen, ketoprofen, and piroxicam.'
- Nociceptive pain usually responds to opioids and non-steroidal anti-inflammatory (NSAIDS).

329. A patient ingested some unknown substance and presented with myoclonic jerks seizures, tachycardia and hypotension. The ECG showed a heart rate of 120/minute with QRS interval of 0.16 seconds. The atrial blood revealed a pH of 7.25, PCO₂ of 30 mmHg and HCO₃ of 15 mmol/L. the most likely cause of poisoning is ingestion of-

a) Amanita phalloides

b) Ethylene glycol

c) Imipramine

d) Phencyclidine

Correct Answer - C

Ans. is 'c' i.e., Imipramine

C/F of TCA (Tricyclic Antidepressant) poisoning

Tricyclic antidepressant poisoning

o TCAs act primarily by inhibiting serotonin and norepinephrine reuptake. It results in elevation of extracellular concentration of these neurotransmitters.

o The toxic effects of TCAs are caused by four main pharmacological properties:

(i) *Inhibition of norepinephrine reuptake at nerve terminals.*

(ii) *Direct alpha adrenergic block.*

Anticholinergic action

(iv) *Membrane stabilizing or quinidine like effect on myocardium*

Clinical features

o Clinical features of TCAs poisoning may be on various systems:

(i) *CNS: Seizures (convulsions), drowsiness, coma, muscle spasm, rigidity, pyramidal signs, delirium, respiratory depression, ophthalmoplegia*

(ii) *CVS: Tachycardia, hypotension, arrhythmias, ECG changes (Prolongation of PR/QRS/QT interval, right axis deviation, R wave greater than S wave, ST/T wave changes), heart block, vasodilatation, cardiogenic shock*
Anticholinergic: Dry mouth, blurred vision, dilated pupils, urinary retention, absent bowel sound, pyrexia

(iv) *Metabolic: Acidosis.*

330. Mechanism of action of buspirone is?

a) 5 HT1A partial agonism.

b) 5 HT1B antagonism.

c) 5 HT1B partial agonism.

d) 5 HT2C antagonism.

Correct Answer - A

Ans. A. HT1A partial agonism

5 HT1A:

- Presynaptic autoreceptor.
- Modulates serotonin release.

Partial 5 HT1A agonists:

- Buspirone, isapirone, gepirone.
- Useful as anti-anxiety drug.

331. Rivastigmine is used in ?

a) Dementia

b) Dissociation

c) Depression

d) Delusions

Correct Answer - A

Ans. is 'a' i.e., Dementia

Cognition Enhancers (Cerebroactive drugs)

- These are a heterogenous group of drugs developed for use in dementia and other cerebral disorders.
- Drugs are
 1. Cholinergic *activators* → Tacrine, Rivastigmine, Donepezil, Galantamine.
 2. *Glutamate (NMDA) antagonist* → Memanite
 3. *Miscellaneous* → Piracetam, Pyritinal (pyrithioxine), Piribedil, Dihydroergotoxine (Codergocrine). Important points about some important drugs.

Tacrine

- It was the first centrally active *anticholinesterase* to be used in AD.
- *Hepatotoxicity has restricted its use.*

Rivastigmine

- It is carbamate derivative of physostigmine.
- *It inhibits both acetylcholinesterase and butylcholinesterase.*
- It is selective for G_1 isoform of AchE which predominates in brain.
- It is used in AD.

Donepezil

- It is reversible inhibitors of cerebral AchE.
- *It has long PA (70 hours) → Single daily dose can be given.*

- It is used in AD.

Galantamine

- It inhibits cerebral AchE.
- It has some direct action on nicotinic receptors as well.

Acetyl - I - carnitine

- It has *antioxidant* property.
- It also *increases cholinergic transmission*.
- It decreases symptoms of AD as well as it decreases disease progression.

Memantine

- A NMDA receptor antagonist, used in AD.

332. Drug which can act as antagonis of Haloperidole ?

a) Ropinirole

b) Clozapine

c) Imipramine

d) Pimozide

Correct Answer - A

Ans. is'a'i.e., Ropinirole

- Haloperidol is an antipsychotic, acts by > D2 receptor blockage.
- Ropinirole is an antiparkinsonian drug, acts by > D2 receptor agonist.

333. Which of the following antipsychotics is available in a depot injection?

a) Fluphenazine

b) Ziprasidone

c) Trifluoperazine

d) Aripiprazone

Correct Answer - A

Ans. a. Fluphenazine

Fluphenazine decanoate can be given as a depot i.m. injection every 2-4 weeks.

"Long acting intramuscular (IM) depot preparations of antipsychotics include fluphenazine decanoate, fluphenazine enanthate, flupenthixol decanoate, haloperidol decanoate, olanzapine pamoate, pipotiazine palmitate, resperidone consta and zuclopenthixol decanoate."

Long Acting Intramuscular (IM) Depot Preparations of Antipsychotics

Fluphenazine Haloperidol Resperidone
decanoate decanoate consta

Fluphenazine Olanzapine Zuclopenthixol
enantate pamoate decanoate

Flupenthixol Pipotiazine
decanoate palmitate

334. Sedative with GABA facilitating action but without anticonvulsant and muscle relaxant properties and no effect on sleep ?

a) Diazepam

b) Zolpidem

c) Phenobarbitone

d) Buspirone

Correct Answer - B

Ans. is 'b' i.e., Zolpidem

Among the given options, three are sedative-hypnotic with GABA facilitatory action -

- Diazepam (a benzodiazepine) → But it also has anticonvulsant and muscle relaxant property. it) Phenobarbitone → But it has anticonvulsant property.
- Zolpidem
 - Has no anticonvulsant and muscle relaxant property and have no effect on sleep architecture. Zolpidem
 - Zolpidem is a non-benzodiazepine hypnotic.
 - Minimal suppressive effect on REM sleep architecture is not disturbed.

335. Antidepressant which is a Presynaptic α -2 receptor blocker which enhance secretion of both norepinephrine and serotonin ?

a) Trazodone

b) Mirtazapine

c) Mianserine

d) Bupropion

Correct Answer - B

Ans. is'b'i.e., Mirtazapine

- Mirtazapine
- It blocks α -2 auto-receptors (on NA neurons) and heteroreceptors (on 5HT-neurons)

336. All of the following are true regarding sumatriptan except:
September 2009

a) 99% oral bioavailability

b) Contraindicated in coronary artery disease

c) Constricts cranial vessels

d) Selective 5-HT 1B/1D receptor agonist

Correct Answer - A

Ans. A: 99% oral bioavailability

Sumatriptan is structurally similar to serotonin, and is a selective 5-HT 1B/1D receptor agonist.

The specific receptor subtypes it activates are present on the cranial arteries and veins. Acting as an agonist at these receptors, Sumatriptan reduces the vascular inflammation associated with migraine.

It causes constriction of dilated cranial extracerebral blood vessels, especially the arterio-venous shunts in the carotid artery.

Dilatation of these shunt vessels during migraine attack is believed to divert blood flow away from the brain parenchyma. Sumatriptan is administered in several forms; tablets, subcutaneous injection, and nasal spray. Oral administration (as succinate) suffers from poor bioavailability, partly due to presystemic metabolism — some of it gets broken down in the stomach and bloodstream before it reaches the target arteries.

Sumatriptan is metabolised primarily by monoamine oxidase A into an indole acetic acid analogue, part of which is further conjugated with glucuronic acid. These metabolites are excreted in the urine and bile.

and other

Large doses of sumatriptan (200 mg/ day) can cause sulfhemoglobinemia, a rare condition in which the blood changes from red to greenish-black, due to the integration of sulfur into the hemoglobin molecule.

Serious cardiac events include coronary artery vasospasm, transient myocardial ischemia, myocardial infarction, ventricular tachycardia, and ventricular fibrillation.

337. Most effective agent to prevent motion sickness is?

a) Ephedrine

b) Nedocromil

c) Cyproheptidine

d) Hyoscine

Correct Answer - D

Ans. is `d' i.e., Hyoscine

Motion sickness is more easily prevented than cured.

Transdermal hyoscine (scopolamine) is the best agent for the prevention of /notion sickness.

Antihistamines can also be used for prevention.

338. Alprostadil is not used for -

a) Erectile dysfunction

b) Pulmonary hypertension

c) Patent ductus arteriosus

d) Critical limb ischemia

Correct Answer - C

Ans. is 'c' i.e., Patent ductus arteriosus

o Alprostadil is used to keep the ductus open and not to treat patent ductus arteriosus.

339. Misoprostol used in the induction of labour is an analogue of which of the following type of prostaglandin?

a) PG E1

b) PG E2

c) PG I2

d) PG F2alpha

Correct Answer - A

Misoprostol is a methyl ester of PGE1.

Indications of Misoprostol:

- It is used for cervical ripening.
- Transvaginally it is used for induction of labour.

Uses of Prostaglandins in Obstetrics:

- Induction of abortion
- Termination of molar pregnancy
- Induction of labour
- Cervical ripening prior to induction of labour
- Acceleration of labour
- Management of atonic postpartum hemorrhage
- Medical management of tubal ectopic pregnancy

Ref: Textbook of Obstetrics By DC Dutta 6th edn page 504.

340. Drugs used in migraine prophylaxis are all except

a) Flunarizine

b) Propranolol

c) Cyproheptadine

d) Sumatriptan

Correct Answer - D

Ans. is 'd' i.e., Sumatriptan

Sumatriptan is DOC for acute severe migraine. It is not indicated for prophylaxis of migraine attacks.

341. Drug of choice for restless leg syndrome ?

a) Ropinirole

b) Chlorpromazine

c) Haloperidol

d) Bupripione

Correct Answer - A

Ans. is'a'i.e., Ropinirole [Ref. Clinical Pharmacol Glt 3d/e p. 482]

- Drugs of choice for Restless leg syndrome are dopamine agonists like ropinirole or promipole or rotigotine.
- Levodopa can also be used.

342. Drug used for penile erection -

a) Sildenafil

b) Apomorphine

c) Papaverine

d) All of the above

Correct Answer - D

Ans. is'd'i.e., All of the above

[Ref KDT fl/e p. 303-304 6 &/e p. 296; Katzung LLth/e p. 197)

Drugs used in erectile dysfunction

- .. Phosphodiesterase-5 inhibitors (Sildenafil, Tadalafil, Vardenafil)
- ?. Alprostadil (Prostaglandin E1)

343. All of the following are true about methanol poisoning except:

a) Fomepizole is a competitive inhibitor of aldehyde dehydrogenase

b) Toxic level of methanol is 1.25 gm/kg body weight

c) Formic acid is mainly responsible for toxicity

d) Methanol causes obscured snowy vision

Correct Answer - A

Answer- A. Fomepizole is a competitive inhibitor of aldehyde dehydrogenase

- Fomepizole is a competitive inhibitor of aldehyde dehydrogenase (Ref: Reddy 33/e p582, 31/e p387)
- Fomepizole is a specific inhibitor of alcohol dehydrogenase, not the aldehyde dehydrogenase.

344. Which enzyme is irreversibly inhibited by aspirin?

a) Lipoxygenase

b) Cyclooxygenase

c) Thromboxane synthase

d) Phospholipase

Correct Answer - B
Ans. is 'b' i.e., Cyclooxygenase

345. True statement regarding mechanism of action of sulfonylureas is:

March 2008, September 2010

- a) Increased peripheral utilization of glucose
- b) Reduce hepatic glucose output
- c) Act on SUR1 receptors on pancreatic beta cell membrane
- d) Transcription of genes regulating glucose metabolism

Correct Answer - C

Ans. C Act on SUR1 receptors on pancreatic beta cell membrane
Sulfonylureas (Tolbutamide/ chlorpropamide/Glibenclamide) bind strongly to plasma proteins. Sulfonylureas are only useful in Type II diabetes, as they act on SUR1 receptors on pancreatic beta cell membrane, stimulating endogenous release of insulin. They work best with patients over 40 years old, who have had diabetes mellitus for under ten years. They cannot be used with type I diabetes, or diabetes of pregnancy. They can be safely used with metformin or -glitazones. The primary side effect is hypoglycemia.

Meglitinides (Repaglinide/ nateglinide) help the pancreas produce insulin and are often called "short-acting secretagogues." They act on the same potassium channels as sulfonylureas, but at a different binding site. By closing the potassium channels of the pancreatic beta cells, they open the calcium channels, hence enhancing insulin secretion

Biguanides (Metformin) reduce hepatic glucose output and increase uptake of glucose by the periphery, including skeletal muscle. Although it must be used with caution in patients with impaired liver or kidney function, metformin, a biguanide, has become the most commonly used agent for type 2 diabetes in

become the most commonly used agent for type 2 diabetes in children and teenagers. Amongst common diabetic drugs, metformin is the only widely used oral drug that does not cause weight gain. Thiazolidinediones (TZDs) (rosiglitazone) bind to PPAR α , a type of nuclear regulatory protein involved in transcription of genes regulating glucose and fat metabolism. These PPARs act on Peroxisome Proliferator Responsive Elements (PPRE). The PPREs influence insulin sensitive genes, which enhance production of mRNAs of insulin dependent enzymes. The final result is better use of glucose by the cells.

346. Most potent anti-inflammatory corticosteroid ?

a) Hydrocortisone

b) Prednisolone

c) Triamcinolone

d) Dexamethasone

Correct Answer - D

Ans. is'd'i.e., Dexamethasone

347. Most salt retaining Glucocorticosteroid ?

a) Hydrocortisone

b) Prednisolone

c) Betamethasone

d) Dexamethasone

Correct Answer - A

Ans. is 'a' i.e., Hydrocortisone [Ref: KDT 7th/e p. 289]

- Among glucocorticoids, hydrocortisone (cortisol) has maximum aldosterone activity, i.e. salt retaining capacity.
- Glucocorticoid with max. mineralocorticoid activity 4 Hydrocortisone (cortisol)
- Glucocorticoid with min. glucocorticoid activity - Hydrocortisone
- Glucocorticoid with no mineralocorticoid activity 4 Betamethasone, Paramethasone, Dexamethasone, Triamcinolone.
- Mineralocorticoid with no glucocorticoid activity 4 DOCA
- Maximum mineralocorticoid activity 3 Aldosterone.
- Maximum glucocorticoid activity 4 dexamethasone, Betamethasone.

348. Which of the following has least mineralocorticoid activity-

a) Fludrocortisone

b) Dexamethasone

c) Triamcinolone

d) Betamethasone

Correct Answer - C

Ans. is 'c' i.e., Triamcinolone

o Zero mineralocorticoid activity ----> Triamcinolone, Paramethasone, Dexamethasone, Betamethasone

o Mineralocorticoid with zero glucocorticoid activity —> DOCA (Deoxycorticoisterone acetate)

o Most potent glucocorticoid - Betametasone

o Least potent glucocorticoid - Cortisone

o Maximum mineralocorticoid activity - Aldosterone

• Maximum glucocorticoid activity - Dexamethosone & Betametasone

349. Longest acting glucocorticoids is ?

a) Prednisone

b) Prednisolone

c) Cortisone

d) Dexamethasone

Correct Answer - D
Ans. is 'd' i.e., Dexamethasone

350. HbA1C is decreased most by?

a) Biguanides

b) Sulfonylureas

c) Thiazolidinediones

d) Acarbosc

Correct Answer - B

Ans. is 'b' i.e., Sulfonylureas

Effect of oral hypoglycemic in lowering blood glucose can be measured by reduction in HbA1C level

i) *Oral hypoglycemic with maximum decrease in HbA1c sulfonylureas.*

ii) *Oral hypoglycemic with minimum decrease in HbA1C Glucosidase inhibitors (Acrarbose, Migital)*

351. OCPs cause

a) Hepatic adenoma

b) Cancer Cervix

c) Hepatic vein thrombosis

d) All

Correct Answer - D

Ans. is a, b and c i.e. Hepatic adenoma; Cancer cervix; and Hepatic vein thrombosis

Lets, see the causes of Hepatic vein thrombosis (Budd-Chiari syndrome).

- Polycythemia rubra vera, Myeloproliferative syndromes, paroxysmal nocturnal hemoglobinuria
- OCP use
- Other hypercoagulable states
- Invasion of IVC by tumor, such as Renal cell or Hepatocellular Ca
- Idiopathic.

352. Bromocriptine is agonist of ?

a) Dopamine

b) Serotonine

c) Acetylcholine

d) Epinephrine

Correct Answer - A

Ans. is'a'i.e., Dopamine

Ref: KDT 7/e p.2391

- Synthetic ergot derivative.
- It is a potent dopamine agonist.
- It has greater action on D2 receptors, while at certain dopamine sites in brain it acts as a partial agonist or antagonist of D1 receptor.

353. A PTT is required for monitoring of ?

a) Streptokinase

b) Warfarin

c) Heparin

d) Tranexamic acid

Correct Answer - C

Ans. is'c'i.e., Heparin

(Ref KDT &/e p. 598, 599; Katzung Inle p. 592)

354. Which of the following drug is used in SIADH?

a) Tolvapatan

b) Desmopressin

c) Vwb factor

d) Terlipressin

Correct Answer - A

Ans. A. Tolvaptan

Tolvaptan:

- Vasopressin antagonists.
- Orally active nonpeptide selective V2 receptor antagonist.
- Metabolized by CYP3A4 – Not given to patients receiving this isoenzyme inhibitor.
- Given once daily.
- $t_{1/2}$: 6–8 hours.

Actions:

- Increases free water clearance by kidney (aquaretic).
- Corrects lower plasma Na^+ levels.

Uses:

- Useful for hyponatremia treatment.
- Hyponatremia caused by CHF, cirrhosis of liver or syndrome of inappropriate ADH secretion (SIADH).

Side effect:

- Thirst & dry mouth (most frequent).
- Fever, G.I. upset & hyperglycaemia.

355. Darbopoetin is most useful in treatment of anemia caused by ?

a) Chronic renal failure

b) Iron deficiency

c) Chemotherapy induced

d) Aplastic anemia

Correct Answer - A

Ans. is 'a' i.e., Chronic renal failure

[Ref: Clinical pharmacology 3'd/e p.482]

- Darbepoetin is hyperglycosylated modified erythropoietin for the treatment of anemia of chronic renal failure which is due to low levels of erythropoietin (kidney is the major source of erythropoietin).

356. Statins are given at night because ?

a) HMG-CoA reductase activity is maximum in midnight

b) Statins are maximally absorbed in night

c) Statins have more potency in night

d) Convenient for patient to remember

Correct Answer - A

Ans. is 'a' i.e., HMG-CoA reductase activity is maximum in midnight

(Ref: KDT 7/e p.637; Clinical pharmacology 3d/ep.939)

- Because HMG-CoA reductase activity is maximum at midnight, all statins are administered at bed time to obtain maximum effectiveness.
- However, this is not necessary for atorvastatin and rosuvastatin, which have long plasma $t_{1/2}$.

357. Which of the following is the major side effect of rifampicin?

a) Renal failure

b) Hepatotoxicity

c) Bone marrow suppression

d) Blood dyscrasias

Correct Answer - B
Ans. is 'b' i.e., Hepatotoxicity

358. One of your staff nurse had a deep prick from the needle used to inject an HIV positive individual. What is the treatment regime that should be started in her/him?

Note that drug resistance was suspected in the HIV patient.

a) 2 NRTIs for 3 months

b) 1 NRTI and 1 NtRTI for 28 days

c) 2 NRTIs + 1 protease inhibitor for 28 days

d) 2 protease inhibitor + 2 NtRTIs for 3 months

Correct Answer - C

In this scenario ARVs should be initiated as soon as possible and no later than 72 hours. It should include 2 NRTI drugs.

If drug resistance is suspected a protease inhibitor should also be added.

The duration of treatment is 28 days. If the blood sample drawn from the exposed person is HIV negative at the time of exposure, the test should be repeated at 3 and 6 months.

Ref: Park, Edition 21, Page - 328

359. Thioacetazone has cross resistance with ?

a) INH

b) Rifampicin

c) Ethionamide

d) Ethambutol

Correct Answer - C

Ans. is 'c' i.e., Ethionamide

(Ref; Essentials in tuberculosis P. 468)

- Thioacetazone has cross-resistance with ethionamide/prothionamide.
- "A cross resistance between ethionamide and thiacetazone is reported.
- Perchlozone also shows cross resistance with thiacetazone.

360. Econazole is useful for the treatment of all except

a) Tinea corporis

b) Histoplasma capsulatum

c) Cutaneous candidiasis

d) Tinea pedis

Correct Answer - B

Ans. is 'b' i.e., Histoplasma capsulatum

Econazole is used only topically for dermatophytosis and candida infection.

- It is not used systemically for deep infections.

361. Tetracycline inhibits protein synthesis by?

- a) Inhibiting initiation and causing misreading of mRNA
- b) Binding to 30 S subunit and inhibits binding of aminoacyl tRNA
- c) Inhibiting peptidyltransferase activity
- d) Inhibiting translocation

Correct Answer - B

Ans. is 'b' i.e., Binding to 30 S subunit and inhibits binding of aminoacyl tRNA

- Tetracycline interact with small ribosomal subunits, blocking access of aminoacyl- tRNA to the mRNA-ribosome complex.

362. Which is chemotherapeutic agent that must be included in treatment of ovarian carcinoma -

a) Methotrexate

b) Cyclophosphamide

c) Fluorouracil

d) Procarbazine

Correct Answer - B

Ans. is 'b' i.e., Cyclophosphamide

Drugs used for ovarian carcinoma

o *First line* -^p Cisplatin, Carboplatin, Paclitaxel, *Cyclophosphamide*, doxorubicin.

o *Second line* —> Melphalan, chlorambucil, 5-Fu, Methotrexate, Vincristine, Topotecan.

363. Which of the following drug is cell cycle phase specific?

a) Ifosfamide

b) Bleomycin

c) Cisplatin

d) Chlorambucil

Correct Answer - B

Ans. is 'b' i.e., Bleomycin

Bleomycin is specific for G2 phase.

o Alkylating agents (Ifosfamide, chlorambucil) and platinum compound (cisplatin) are cell cycle nonspecific.

364. Cardiomyopathy is caused by which monoclonal antibody?

a) Trastuzumab

b) Infliximab

c) Eterncept

d) Adalimumab

Correct Answer - A

Ans. is 'a' i.e., Trastuzumab

o Trastuzumab, a HER2/neu receptor blocker and *is* used in breast carcinoma causes dilated cardiomyopathy.

365. Immunosuppressive drugs are less effective in which type of graft rejection ?

a) Acute cellular rejection

b) Acute humoral rejection

c) Chronic rejection

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Acute humoral rejection

- Because most clinically available immunosuppressive drugs target T-cells, they are ineffective in antibody mediated rejection".

366. Which of the following blocks DNA replication with getting incorporated in DNA strand:

a) Cytarabine

b) Nalidixic acid

c) Ciprofloxacin

d) Paclitaxel

Correct Answer - A
A i.e. Cytarabine

367. A 58 year old woman has been diagnosed with locally advanced breast cancer and has been recommended for chemotherapy. She has five years history of myocardial infarction and congestive heart failure. Which antineoplastic drug should be best avoided -

a) Anthracycline

b) Alkylating agent

c) Platinum compound

d) Bisphosphonates

Correct Answer - A

Ans. is 'a' i.e., Anthracycline

o The major toxicity of anthracyclines is potentially irreversible cumulative dose related toxicity.

o They may causes arrhythmias and cardiomyopathy. Because of their carditoxicity these drugs should be avoided in the patient mentioned in the question.

368. Action of which anesthetic agent is through NMDA receptors?

a) Xenon

b) NO

c) Succinylcholine

d) Etomidate

Correct Answer - A

Ans. is 'a' i.e., Xenon

Xenon

- It exerts anaesthetic action by non competitive blockade of NMDA receptors.
- Xenon has been used as a general anesthetic.
- Xenon interacts with many different receptors and ion channels and like many theoretically

369. True about adrenaline in CPR :

a) Can be given intratracheally

b) I.V. route better than intracardiac

c) Intracardiac route better than IV

d) a and b

Correct Answer - D

A & B i.e. Can be given intra tracheally & I.V. route is better than intracardiac

Cardiopulmonary Resuscitation (CPR)

- ABCD of CPR are - Airway, Breathing, Circulation & Defibrillation
- *Central (internal jugular or subclavian) venous line is ideal for CPRQ*
- If there is no central line access, then one should attempt to establish *peripheral venous line* either in antecubital or external jugular vein.
- If intravenous cannulation is difficult, an *intraosseous infusion* can provide emergency vascular access in children.
- Some drugs are well absorbed following administration through an *endotracheal tube* (eg. *epinephrine*, atropine, vasopressin, lidocaine but not sodium bicarbonate)
- During *CPR-adrenaline converts fine fibrillation to coarse oneQ*

Basic life support - summary

	Infant (Child (>12month)	Adult
Breathing rate	20 breaths/min	20 breaths/min	10-12 breaths/min
Compression rate	>100/min	100/min	100/min
Compression	<i>Two-Three</i>	Heel of one	<i>Hands</i>

method	<i>fingers</i> or two	hand	<i>interlaced</i>
push hard & fast and allow complete recoil	thumbs encircling hands		
Compression-ventilation ratio	5:1	5:1	15 : 2 5 : 1 if tracheal tube is used
Compression depth	Approximately 1/3 - 1/2 of depth of chest		1.5-2 inches
Pulse check	Brachial/Femoral	Carotid	Carotid
Foreign body obstruction	Back blows & Chest thrusts	Hemlich maneuver	<i>Hemlich maneuver</i>

* *CPR in newborn should deliver 90 compressions and 30 ventilation (3:1) per minute.*

370. Concentration of adrenaline in CPR is ?

a) 1: 10 lakhs

b) 1 : 1 lakhs

c) 1 : 10,000

d) 1 : 1000

Correct Answer - D

Ans. is 'd' i.e., 1:1000 [*Ref Fundamentals of anesthesia 5th Ve*
p. 663-665]

- Epinephrine (1 : 1000 concentration) is the drug of choice in CPR.

371. DOC for smoking cessation?

a) Acamprosate

b) Varenicline

c) Thalidomide

d) Tryptophan

Correct Answer - B

Ans. B. Varenicline (If Bupropion is not an option)

Anti-smoking drugs:

- Bupropion (along with Varenicline & Nicotine replacement therapy) is a USFDA approved first-line agent for pharmacotherapy in smoking cessation.

Varenicline:

- Effective agent for smoking cessation.
- Synthetic drug with partial agonist action at $\alpha 4\beta 2$ nicotinic receptors.
- Has antagonist properties persisting due to long half-life & high receptor affinity.
- Hence, prevents stimulant effect of nicotine at presynaptic $\alpha 4\beta 2$ receptors \rightarrow results in dopamine release.

372. Drug used for cessation of smoking ?

a) Theophylline

b) Biclutamide

c) Salmeterol

d) Varenicline

Correct Answer - D

Ans. is 'd' i.e., Varenicline [Ref Harrison 17Ve ch. 390]

- Varenicline is a direct acting nicotine agonist with selective action on $\alpha_4 P_2$ isoform of N. receptors. It is an antismoking drug.

373. Drug with no dependence or addiction ?

a) Morphine

b) Amphetamines

c) Benzodiazepines

d) LSD

Correct Answer - D

Ans. is 'd' i.e., LSD

[R4 Niraj Ahuja &/e p. 37)

374. Which of the following drug causes hirsutism?

a) Phenytoin

b) Valproate

c) Carbamazepine

d) Phenobarbitone

Correct Answer - A
Ans. is 'a' i.e., Phenytoin

375. Carbimazole is associated with all except

:

a) >Choanal atresia

b) >Cleft lip and cleft palate

c) >Scalp defect

d) >Neck swelling

Correct Answer - B

Cleft lip and palate [*Brigg's and Freeman Drugs in pregnancy and lactation 6th/e p 888*]

Congenital malformations associated with carbimazole

- Scalp or patchy hair defect (*aplasia cutis congenita*)
 - Choanal atresia
 - Sacral pilonidal sinus
 - Tracheoesophageal fistula
 - Fetal goitre
 - Hypoplastic or absent phalanges (*low set fifth finger*)
 - Psychomotor delay
 - Minor facial anomaly (*Flat face, low set ears, upper lip retraction*)
- Pregnancy and thyroid disease
- Thyrotoxicosis occurs in about 2% of pregnancies and is caused most frequently by *Grave's disease*.
 - Antithyroid drugs are the *t/t of choice* ; radioactive iodine is clearly contraindicated in pregnancy.
 - Historically, *propylthiouracil* has been preferred over methimazole because transplacental spread was thought to be lower, however, it has been proved that propylthiouracil and methimazole *cross the placenta equally*.
 - As clearance of these drugs is very slow in the fetus, they tend to

accumulate with the risk of fetal hypothyroidism and goitrogenesis.

- Current data suggest that *either may be used safely* in the pregnant patients.
- The antithyroid drug dose should be *minimal* in order to keep the serum free thyroxine index in the *upper half* of the normal range.
- As pregnancy progresses, graves disease *often improves* and it is not uncommon for patients either to be on very low doses or off antithyroid drugs completely by the end of pregnancy.
- Propylthiouracil is the *drug of choice* in nursing women since very *small amounts of the drug appear in the breast milk*, and do not appear to affect thyroid function in the suckling baby.

Common teratogenic drugs

Isotretinoin

- Craniofacial abnormality
 - Cleft lip and palate
 - Microcephaly
- Cardiovascular anomaly
 - ASD
- C.N.S. anomaly
 - Neural tube defect
 - Microcephaly

Lithium

- Ebstein anomaly
- Fetal goitre

Alcohol

- *Fetal alcohol syndrome Fetal microcephaly Maxillary hypoplasia Mental retardation Cardiac (ASD, PDA) Hyperkinetic child Growth retardation Small eye*

Methanol

- Craniofacial abnormality
 - Microcephaly
 - Maxillary hypoplasia
- Mental retardation/growth retardation

Phenytoin

- *Fetal hydantoin syndrome Microcephaly Cleft lip and palate Hypoplastic phalanges Gum hyperplasia*

Warfarin

varian

- Contradil syndrome
 - *Croniofacial abnormality - Chondrodysplasia punctata*
- Barbiturates
- Congenital heart disease
- Cleft lip and palate
- Neonatal dependence
- Respiratory depression
- Stilbesterol
- Vagina[carcinoma
- Tetracycline
- Discoloured teeth
- Bone growth retardation
- Thalidomide
- Phocornelia
- Valproate
- Neural tube defects
- Indomethacin
- Premature closure of ductus arteriosus

376. Injury is defined by IPC ?

a) 319

b) 44

c) 321

d) 322

Correct Answer - B

Ans. is 'b' i.e. 44 [Ref Parikh 6thie p. 3.68]

- Medically, injury is defined as any discontinuity or breach in the anatomy of body.
- Legally, injury is defined as any harm caused illegally to a person, i.e. to his mind, body, reputation or property (Sec 44 IPC).

377. Punishment for culpable homicide not amounting to murder is dealt under:
TN 11

a) Sec. 299 IPC

b) Sec. 300 IPC

c) Sec. 302 IPC

d) Sec. 304 IPC

Correct Answer - D
Ans. Sec. 304 IPC

378. In camera trial of a rape case hearing is done under ?

a) 376 IPC

b) 327 CrPC

c) 53 CrPC

d) 375 IPC

Correct Answer - B

Ans. is 'b' i.e. 327 CrPC [Ref Parikh 6th/e p. 5.28-5.32]

- S. 327 CrPC (2) -The inquiry into and trial of rape or an offence under sec.
- 376 IPC shall be conducted in camera and it is not lawful for any person to print or publish any matter in relation to such proceedings except with the permission of court.

379. IPC 312 & 315 are associated with ?

a) Kidnapping & abduction

b) Attention & abetment to suicide

c) Causing grievous hurt

d) Voluntary miscarriage

Correct Answer - D

Ans. is 'd' i.e., Voluntary miscarriage

380. IPC for death after abortion is ?

a) 312

b) 314

c) 313

d) 304

Correct Answer - B

Ans. is 'b' i.e., 314 [Ref *The Essentials of forensic Medicine and toxicology 32nd/e chapter 17 p. 380*]

- 314 IPC : Death of patient caused by miscarriage (10 years of imprisonment ± fine).

381.

A person is caught for destroying a document which would have been used as an evidence in the court. Which section of IPC deals with such cases?

a) Sec IPC 201

b) Sec IPC 202

c) Sec IPC 203

d) Sec IPC 204

Correct Answer - D

Sec **IPC 204** punishes a person in case he destroys or obliterates any document which he may be required to produce as an evidence in a court or in a proceeding lawfully held before a public servant as such.

- **Sec 201 IPC:** Deals with causing disappearance of evidence of offence, or giving false information to screen offenders
- **Sec 203 IPC:** This section makes giving of false information in respect of commission of an offence punishable

Ref: Textbook Of Forensic Medicine And Toxicology: Principles And Practice By Vij 4th edn page 465.

382. Sec 141 of Indian evidence act, 1834 is for ?

a) Admissibility of electronic records

b) Question by party to his own witness

c) Leading question

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Leading question

- Section 141 of IEA is for Leading questions i.e. any question suggesting the answer which the person putting it wishes or expects to receive, is called a leading question.

Other options

- Admissibility of electronic records - 65 B of IEA
- Question by party to his own witness - 154 of IEA

383. IPC 141 is for ?

a) Causing hurt by poison

b) Unlawful assembly

c) Abetment of suicide

d) Abandoning a child

Correct Answer - B

Ans. is 'b' i.e., Unlawful assembly

- Section 141 of IPC is for Unlawful assembly (An assembly of five or more persons)
- Section 142 - Being a member of unlawful assembly
- Section 143 - Punishment for unlawful assembly

384. IPC code related to age for valid consent is ?

a) 85

b) 86

c) 87

d) 88

Correct Answer - C

Ans. is 'c' i.e., 87

- Section 87 of the IPC says that a person above 18 years of age can give valid consent and Section 89 of the IPC says that a child under 12 years of age cannot give a valid consent.

385. Penal code for death sentence is ?

a) 300

b) 302

c) 304

d) 306

Correct Answer - A

Ans. is 'a' i.e., 300 [Ref Parikh 6th le p. 3.68]

386. Death of unborn child by an act of parents comes under IPC ?

a) 302

b) 316

c) 300

d) 314

Correct Answer - B

Ans. is 'b' i.e., 316

- Death of quick unborn child by act amounting to culpable homicide (10 years imprisonment + fine) - *316 IPC.*

387. False about informed consent document is ?

- a) Obtained in presence of two witnesses
- b) Not need to be signed by doctor
- c) Obtained before the actual doing of procedure
- d) Minimum age to give consent is 12 years

Correct Answer - B

Ans. is 'b' i.e., Not need to be signed by doctor [Ref Essentials of forensic medicine Narayan Reddy 30/e p. 175]

Legally valid consent for medical examination and treatment is one :?

1. Given by person himself, if above 12 years, conscious and mentally sound (sane).
2. Or given by parent, guardian, or friend, if patient is less than 12 years or is unconscious or is insane.
3. Is written informed consent, i.e. is given in writing after knowing the nature of condition of procedure, its alternatives and its complications. All disclosures should be done in a language that the patient best understand.
4. Given in presence of two witnesses.
5. Given before the actual doing of procedure.
6. Given freely, voluntarily and directly; without fear, force or fraud.
7. Signed by doctor, patient (or guardian) and witnesses.

388. A death sentence in India can be awarded by which of the following authorities before it is confirmed by the High Court?

a) First class magistrate

b) Second class magistrate

c) Sessions court magistrate

d) Chief judicial magistrate

Correct Answer - C

The Court of the Sessions Judge is the highest criminal court in the district. It is presided over by the District Judge, who is therefore called the District and Sessions Judge. In the Sessions Court, criminal cases of murder, dacoity and robbery are tried.

Death sentence and life imprisonment can be awarded by the Sessions Court.

All death sentences, irrespective of appeals made or not, have to be confirmed by the High Court.

389. Privileged communication is made between:

a) Patient and Doctor

b) Doctor and court of Law

c) Doctor and Relative

d) Doctor and concerned authority

Correct Answer - D

Privileged communication is a statement made bonafide upon any subject matter by a doctor to the concerned authority, due to his duty to protect the interest of the community or the state.

It should be made to the person having interest in it or in reference of which he has a duty.

Ref: Parikh' Textbook of Medical Jurisprudence Forensic Medicine and Toxicology, 5th Edition, Page 216 and 6th Edition, Page 1.34;
The Essentials of Forensic Medicine and Toxicology By Dr K S Narayan Reddy, 27th Edition, Pages 28-9

390. In embalmingr solution is given through ?

a) Veins

b) Arteries

c) Lymphatics

d) none of above

Correct Answer - B

Emblamings may be arterial emblaming and cavity emblaming.

391. Condition suitable for adipocere formation ?

a) Cold and dry environment

b) Warm and dry environment

c) Warm and damp environment

d) Cold and damp environment

Correct Answer - C

Ans. is 'c' i.e., Warm and damp environment

Adipocere

- It is also called saponification
- It is a modification of putrefaction
- In this, the fatty tissues of the body change into substance known as adipocere.

It is most commonly seen in the body immersed in water or in damp, warm environment.

- Moisture present, warmth present, air present → Putrefaction.
- Moisture present, warmth present, air absent, i.e. *warm humid climate* → Adipocere formation (saponification).
- Moisture absent, warmth present, air present, i.e. *hot dry climate* → Mummification.

392. Natural stiffening of muscles after death is known as ?

a) Algor mortis

b) Rigor mortis

c) Postmortem lividity

d) Cadaveric spasm

Correct Answer - B

Ans. is 'b' i.e. Rigor mortis [Ref Reddy03 !hie p. 146, 147]

- Rigor mortis is natural stiffening after death as it occurs in all death.
- Cadeveric spasm does not occur in all deaths.

393. Inconclusive autopsy is known as ?

- a) No cause of death is found on gross as well as histopathological examination
- b) Cause is apparent on gross examination but not on histopathological examination
- c) Gross finding are minimal
- d) Cause is apparent on gross examination but not found because of constrains on the part of doctor

Correct Answer - A

Ans. is 'a' i.e., No cause of death is found on gross as well as histopathological examination [Ref Dr Anil Aggrawal p.124]

Types of autopsy

1. Normal autopsy - cause is apparent from gross examination
2. Defective autopsy - cause was ascertainable, but was not ascertained due to constrains on the part of doctor, hospital, facilities etc
3. Obscure autopsy - gross findings are minimal, indecisive or obscure, as in adrenal insufficiency, anesthetic overdose, myxedema, rare plant poisons, thyrotoxicosis etc.
4. subsequent examination like histology, microbiology, toxicology or serology reveal the cause.
5. Negative autopsy / inconclusive autopsy - Cause is not clear from gross as well as subsequent examinations.

394. Incision for medicolegal autopsy include all except?

a) 'T' shaped

b) 'Y' shaped

c) Modified 'I' shaped

d) Modified 'Y' shaped

Correct Answer - C

Ans. is 'c' i.e., Modified 'I' shaped [Ref: Reddy 30thie p. 96-98]

Types of primary skin incisions are :?

1. I-shaped incision: Extending from the chin straight down to symphysis, passing to the side the umbilicus.
2. Y-shaped incision: Begins close to acromion process and then extends down below the breast across to xiphoid process from where it is carried downwards to the symphysis pubis.
3. Modified Y-shaped incision: Incision is made from suprasternal notch to symphysis pubis.
4. The incision extends from suprasternal notch over the clavicle to its center on both sides and then passes upwards over the neck behind the ear.

395. Discoloration after death is first seen in -

a) Dependent parts

b) Scalp

c) Face

d) Arms

Correct Answer - A

Ans. is 'a' i.e., Dependent parts [Ref Reddy 30th/e p.141,142]

It is seen on dependent parts of the body, therefore site depends upon position of body after death :

- In supine : On posterior dependent portion of body. But not seen on back of shoulder blades, buttocks and back of calves due to contact flattening, i.e.
- toneless capillaries are compressed and occluded by weight and pressure of body.
- In hanging : Dependent lower half of both lower limb and upper limb (i.e. lower half of leg with feet and lower half of forearm with hands), and external genitalia.
- In drowning: Head and upper half of body as head being the heaviest part becomes the dependent part.
- It does not develop in running water due to constantly changing position of the body.

396. Post mortem lividity is not seen in ?

a) Drowning in well

b) Drowning in a fast flowing river

c) Postmortem submersion

d) Drowning in chlorinated swimming pool

Correct Answer - B

Ans. is 'b' i.e., Drowning in a fast flowing river [Ref Parikh 6th/e p.3.10]

397. Specimens of toxicological studies are preserved in ?

a) 10% of formaldehyde

b) Alcohol

c) Supersaturated solution of common salt

d) Rectified spirit

Correct Answer - C

Ans. is 'c' i.e., Supersaturated solution of common salt [Ref Parikh 6¹⁵/e p. 2.62; Sumit Seth's 2¹⁵/e p.158]

- Most common preservative for toxicological specimen is saturated solution of sodium chloride (NaCl).

398. Preservative used for toxicological specimen :

a) 20% formalin

b) Saturated sodium chloride

c) 20% alcohol

d) 10% alcohol

Correct Answer - B
B i.e. Saturated salt solution

399. Trotter and Glesser formula is used for ?

a) Cephalic index

b) Stature

c) Race

d) Age

Correct Answer - B

Ans. is 'b' i.e., Stature

- Length of long bones is measured by osteometric board (Hepburn osteometric board modified by Trevor), not tapes or calipers as it is not accurate.
- It is then multiplied by a factor to obtain the stature according to Pearson's formula and Trotter's and Glesser's formula.

400. Which tooth is first to erupt in lower jaw is?

a) Central incisor

b) Lateral incisor

c) Canine

d) Molar

Correct Answer - A

Ans. is 'a' i.e., Central incisor [Ref: Reddy 30' p. 60, 61]

- First temporary tooth to appear (in primary dentition) is lower central incisors and last temporary tooth to erupt is 2nd molar.
- The sequence of eruption is lower central incisor > upper central incisor > upper lateral incisor > lower lateral incisor > 1st molar > Canine > 2nd molar.
- Therefore eruption of temporary teeth is completed by eruption of 2nd molar at 25 months (2 years).

401. Female pelvis can be differentiated from male pelvis by?

a) Circular brim

b) Less movable coccyx

c) Smaller outlet

d) Inverted ischial tuberosity

Correct Answer - A

Ans. is 'a' i.e., Circular brim [Ref Reddy 30"/e p. 54-56]

- Pelvic brim in males is heart-shaped. In females, it is circular or elliptical and more spacious.

402. Sternal index is to ?

a) Age determination

b) Sex determination

c) Species identification

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Sex determination

- Sternal Index is used for sex determination.
- Sternal Index (SI) = $(ML/BL) \times 100$
- ML - Length of manubrium
- BL - Length of the body (mesosternum).

403. Which of the following is suggestive of non-accidental injury in pediatric age group ?

a) Pond fracture

b) Felanga

c) Degloving injury

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Felanga [Ref: Krishan Vij 3rd ed p. 293]

- Falanga is beating of soles with blunt object. It is the most common type of torture. It can cause immediate & long term consequences, even disability.
- Degloving injury caused by wheel of vehicle or rolling over the victim. Children are often involved.
- Pond fracture (indented fracture) : In children, because of elasticity of skull, there results in bending of bones and no actual fracture of skull.

404. Scalp laceration may resemble -

a) Incised wound

b) Abrasion

c) Gunshot wound

d) Contusion

Correct Answer - A

Ans. is 'a' i.e., Incised wound [Ref: Reddy 30th le p. 178]

- Incised like or incised looking laceration: blunt force on areas where the skin is close to bone, and the subcutaneous tissues are scanty, may produce a wound which by linear splitting of the tissue, may look like incised wound. E.g. shin, scalp, eyebrows, cheek (zygomatic bone), lower jaw, iliac crest, knee & perineum.

405. Moist burn refers to ?

a) Simple burns

b) Scalds

c) Electric burns

d) Thermal burns

Correct Answer - B

Ans. is 'b' i.e., Scalds [Ref: Parikh 6th le p. 4.151]

- Dry heat (e.g. flame) Simple burns (or burns).
- Moist heat → Scalds.

406. Destructive power of bullet is determined by ?

a) Weight of bullet

b) Shape of bullet

c) Size of bullet

d) Velocity of bullet

Correct Answer - A:D

Ans. is 'd' i.e., Velocity of bullet > 'a' i.e., Weight of bullet [Ref: Parikh 6th/e p. 4.30, Reddy 29th/e p. 194]

- Tissue damage (or destructive power of bullet) is dependent on striking (kinetic) energy of bullet, which is proportional to its mass and square of velocity ($KE = 1/2 mv^2$).
- So modern bullets are designed to have smaller mass allowing transportation of large amount of ammunition and high velocity, as velocity is more important determinant in destructive power of bullet.

407. Test performed to compare weight of lung to body weight is ?

a) Ploucquet test

b) Fodere's test

c) Gettler's test

d) Raygat's test

Correct Answer - A

Ans. is 'a' i.e., Ploucquet's Test [Ref S.K. Singhal %Pie p. 271]

- Ploucquet's test : Weight of lung is measured in relation to body weight. Before birth weight of lung is $1/70$ of body weight and after respiration it becomes $1/35$ of body weight due to increased blood flow in lung beds.

408. Hydrostatic test is done in ?

a) Dry drowning

b) Wet drowning

c) Near drowning

d) Infanticide

Correct Answer - D

Ans. is 'd' i.e., Infanticide [Ref: Parikh 6th /e p. 5.75, 5.76; S.K. Parikh 4th/e p. 268]

- Hydrostatic test (lung float test or docimasia), is used in determining whether lungs have undergone respiration.
- It has been employed in cases of suspected infanticide to help determine whether or not an infant was stillborn.
- In the test, lungs that float in water are thought to have been aerated, while those that sink are presumed to indicate an absence of air.

409. Suppositious child is ?

- a) Child born out of wedlock
- b) Child fictitiously claimed by a woman
- c) Second born of a twin pregnancy
- d) None

Correct Answer - B

Ans. is 'b' i.e., Child fictitiously claimed by a woman [Ref Parikh 6thVe p. 5.26-5.27]

Suppositious child : Child presented by the mother to have been delivered by her, though she has not delivered, i.e. fictitious claim of child.

410. Age to define statutory rape is ?

a) Less than 16 years

b) Less than 17 years

c) Less than 18 years

d) Less than 20 years

Correct Answer - C

Ans. is 'c' i.e., Less than 18 years [Ref S.K. Singhal 6th le p. 278,279]

- After 3 february 2013, age to define rape has been changed.
- The age of consent in India has been increased to 18 years, which means any sexual activity irrespective of presence of consent with a woman below the age of 18 will constitute statutory rape.

411. Sexual gratification of a women is obtained by another woman is called ?

a) Tribadism

b) Bestiality

c) Fellatio

d) Cunnilingus

Correct Answer - A

Ans. is 'a' i.e., Tribadism [Ref Parikh 6th/e p. 5.50, 5.52; Reddy 31st/e p. 401; Rao 2nd/e p. 373-74; Rajes Bardale 1st/e p. 325-26]

- **Tribadism (Lesbianism or female homosexuality) :**
Sexual gratification of a women is obtained by another woman by kissing, body contact, manipulation of breast and genitalia.
- Active partner is called **dyke or butch** and the passive agent is called femme. This is not an offence in India.

412. Voyeurism is ?

a) Sexual gratification by watching the act of sexual intercourse

b) Use of such objects for sexual gratification

c) Sexual gratification is by self pain

d) Sexual gratification by rubbing private part

Correct Answer - A

Ans. is 'a' i.e., Sexual gratification by watching the act of sexual intercourse [Ref Reddy 30th/e p. 395]

Voyeurism (Scopophilia, Peeping tom) : Sexual gratification is obtained by looking at the sexual organs of other persons, watching the act of sexual intercourse, or witnessing undressing by a woman.

413. Sexual pleasure obtained by touching others is known as?

a) Frotteurism

b) Exhibitionism

c) Voyeurism

d) Eonism

Correct Answer - A

Ans. is 'a' i.e., Frotteurism [Ref Reddy Nele p. 395]

- **Frotteurism** : is contact with another person in order to obtain sexual gratification.
- Sexual gratification by rubbing private parts against a female body in crowd. It is punishable under Section 290 I.P. C., with fine upto Rs 200.

414. Catamite is related to:

a) Rape

b) Bigamy

c) Sodomy

d) Kleptomania

Correct Answer - C

Sodomy: is defined as anal intercourse performed by a male with another male/female who may be a child /adult,with or without consent and by force.Also known as **BUGGERY**. It is laid under Sec 377 I.P.C.the offender is punished with imprisonment for a term of 10 years with fine.

Catamite: A passive agent of *sodomy* when happens to he a young boy is *catamite*. **PASSIVE AGENT** is a sodomist male or female who offers the anus and plays a passive role.

Ref: The Essential's of forensic Medicine and toxicology, K.S Narayana Reddy, 13th Edition, Page 389.

415. For MTP consent is taken from

a) Wife only

b) Husband only

c) Both

d) Neither

Correct Answer - A

A i.e. Wife only

- MTP Act 1971 allows registered medical practitioner with certified experience (by CMO, of assisting 25 MTP cases) to perform abortion in a licenced setup (Government or private). The consent of only women is required before conducting abortion; written consent of guardian is required if the woman is a minor or mentally ill. *Consent of husband is not necessary*.

- MTP Act 1971 *does not allow abortion on poor socioeconomic grounds and if only husband (not mother) is willing*. Rape; contraceptive failure, use of cytotoxic drugs, risk of delivering seriously handicapped baby, and injury to physical & mental health of mother are valid grounds for MTP.

416. Takayam test is used for ?

a) To know the nature of stain

b) To know the species

c) For blood grouping

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., To know the nature of stain [Ref Parikh 6th/e p. 7.15-7.18; S.K. Singhal 4th/e p. 158-162]

- It is a microchemical test to know the nature of stain.
- **Microchemical tests** :These tests are based on property of haem part of hemoglobin to form characteristic coloured crystals.
 1. **Teichmann's haemin crystal test**
 2. **Takayama hemochromogen crystal test**
 3. **Luminal spray test : It is especially useful in old obscure blood stains**

417. Choline in seminal fluid is detected by ?

a) Barberio test

b) Florence test

c) ELISA

d) Agglutination inhibition

Correct Answer - B

Ans. is 'b' i.e., Florence test [Ref Parikh 7th le p. 7.26, 7.27; S.K. Singhal 4th le p. 162-164]

Microchemical tests for semen analysis

- Florence test → Brown crystals of choline periodide
- Barberio's test → Yellow coloured crystals of spermin picrate.

418. Spermin in semen is detected by ?

a) Barberio test

b) Florence

c) ELISA

d) Agglutination inhibition

Correct Answer - A

Ans. is 'a' i.e., Barberio test [Ref: Parikh 7th/e p. 7.26, 7.27; S.K. Singhal 4thie p. 162-164]

Microchemical tests for seminal stain analysis:

- .. Barberio's test → Yellow coloured crystals of spermin picrate.
- ?. Florence test Brown crystals of choline periodide.

419. Test to identify seminal fluid in absence of sperm in it, is -

a) Florence test

b) Luminal test

c) Microscopic examination

d) Acid phosphatase

Correct Answer - D

Ans. is 'd' i.e., Acid phosphatase [Ref Parikh 7^h/e p. 7.26, 7.27; S.K. Singhal 4th/e p. 162-164]

- The most common presumptive test to identify seminal fluid relies on the identification of acid phosphatase enzyme.

420. Chalky white deposits in teeth are seen with which acid?

a) Carbolic acid

b) Oxalic acid

c) Nitric acid

d) Sulphuric acid

Correct Answer - D

Ans. is 'd' i.e. Sulphuric acid [Ref Concise Textbook Of Forensic Medicine & Toxicology p. 238]

- In sulphuric acid poisoning, pharyngeal pain is the most common presenting symptom. Due to its strong corrosive action there is corrosion of GI tract, lips, mouth, throat, esophagus and stomach. T
- There is brown discoloration of stomach with erosion. There are highest chances of perforation of stomach with H_2SO_4 , amongs all mineral acids.
- Teeth become chalky white in color as their polish is gone.

421. Muttering delirium is seen with:
NEET 13

a) Ricinus

b) Dhatura

c) Cocaine

d) Aconite

Correct Answer - B
Ans. Dhatura

422. Abdominal colic pain is a feature of which poisoning ?

a) Opium addiction

b) Arsenic poisoning

c) Mercuric poisoning

d) Lead poisoning

Correct Answer - D

Ans. is 'd' i.e., Lead poisoning [Ref Parikh 6th/e p. 9.17-9.20; Reddy 30th/e p. 497-498]

- Colic (abdominal pain) and constipation (dry belly ache) is a late manifestation of chronic lead poisoning.
- **Other features of chronic lead poisoning**
- Facial pallor (earliest and most consistent feature).
- Anemia with punctate basophilia (basophilic stippling) is also an early feature.
- Burtonian line (stippled blue line) is seen on the gums on upper jaw.
- Encephalopathy
- Paralysis in the form of wrist and foot drop is a late manifestation, called lead palsy and is due to peripheral neuropathy. It occurs only in less than **10%** of cases.
- Reno^vascular manifestations (nephropathy) : Hypertension, arteriolar degeneration and arteriosclerotic nephritismay occur. Rarely, lead poisoning may cause proximal tubular necrosis.
- Other features include optic atrophy, CVS and reproductive anomalies.

423. Antidote of choice for Belladonna poisoning ?

a) Disulfiram

b) Atropine

c) Physostigmine

d) Flumazaniil

Correct Answer - C

Ans. is 'c' i.e., Physostigmine

- Antidote of choice for belladonna (atropa belladonna or atropine) poisoning - Physostigmine.

424. Most common symptom of thallium poisoning ?

a) Neuropathy

b) Abdominal pain

c) Headache

d) Visual disturbances

Correct Answer - B

Ans. is 'B' i.e., Abdominal pain

- "Most common symptom of acute thallium poisoning is abdominal pain with nausea & vomiting and diarrhea or constipation".

425. Principal of using Robertson cooked meat broth:

a) Meat kills other bacteria

b) Meat is utilized by anaerobes

c) Content of meat extract utilize O₂

d) All of the above

Correct Answer - C

Ans. is. 'c' i. e., Content of meat extract utilize O₂

426. Example of selective medium is:

a) LJ medium

b) Blood agar

c) Selenite F broth

d) Chocolate agar

Correct Answer - A
Ans. is. 'a' i. e., LJ medium

427. Inspissation is ?

a) Heating at 160°C for 15 minutes

b) Heating at 160°C for 30 seconds

c) Heating at 80°C for 30 minutes

d) Heating at 120°C for 15 seconds

Correct Answer - C

Ans. is 'c' i.e., Heating at 80°C for 30 minutes [Ref Handbook of media for clinical microbiology p. 495]

Inspissation: It is heat exposure method that is employed with high protein material, like *egg containing media*, that cannot withstand the high temperature used in autoclaving.

- The medium is exposed to 80°C for 30 minutes for three successive days in inspissator. It can be used for LI medium and loeffler serum slop.

428. Fletcher's medium containing Rabbit serum is used for ?

a) Streptococcus

b) Bacillus anthracis

c) Leptospira

d) Borrelia

Correct Answer - C

Ans. is 'c' i.e., Leptospira [Ref Essentials of clinical microbiology p. 786]

- Media for the culture of leptospirae usually contain either rabbit serum (Fletcher medium, Stuart broth) or bovine serum albumin (EMJH medium plus long-chain fatty acids and vitamins (B1 & B12)).

429. Culture medium used for leptospira for laboratory diagnosis:

a) Skirrows medium

b) EMJH medium

c) BYCE agar

d) Pike's medium

Correct Answer - B
Ans (b) EMJH medium

430. Lipopolysaccharide of gram negative bacteria ?

a) Hapten

b) Heterophile antibody

c) Stimulator for B lymphocytes

d) Induce cell mediated immunity

Correct Answer - C

Ans. is 'c' i.e., Stimulator for B lymphocytes

The biological activity of endotoxin is associated with lipopolysaccharide (LPS).

i) Toxicity is associated with lipid component (Lipid A).

ii) Immunogenicity is associated with polysaccharide component.

The cell wall antigen (O antigen) of Gram-negative bacteria are components of LPS.

LPS elicits a variety of inflammatory responses and activates alternate complement pathway.

The susceptibility to infections induced by Gram-negative bacteria is largely determined by innate immune response to bacterial cell wall lipopolysaccharide (LPS).

The stimulation of B-cells by LPS enhances their antigen-presenting capacity and is accompanied by B-cell proliferation and secretion of large quantities of LPS neutralizing antibodies.

431. Action of lysozymes on gram negative bacteria ?

- a) Faster than gram positive bacteria
- b) Has no action
- c) Depends on integrity of outer membrane
- d) Cause resistance to antibiotic

Correct Answer - C

Ans. is 'c' i.e., Depends on integrity of outer membrane [Ref *Fundamentals of food microbiology 6th/e p. 496*]

- **Lysozyme is an acetyl - mura midase** which cleaves bond between N-acetylmuramic acid and N-acetyl - D-glucosamine residues in peptidoglycan of all wall.
- Gram-positive bacteria are sensitive to action of lysozymes -> lysozymes cause lysis of gram-positive bacteria easily.
- Gram-negative bacteria are less susceptible and are protected by outer membrane, which is the outer most covering in gram negative bacteria (outside the cell wall) and has barrier function.
- However, lysozyme can cleave the peptidoglycan layer of Gram-negative bacteria if this layer is exposed by membrane attack complex (MAC or C5-9) of complement which destroys outer membrane.
- (Note : gram positive bacteria do not have outer membrane thus lysozymes directly act on cell membrane).

432. High level disinfectant are used for:

a) Stethoscopes

b) Electronic thermometers

c) Bronchoscopes

d) Surgical instruments

Correct Answer - C

Ans. is. 'c' i. e., Bronchoscopes

433. Capsule of Bacillus anthracis is formed of:

a) Polysaccharide

b) Lipopolysaccharide

c) Polypeptide

d) Long chain fatty acids

Correct Answer - C
Ans. is. 'c' i. e. Polypeptide

434. Cell wall of bacillus anthracis is composed of -

a) Peptidoglycan

b) Polysaccharide

c) Lipopolysaccharide

d) Polypeptide

Correct Answer - A

Ans. is 'a' i.e., Peptidoglycan [Ref Ananthnarayan 9th/e p. 13]

- The layer just outside the bacterial cytoplasmic membrane is the peptidoglycan layer or cell wall.
- It is present in both gram-positive and gram negative organisms.
- The peptidoglycan layer of gram positive bacteria is thick and contain teichoic acid, while in gram negative bacteria it is thin and does not contain teichoic acid.
- In gram negative organisms, there is outer cell membrane just outside the thin peptidoglycan layer (cell wall)
- Unique feature of gram negative bacteria dissolution of this layer by ethanol is responsible for gram negativity on gram staining.
- Chemically, cell wall is composed of mucopeptide (peptidoglycan or murein) scaffolding formed by N acetyl glucosamine and N acetyl muramic acid molecules alternating in chains, which are cross linked by peptide chains.

435. Throat swab is kept in ?

a) Plastic jar

b) Test tube

c) Petri dish

d) None

Correct Answer - B

Ans. is 'b' i.e., Test tube [Ref Textbook of experiment in microbiology p. 49]

- A throat - swab consists of an orange - stick with cotton wool wrapped round one end and placed in a test tube passing through a plug of non-absorbent cotton wool, with the free end of the stick protruding.
- The tubes with the swabs are kept in oven for sterilization.

436. Spore forming anaerobic gram positive bacilli ?

a) Bacillus Anthracis

b) Clostridia

c) Corynebacterium

d) Peptostreptococcus

Correct Answer - B

Ans. is 'b' i.e., Clostridia [Ref Ananthanarayan 9thie p. 245, 254]

There are two medically important spore forming bacteria. Both of them are 'gram positive' `bacilli' :-

.. Aerobic : Bacillus

?. Anaerobic (obligate anaerobes) : Clostridia.

437. Which of following clostridia is non-invasive:

a) Clostridium novyi

b) Clostridium botulinum

c) Clostridium perfringens

d) Clostridium tetani

Correct Answer - B

Ans. is. 'b' i. e. Clostridium botulinum

438. True about *C. perfringens* are all except:

a) Invasive as well as toxigenic

b) Alpha toxin is detected by Naegler's reaction

c) Beta toxin is most important in gas gangrene

d) Theta toxin is perfringolysin

Correct Answer - C

Ans. is. 'c' i. e. Beta toxin is most important in gas gangrene

439. True about streptococcus pyogenes are all except:

a) Causes only localized infection

b) Rheumatic fever is non-supporative complications

c) Erythrogenic toxin causes scarlet fever

d) Glomerulonephritis is due to antigenic cross-reactivity

Correct Answer - A
Causes only localized infection

440. Major criteria for rheumatic fever - AJE

a) Carditis

b) Arthralgia

c) Erythema marginatum

d) Subcutaneous nodule

Correct Answer - B
Ans. is 'b' i.e., Arthralgia

441. Most common symptom of tetanus is:

a) Tonic-clonic seizures

b) Hemiplegia

c) Lock-jaw

d) Opisthotonus

Correct Answer - C
Ans. is. 'c' i. e. Lock-jaw

442. Culture medium used for streptococcus pneumoniae

a) Human blood agar

b) Sheep blood agar

c) MacConkey's agar

d) Deoxycholate agar

Correct Answer - B
Sheep blood agar

443. Most dangerous type of diphtheria:

a) Facial

b) Laryngeal

c) Nasal

d) Cutaneous

Correct Answer - B
Ans. is. 'b' i. e. Laryngeal

444. True about mycobacterium leprae ?

- a) Transmitted by droplet infection
- b) Phenolic glycolipid (PGL) is virulence factor
- c) Generation time 12-13 days
- d) All are true

Correct Answer - D

**Ans. is 'd' i.e., All are true [Ref Greenwood le p. 210;
Ananthnarayan 9thie p. 364-368]**

- Generation time of M. leprae is 12-13 days.
- 'Phenolic glycolipid- I (PGL-1)' acts as a virulence factor.
- **Modes of transmission are :?**
- Droplet infection : Most common mode.
- Contact transmission : Either direct (skin to skin) or indirect (contact with contaminated soil or fomite).
- Other : Breast milk from lepromatous leprosy, by insect vector, by tattooing needles.

445. Capsule of pneumococcus is:

a) Polypeptide

b) Polysaccharide

c) Lipopolysaccharide

d) Not a Virulence factor

Correct Answer - B
Polysaccharide

446. Which of the following is late lactose fermenter ?

a) E coli

b) Klebsiella

c) Salmonella

d) Shigella sonnei

Correct Answer - D

Ans. is 'd' i.e., Shigella sonnei [Ref Ananthanarayan 9thie p. 274]

- **Lactose fermenters produce pink/bright red colonies on MacConkey's agar** , while lactose non-fermenters **produce** pale colonies :
- Lactose fermenters (rapid) : These are **Coliforms**, e.g. **Escherichia**, Klebsiella and Enterobacter aerogenes.
- Late lactose fermenters (slow): These are Shigella Sonnei, Serratia, Citrobacter, Arizona, Providencia and Ervinia.
- Non-lactose fermenters : Shigella except Shigella Sonnei, Salmonella, Proteus

447. Trachoma is caused by which serotype of chlamydia trachomatis ?

a) D to K

b) A, B, C

c) L₁ L₂ L₃

d) All of the above

Correct Answer - D

Ans. is. D. 'All of the above [Ref Ananthanarayan 9th/e p. 417 er S^ale p. 417]

Diseases caused by C trachomatis

1. Serotype A, B, Ba, C (Biovar TRIC) : Endemic blinding trachoma.
2. Serotype D to K (Biovar TRIG) : Inclusion conjunctivitis, genital chlamydiasis (non gonococcal urethritis & others), infantile pneumonia.
3. Serotype L I, L2, L3 (Biovar LGV) : Lymphogranuloma venerum, hemorrhagic proctitis.

448. L₁ L₂ L₃ serovar of chlamydia trachomatis cause ?

a) Trachoma

b) Inclusion conjunctivitis

c) NGU

d) LGV

Correct Answer - D

Ans. is 'd' i.e., LGV [Ref Ananthanarayan 9thVe p. 417 & 8thVe p. 417]

449. True about chlamydia is:

a) Replicative form is elementary body

b) Infective form to host cell is elementary body

c) Cell wall contains N-acetylmuramic acid and peptidoglycan

d) All of the above are correct

Correct Answer - B

Ans. is. 'b' i. e., Infective form to host cell is elementary body

450. Chlamydia is associated with which bodies?

a) Torres bodies

b) Negri bodies

c) Reticulate bodies

d) Bollinger bodies

Correct Answer - C
Ans. (c) Reticulate bodies

**451. Temperature required for isolation of
compylobacter:**

a) 20°C

b) 25°C

c) 37°C

d) 42°C

Correct Answer - D
Ans. is. 'd' i. e., 42°C

452. Legionella causes:

a) Pontiac fever

b) Myocarditis

c) Diarrhea

d) All of the above

Correct Answer - D

Ans. is. 'd' i. e., All of the above

453. Cholera toxin binds to which receptors in intestine:

a) Sphingosine through A subunit

b) Sphingosine through B subunit

c) GM1 gangliosides through A subunit

d) GM1 gangliosides through B subunit

Correct Answer - D

Ans. is. 'd' i. e., GM1 gangliosides through B subunit

454. Actinomyces differs from bacteria in that:

a) Gram positive

b) Filamentous organism

c) Non-motile

d) Non-acid fast

Correct Answer - B

Ans. is. 'b' i. e. Filamentous organism

455. School of fish appearance is characteristic of:

a) Bordetella pertussis

b) Yersinia enterocolitica

c) Haemophilus ducreyi

d) Legionella

Correct Answer - C

Ans. is. 'c' i. e., Haemophilus ducreyi

456. Organism identified by interferons:

a) Staphylococcus

b) Leptospira

c) Campylobactor

d) M. tuberculosis

Correct Answer - D

Ans. is. 'd' i. e., M. tuberculosis

457. Which of the following is always present in a virus?

a) Enzymes

b) Envelop

c) RNA or DNA

d) All of the above

Correct Answer - C

Ans. is 'c' i.e., RNA or DNA [Ref Ananthanarayan 9^m/e p. 427, 428]

- Viruses are obligate intracellular parasites.
- They lack enzymes necessary for protein and nucleic acid synthesis and are dependent for replication on the synthetic machinery of host cells - so, they cannot grow in cell free culture media.
- They do not have cellular organization - do not contain ribosome, ER, mitochondria etc.
- They contain only one type of nucleic acid, either RNA or DNA, never both.
- Virion may be enveloped or nonenveloped (naked).

458. Pocks on chick embryo are formed by all except

a) Variola

b) Vaccinia

c) Chickenpox

d) Cowpox

Correct Answer - C
Ans. is 'c' i.e., Chicken Pox

459. Prophage is defined as:

a) Insertion of viral nucleic acid into bacteria by bacteriophage

b) First cycle of division of bacterial nucleic acid

c) Last cycle of division of bacterial nucleic acid

d) Integrated temperate bacteriophage genome into bacterial chromosome

Correct Answer - A

Ans. is. 'a' i. e., Insertion of viral nucleic acid into bacteria by bacteriophage

460. Beta phage is seen in:

a) *Bacillus anthracis*

b) *Corynebacterium diphtheriae*

c) *Clostridium botulinum*

d) *Peptostreptococci*

Correct Answer - B

Ans. is. 'b' i. e. *Corynebacterium diphtheriae*

461. True about infectious mononucleosis -

a) Associated with heterophile antibodies

b) Monocytosis

c) Associated with cold agglutinin

d) a and c

Correct Answer - D

Ans. is. 'a' i.e., Associated with heterophile antibodies, 'c' i.e., Associated with cold agglutinin

. EBV causes a self limited illness; infectious mononucleosis also known as glandular fever.

. EBV causes autoimmune hemolytic anemia which is due to presence of cold agglutinins.

. In IMN, there is there is predominantly lymphocytosis (not monocytosis).

. In EBV infection, there is production of heterophile antibodies.

. CMV and EBV can cause latent co-infection in childhood.-----

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462. Human metapneumovirus is structurally similar to:

a) Influenza virus

b) Respiratory syncytial virus

c) Measles virus

d) Rubella virus

Correct Answer - B

Ans. b. Respiratory syncytial virus

463. True about rotavirus vaccine:

a) Killed vaccine

b) Given subcutaneous

c) Pentavalent vaccine

d) Should be given before 5 years

Correct Answer - C

Ans. c. Pentavalent vaccine

464. Epidemic pleurodynia is caused by ?

a) Enterovirus -70

b) Coxsackie - A virus

c) Coxsackie -B virus

d) Enterovirus

Correct Answer - C

Ans. is 'c' i.e., Coxsackie -B virus [Ref Greenwood 16th/e p 459]

There are two types of Coxsackie viruses :

1. **Coxsackie A (Serotypes 1 to 24) :** They cause aseptic meningitis (especially A7 and A9), **Herpangina**, febrile illness, acute hemorrhagic conjunctivitis (by A24), and 'Hand-foot-mouth disease'.
2. **Coxsackie B (Serotypes 1 to 6) :** They cause aseptic meningitis (all serotypes), neonatal disease, **Bornholm disease (pleurodynia or epidemic myalgia)**, myocarditis, hepatitis, pancreatitis & DM (serotype B4), and pneumonia.

465. HPV-6 most often implicated in causation of:

a) Cervical cancer

b) Condyloma acuminata

c) Flat wart

d) Common wart

Correct Answer - B
Ans. b. Condyloma acuminata

466. Active replication in Hepatitis B infection is indicated by ?

a) HBeAg

b) HBsAg

c) HBcAg

d) Anti-HBsAg

Correct Answer - A

Ans. is 'a' i.e., HBeAg

- HBeAg is an indicator of active intrahepatic replication and high infectivity.
 - It is a qualitative marker of HBV replication.
- Serologic and virologic markers of HBV infection**
1. HBs Ag
 - First virological marker detectable in the serum
 - HBsAg presence precedes elevations of serum aminotransferase activity and onset of clinical illness.
 - HBsAg become undetectable 1-2 months after the onset of jaundice and rarely persists beyond 6 months.
 - In chronic HBV infection, HBsAg remains detectable beyond 6 months.
 2. HBc Ag
 - It is not demonstrable in the circulation because it is enclosed within the HBs Ag coat.
 - HBc Ag remain in the hepatocyte, where it can readily be detectable by immunohistochemical staining.
 3. HBeAg
 - HBe Ag appears concurrently with or shortly after HBs Ag.
 - Be Ag is an indicator of active intrahepatic replication and high

infectivity.

- It is a qualitative marker of HBV replication.
- HBs Ag carrier mothers who are HBe Ag positive almost invariably (> 90%) transmit hepatitis B infection to their offspring, whereas HBs Ag carrier mothers with anti HBe rarely (10 to 15%) infect their offspring.
- HBe testing is indicated primarily during follow up of chronic infection.

4. Anti HBc Ag

- Appears within the first 1 to 2 weeks after the appearance of HBs Ag.
- In acute or recent infection IgM anti HBc is detected.
- Ig G anti HBc indicates remote infection.

5. Anti HBs Ag

- It becomes detectable in blood when HBs Ag disappears.
- Anti HBs Ag is protective antibody.
- It is the only serological marker, present after immunization.

6. Anti HBe Ag

- Disappearance of HBe Ag is followed by the appearance of anti HBe Ag.
- Its presence indicates low infectivity and virus replication.

7. HBV DNA

- It is the *quantitative* marker of virus replication.

467. Acute hemorrhagic fever with renal involvement is caused by ?

a) KFD

b) Yellow fever

c) Hanta virus

d) JE

Correct Answer - C

Ans. is 'c' i.e., Hanta virus [Ref Ananthanarayan 9th/e p. 527]

Hantavirus causes hemorrhagic fever with renal syndrome.

468. True about HCV include all except:

a) Highest rate of chronicity among all hepatitis viruses

b) Can be cultured

c) Diagnosed by detection of HCV RNA

d) Transmitted through transfusion of infected food

Correct Answer - B

Ans. b. Can be cultured

469. Which virus may produce incomplete progeny ?

a) Influenza

b) Measles

c) Mumps

d) Polio

Correct Answer - A

Ans. is 'a' i.e., Influenza [Ref Pariza 2nd ed p. 435]

- When cells are infected with high dose of influenza virus, there is defective assembly during replication and the progeny virions are incomplete and non-infective.
- This is called as Man - magnus phenomenon

470. HPV causes which change in cervical epithelium ?

- a) Induction of apoptosis
- b) Induction of necrosis
- c) Immortalization of epithelial cells
- d) By stimulating telomerase

Correct Answer - C

Ans. is 'c' i.e., Immortalization of epithelial cells [Ref Essentials of microbiology p. 424]

- HPV selectively infects the epithelium of skin and mucous membrane and may immortalize the keratinocytes leading either asymptomatic infection, or warts or neoplasia.
- Products of **E-genes (E6, E7)** are related to immortalization or malignant transformation of keratinocytes by interfering with p53 **and Rb genes**, respectively.

471. HTLV-1 is also known as:

a) HIV

b) ATL

c) RSV

d) ALV

Correct Answer - B

Ans. b. ATL

**472. Human B-cell lymphotropic virus
belongs to:**

a) Picorna virus

b) Pox virus

c) Reovirus

d) Herpes virus

Correct Answer - D
Ans. d. Herpes virus

473. Malignant hydatid cyst is caused by:

a) *Echinococcus granulosus*

b) *E. multilocularis*

c) *E. vogeli*

d) *E. oligarthus*

Correct Answer - B
Ans. b. *E. multilocularis*

474. Opisthorchis sinensis can cause:

a) Cholangiocarcinoma

b) Liver carcinoma

c) Pancreatic carcinoma

d) All of the above

Correct Answer - A
Ans. a. Cholangiocarcinoma

475. The normal habitat of giardia is-

a) Duodenum and jejunum

b) Stomach

c) Caecum

d) Ileum

Correct Answer - A

Ans. is 'a' i.e., Duodenum and jejunum

476. Amastigote form of which parasite is found in human?

a) *Trypanosoma cruzi*

b) *Trypanosoma brucei*

c) *Trypanosoma gambiense*

d) *Trypanosoma rhodesiense*

Correct Answer - A

Ans. a. *Trypanosoma cruzi*

477. The intermediate host for T. Saginata is:

a) Man

b) Cow

c) Dog

d) Pig

Correct Answer - B

Cow

cow is intermideate and Man acts as definitive host for almost all important parasites, except for plasmodium, toxoplasma and echinococcus for which man is intermediate host

478. "Tuberculate spores" are characteristic features of-

a) Candidia

b) Histoplasma

c) Coccidiomyces

d) Cryptococcus

Correct Answer - B

Ans. is 'b' i.e., Histoplasma

- On *Sabourauds agar*, at room temperature, white cottony mycelia growth appears, with large (8-20 micrometer) thick walled, spherical spores with tubercles or finger-like projections. This appearance of "tuberculate spores" is diagnostic of *Histoplasma capsulatum*.

479. Type of pneumonia in *P. jirovecii* ?

a) Lobar pneumonia

b) Interstitial pneumonia

c) Bronchopneumonia

d) Any of the above

Correct Answer - B

Ans. is 'b' i.e., Interstitial pneumonia [Ref: Harrison 19th/e p. 1358]

- Pneumocystis is an opportunistic fungal pulmonary pathogen.
- Most common site of involvement is **lung (pneumonia)**. Classical finding is bilateral diffuse infiltrates beginning in perihilar region.
- Upper lobe infiltrates may develop after aerosolized pentamidine therapy. There may be **pneumothorax**.

480. Fungus which infects reticuloendothelial cells is -

a) Cryptococcus

b) Candida

c) Aspergillus

d) Histoplasma

Correct Answer - D

Ans. is 'd' i.e., Histoplasma [Ref Harrison 19th/e p. 1332; Ananthnarayan 8th le p. 612]

- Histoplasma capsulatum is a dimorphic fungus.
- It causes intracellular infection of reticuloendothelial system

481. Immunoglobulin variation does not depend on -

a) Light chain

b) Heavy chain

c) Amino acid sequence

d) Constant region

Correct Answer - A

Ans. is 'a' i.e., Light chain [Ref Ananthanarayan 9thle p. 99]

- The isotype *variation* or class of antibody is due to variation in the amino acid sequence in the constant region of the heavy chain.
- Because there are five potential variation in the aminoacid sequence in the constant region there are five classes of antibody i.e. IgG, IgM, IgA, IgD, IgE.

482. Postzone phenomenon is seen in ?

a) Antigen excess

b) Antibody excess

c) Equivalence zone

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Antigen excess [Ref Ananthnarayan 9th/e p. 109]

- Postzone phenomenon → Antigen excess
- Prozone phenomenon → Antibody excess

483. Prozone phenomenon is a feature is-

a) Tularemia

b) Legionnaire's disease

c) Plague

d) Brucellosis

Correct Answer - D
Ans. is 'd' i.e., Brucellosis

484. The secretory component of immunoglobulin molecule is -

a) Formed by epithelial cells of lining mucosa

b) Formed by plasma cell

c) Formed by epithelial cell and plasma cell

d) Secreted by bone marrow

Correct Answer - A

Ans. **is** 'a' i.e., Formed by epithelial cells of lining mucosa

485. Opsonic index is the ratio of ?

a) C_{3b} opsonin to antibody opsinin

b) Phagocytic activity of patient to phagocytic activity of normal individual

c) Serum concentration of opsonin in patient to serum concentration in normal individual

d) Complement activity in patient to complement activity in normal individual

Correct Answer - B

Ans. is 'b' i.e., Phagocytic activity of patient to phagocytic activity of normal individual [Ref Pariza 2nd /e p. 115]

- The coating of an antigen or particle (eg - infectious agent) by substances, such as antibodies, complement components and fibronectin facilitate phagocytosis. This is called opsonization.
- The substance which enhances phagocytosis (causing opsonization) is called opsonin. Two most important opsonins are antibodies (IgM, IgG) and complement (C3b).
- IgM is more effective than IgG in causing opsonization. Other opsonins are serum proteins like fibrinogen, mannose binding lectin and C-reactive proteins.
- The term 'Opsonic index' is defined as the ratio of of the phagocytic activity of patient's blood for a particular bacterium to the phagocytic activity of blood of normal individual.
- It is used to study the progress of resistance during the course of the disease.

486. Antibody dependent killing:

a) NK cell

b) NK cell only

c) Macrophage

d) NK cells, neutrophils & macrophage

Correct Answer - D

Ans: D. NK cells, neutrophils & macrophage

Ref: Robbins and Cotran Pathologic Basis of Disease edn; Page no. 784

- Antibody depended cell-mediated cytotoxicity (ADCC) is the killing of an antibody-coated target cell by a cytotoxic effector cell through a nonphagocytic process, characterised by release of content of cytotoxic granules Tor by expression of cell death-inducing molecules.
- ADCC is triggered through interaction of target bound antibodies (IgA, IgG or IgE) with certain Fc receptors, glycoproteins present on the effectors cell surface that binds the Fc region of Ig.
- Effector cells that mediate ADCC include NK Cells, monocytes, macrophages, neutrophils, eosinophils and dendrite cells.

487. Cytolytic activity of membrane attack complex is modulated by ?

a) Factor I

b) Factor B

c) Factor S

d) Factor H

Correct Answer - C
Ans. is 'c' i.e., Factor S

488. Antigen-antibody complexes are detected by:

a) Western blot

b) Southern blot

c) Northern blot

d) ELISA

Correct Answer - A:D

Ans **(a; d) Western blot; ELISA** *Ref Ananthanarayan 8/e, p 103-113* Precipitation reactions are seen in:

Agglutination

- Precipitation

Complement fixation

- ELISA

Immunofluorescence (Direct/indirect)

Radioimmunoassay

Chemiluminescence immunoassay (CLIA)

Immunoblot techniques e.g. western blot

Immunochromatographic test

Immune electron microscopy tests

489. Painless ulcer along with painless lymphadenopathy is characteristic of which STD:

a) Syphilis

b) Chancroid

c) LGV

d) Donovanosis

Correct Answer - A
Ans. is. 'a' i. e., Syphilis

490. Penile ulcer is painful in:

a) Syphilis

b) LGV

c) Donovanosis

d) Chancroid

Correct Answer - D
Ans. is. 'd' i. e., Chancroid

491. True about LGV ?

a) Bleeding ulcer in 1st stage

b) Bubos in 1st stage

c) Groove's sign in 2nd stage

d) Proctocolitis in 2nd stage

Correct Answer - C

Ans. is 'c' i.e., Groove's sign in 2nd stage

Stages of LGV are :?

- First stage (Primary LGV) :- Self limited, Single, asymptomatic, painless, nonbleeding genital ulcer.
- Secondary stage : - Painful inguinal lymphadenopathy (Remember Ulcer is pain less but lymphadenopathy is tender & painful).
- Swollen lymph nodes coalesce to form **bubos, i.e.**, matted lymph nodes. Buboes may rupture to form discharging sinus. Groove's sign - Enlarge lymph nodes both above and below inguinal ligament.
- Tertiary LGV (genitorectal syndrome) : - Characterized by proctocolitis.

492. It is true regarding the normal microbial flora present on the skin and mucous membranes that ?

- a) It cannot be eradicated by antimicrobial agents
- b) It is absent in the stomach due to the acidic pH
- c) It establishes in the body only after the neonatal period
- d) The flora in the small bronchi is similar to that of the trachea

Correct Answer - A

Ans is 'a' i.e., It cannot be eradicated by antimicrobial agents

. *The normal microbial flora are more or less constant for each species and are broadly divided into residents and transients. The former constitute a constant population which cannot be completely removed permanently.*

- *Ananthanarayan 7th/e 599*

. *Because of low pH of stomach, it is virtually sterile except soon after eating - Ananthanarayan 71/4 601*

. *With in 4-24 hours of birth an intestinal flora is established - Ananthanarayan r/e 600*

. *In the pharynx and trachea, flora is similar to that of mouth, while smaller bronchi and alveoli are normally sterile*

- *Ananthanarayan 7th/e 600*

493. $>10^2$ colony forming unit per ml of urine is significant in ?

a) Suprapubic aspiration

b) In-out catheterization

c) Per urethral catheterization

d) Clean void urine

Correct Answer - A

Ans. is 'a' i.e., Suprapubic aspiration [Ref: Hutchison's textbook p. 614]

- The number of bacteria taken as significant bacteriuria varies depending upon the type of sample -
- Suprapubic aspiration of bladder $\rightarrow 10^2$ colony-forming units (CFU) per ml.
- In-out catheterization of bladder $>10^3$ CFU/ml
- Clean void urine $>10^4$ CFU/ml
- Carefully, collected urine in bag (unspun urine) $\rightarrow >10^5$ CFU/ml

494. Pediculus humanus can transmitt:

a) Sleeping sickness

b) Plague

c) Chaga's disease

d) Relapsing fever

Correct Answer - C

Ans. c. Chaga's disease

495. A patient in ICU and on ventilator develops cough with fever. The gram-staining on microscopy will show:

a) Gram negative cocci

b) Gram negative bacilli

c) Gram positive bacilli

d) Gram variable organism

Correct Answer - B

Ans. is. 'b' i. e., Gram negative bacilli

496. Atypical Pneumonia is caused by:

a) Staphylococcus

b) Streptococcus

c) Chlamydia

d) H. Influenza

Correct Answer - C
Chlamydia

497. True about interferon is:

a) It is a synthetic antiviral agent

b) Inhibits viral replication in cells

c) Is specific for particular virus

d) None

Correct Answer - B

Ans. (b) Inhibits viral replication in cells *Rt,11* *itlii*

ilallarayl111 CO, p p liii i tC,i ;r, p

- Interferon (host coded protein) has no direct action on viruses but inhibit viral replication by selectively inhibiting translation of viral m-RNA without affecting cellular m-RNA.
- IFN are not virus specific but species specific.
- It is of 3 types:

Type target	Cell source.	Cell Biological activity
<i>IFN a (protein) or leukocyte IFN</i>	All cells	Antiviral activity; stimulates T L.cell, macrophages and NK cell activity
<i>IFN 13 (glycoprotein) or Fibroblast IFN</i>	All cells	All cells Direct antitumor effects Upregulates MHC class I antigen expression. Used thereapeutically in viral and autoimmune disease
<ul style="list-style-type: none"> • <i>IFNγ (glycoprotein) or immune IFN</i> 	All cells	Regulates macrophage and NK cells activation
NK		Stimulates Ig secretion by B

cells

cells Induction of class II
histocompatibility antigens
TH1 T cell differentiation

498. Burton's agammaglobulinemia is due to?

a) B-cell defect

b) IgA deficiency

c) Ig M deficiency

d) Ig G deficiency³¹³

Correct Answer - A

Ans is 'a' i.e. B-cell defect

[Ref Harrison 18 /e p. 478 & 17th/e p. 381; Robbin's 9thie p. 240 & 8thie p. 53, 55] X-Linked agammaglobulinemia of burton

- There is defective humoral immunity with normal cell mediated immunity. It is characterized by the failure of B cell precursors (Pro-B cells and pre B cells) to mature into B cells.
- There is mutation in cytoplasmic tyrosine kinase called B - cell tyrosine kinase (Btk).
- The disease usually does not become apparent until about age 6 months, when maternal immunoglobulins are depleted.
- B cells are absent or markedly decreased in the circulation, and the serum levels of all classes of immunoglobulin.
- There is depletions of B cell area of lymphnode (Cortical follicles and medullary cord) and spleen (perifollicular region, germinal centre and mantle layer). Tonsil and adenoids are atrophic.
- T-cell collection areas are normal i.e. (i) Paracortical area in lymph nodes, and (ii) Periarterial lymphoid region & malpighian corpuscle in white pulp of spleen.
- The disease is seen almost entirely in males. There is recurrent bacterial infections of respiratory tract by H. influenzae, str. pneumoniae or staph. aureus.
- There is increased susceptibility to infection with enterovirus (echo,

coxsackievirus, poliovirus), giardia lamblia, and arthritis by mycoplasma.

- As there is agammaglobulinemia, Opsonization is defective (Immunoglobulins are the major opsonins in body).

499. Which of the herpes virus is included in Biohazard risk group 4:

a) HSV 1

b) CMV

c) EBV

d) Herpes simiae

Correct Answer - C
Ans. c. EBV

500. The concept of Social medicine was first introduced by-

a) Neumann and Virchow

b) Robert Grotjahn

c) John Ryle

d) Rene sand

Correct Answer - A

Ans. is 'a' i.e., Neumann and virchow

The seeds that medicine is a social science were sown late in the 19th century by pioneers such as Neumann and Virchow.

501. Who among the following introduced the concept of relationship of environment with roman health?

a) Hippocrates

b) Louis Pasteur

c) David Moley

d) Ambroise Pare

Correct Answer - A

Ans. is 'a' i.e., Hippocrates [Ref: Park 23rd/e p. 2-8]

- **Hippocrates is considered as Fathers of Modern Medicine.**
- He introduced the concept of human health being closely related to environment

502. The pioneer in concept of specific protection by vaccine was ?

a) Chinese

b) Robert Koch

c) Ambroise Paré

d) Louis Pasteur

Correct Answer - A

Ans. is 'a' i.e., Chinese

- The **Chinese** were early **pioneers of immunizations**. They practiced variolation to prevent smallpox.
- Similar practice is also known to be prevalent in the early Ayurveda period, which was quoted by Edward Jenner to the Royal Society to get approval for first proposed smallpox vaccine.

503. The earliest public health law was promulgated in ?

a) Germany

b) Russia

c) China

d) England

Correct Answer - D

Ans. is 'd' i.e., England [Ref Park 23rd le p. I-11]

- First country to introduce compulsory sickness insurance → Germany.
- First country to socialize medicine completely → Russia.
- First country to start acupuncture → China
- First country to start family planning programme → India.
- **First country to start concept of health care & public health → England.**
- First country to start Blindness control programme → India.
- First country to start Pasteurization → France.
- First country to develop bath, sewers and aqueducts for sanitation → Rome.

504. According to 'Biomedical concept' health is?

a) Relative absence of pain and discomfort

b) Absence of disease

c) A sound mind in sound body, in a sound family, in sound environment

d) None

Correct Answer - B

Ans. is 'b' i.e., Absence of disease

505. According to classification by Human development index, India belongs to ?

a) High HDI

b) Medium HDI

c) Low HDI

d) Very Low HDI

Correct Answer - B

Ans. is 'b' i.e., Medium HDI

According to HDI countries are divided -

1. **Developed countries (High HDI - 0.8) → USA, Canada, Norway**
2. **Developing countries (medium HDI 4 0.5 - 0.79) → India**
3. **Underdeveloped countries (Low HDI 4 0.5) → Seiera, Ethopia**

506. Epornitic is defined as ?

a) Endemic in animals

b) Epidemic in animals

c) Endemic in birds

d) Epidemic in birds

Correct Answer - D

Ans. is 'd' i.e., Epidemic in birds

- Epizootic is an outbreak (epidemic) of disease in an animal population i.g., anthrax, brucellosis, rabies, influenza, Rift Valley fever, Q fever, Japanese encephalitis and equine encephalitis.
- **Enzootic** is an endemic occurring in animals e.g., anthrax, rabies, brucellosis, bovine tuberculosis, endemic typhus, tick typhus.
- **Epornithic** is an epidemic of disease in a bird population

507. True morbidity in a population can be calculated by?

a) Sentinel surveillance

b) Passive surveillance

c) Active surveillance

d) Monitoring

Correct Answer - C

Ans. is 'c' i.e., Active surveillance

o True morbidity is calculated by —> Active surveillance

o Missing cases are detected by —> Sentinal surveillance

508. Epidemic marker of TB ?

a) Sputum AFB positivity rate

b) Tuberculin test positivity rate

c) Chest x-ray positivity rate

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Sputum AFB Positivity rate

- Case finding tool of choice for TB is sputum microscopy & sputum AFB positivity
- Case finding tools in TB are :?
- Sputum microscopy
- It is the **method of choice**.
- Sputum culture
- **It is 2nd** in importance (after sputum microscopy) in a case finding programme.
- Mass miniature radiography
- It **has been stopped** as a general measure of case finding.
- 4) Tuberculin test
- It is of little value as a case finding tool as it has no diagnostic value.
- The number of bacilli seen in a smear reflects disease severity and patient infectivity.
- Therefore, it is important to record the number of bacilli seen in each smear.

509. In RNTCP, One tubercular unit covers how much population ?

a) 100000

b) 500000

c) 30000

d) 1000

Correct Answer - B
Ans. b. 500000

510. A 1 month old infant presenting with cough and sneezing, respiratory rate 40 per minute, and there is no chest indrawing. The management is?

a) Urgent referral to hospital

b) IV antibiotics

c) Frequent breast feeding

d) Oral antibiotic syrup

Correct Answer - C

Ans. is 'c' i.e., Frequent breast feeding [Ref Park 23rdie p. 796 & 22nd ie p. 741]

- Classification of acute respiratory tract infection (ARTI) is very important because each class has a corresponding treatment plan.
- Before going ahead for classification of ARTI, one should know the definition of fast breathing. As the children get older, their breathing rate slows down.
- Therefore, the cut-off point of fast breathing will depend on the age of the child.

511. An 18 months child weighing 11.5 kg comes to the PHC with fever and respiratory difficulty. On examination, the child is lethargic, with a respiratory rate of 46 bpm and no chest retractions. What is the most appropriate management of this child?

a) Prescribe oral antibiotics, warn of danger signs and send home

b) Intravenous fluids alone

c) Intravenous antibiotics and observation

d) Give intravenous antibiotics and refer to a higher center

Correct Answer - A

Answer- A. Prescribe oral antibiotics, warn of danger signs and send home

This child is having fast breathing (respiratory rate >46 /minute) without danger signs like lower chest wall indrawing or stridor. Hence, the child will be classified to have pneumonia (non-severe). So, the child should be prescribed appropriate antibiotic and advise mother about supportive measures and when to return for follow-up.

512. All of the following are arthropod borne diseases except:
September 2007

a) Malaria

b) Filariasis

c) Dengue

d) Dracunculosis

Correct Answer - D

Ans. D: Dracunculosis

Arthropod-borne diseases are transmitted by arthropods, members of the invertebrate phylum Arthropoda, which includes insects, spiders, and crustaceans.

Mosquitoes, fleas, ticks, lice, and flies are the arthropods that usually act as vectors for various pathogens (disease-causing microorganisms), including bacteria, viruses, helminths (parasitic worms), and protozoa.

Transmission of these pathogens to humans by the arthropod vector can cause a variety of human diseases, including malaria, yellow fever, Chagas disease, and dengue fever.

513. Color of kit 3 for STD under AIDS control programme?

a) Red

b) Blue

c) White

d) Green

Correct Answer - C

Ans. is 'c' i.e., White

Pre-packed colour coded STI/RTI kits have been provided for free supply to all designated STI/RTI clinics :

- Kit 1 4 Grey, for urethral discharge, ano-rectal discharge, cervicitis.
- Kit 2 - Green, for vaginitis
- Kit 3 4 White, for genital ulcers
- Kit 4 - Blue, for genital ulcers
- Kit 5 - Red, for genital ulcers
- Kit 6 4 Yellow, for lower abdominal **pain**
- Kit 7 - Black, for scortal swelling.

514. Mass immunization is indicated in the following, except-

a) Leprosy

b) Cholera

c) Influenza

d) Tuberculosis

Correct Answer - A

Ans. is 'a' i.e., Leprosy

Mass immunization (Mass vaccination).

o Mass immunization involves delivering *immunizations to a large number of people* at one or more locations in a short interval of time.

- Important diseases for which mass vaccination is used :-
 - i) Polio iv) Rabies vii) Measles x) Pertussis
 - ii) *Influenza* v) Anthrax viii) *TB (BCG)* xi) Tetanus
 - iii) *Cholera* vi) Typhoid ix) Diphtheria xii) Rubella

515. Treatment of choice for severe falciparum malaria is -

a) Chloroquine

b) IV artesunate

c) IV quinine

d) IV quinidine

Correct Answer - B

Ans. is 'b' i.e., IV artesunate

Treatment of falciparum malaria

o Artemisinin derivatives are the drug of choice for any type of falciparum malaria

i) Uncomplicated

ii) Complicated/severe/cerebral

o Amongst artemisinin derivatives, artesunate is the DOC.

o Other drugs used for severe/complicated/cerebral falciparum malaria : *Artemether (2nd choice), Quinine (3rd choice), Quinidine.*

516. Species of Anopheles causing malaria in Andaman & Nicobar island ?

a) Anopheles stephensi

b) Anopheles dirus

c) Anopheles culicifacies

d) Anopheles epiroticus

Correct Answer - D

Ans. is 'd' i.e., Anopheles epiroticus [Ref Park 22nd ed p. 236]

- Vector for malaria is female anopheline mosquito.
- **There are six primary vectors of malaria in India : ?**
- **An. culicifacies** : - It is the main vector in rural and periurban areas.
- **An. Stephensi** : - Responsible for malaria in urban and industrial areas.
- **An fluvitalis** : - Main vector in hilly areas, forests and forests fringes, especially in the east.
- **An. minimum** : - Vector in the the foot hills of North-Eastern states.
- **An. dirus** : - **Vector in** the forest of North-East.
- **An. epiroticus** : - Restricted to Andaman and Nicobar Islands.

517. A community has total population 10000. Children ranging 0-6 years are 2000. Literate persons among > 7 years old are 4000. What is effective literacy rate ?

a) 20%

b) 40%

c) 50%

d) 60%

Correct Answer - B

Ans. is 'b' i.e., 40% [Ref Park 23/e p. 485]

- Literacy rate is used for population relating to seven years and above - In the given population this accounts for 8000.
- Out of 8000, 4000 are literate → literacy rate is 50%

518. The most important cause of under 5 mortality worldwide is:

a) Diarrhoea

b) Malnutrition

c) Respiratory infections

d) Trauma

Correct Answer - C

Lower respiratory tract infections are the leading cause of morbidity worldwide between age group of 1 to 5.

Other causes are, diarrheal illness, measles, malaria, human immunodeficiency virus infection/acquired immunodeficiency syndrome. At

Ref: Goldman R.D., Meckler G.D. (2011). Chapter 110. Emergency Care of Children. In J.E. Tintinalli, J.S. Stapczynski, D.M. Cline, O.J. Ma, R.K. Cydulka, G.D. Meckler (Eds), *Tintinalli's Emergency Medicine: A Comprehensive Study Guide*, 7e.

519. Most common cancer in females in India ?

a) Breast

b) Cervix

c) Ovary

d) Uterus

Correct Answer - A

Ans. is 'a' i.e., Breast [Ref Park 24th/e p. 401]

- Overall cancers in world : Breast > Prostate > Colorectal > Lung > Cervix
- Cancers in males in world : Prostate > Colorectum > Lung > Stomach > Urinary bladder
- Cancers in females in world : Breast > Colorectum > Cervix > Uterus > Thyroid
- Overall cancers in India : Breast > Cervix > Lip / oral cavity > Colorectum > Prostate
- Cancers in males in India : Lip / oral cavity > Prostate > Colorectum > Pharynx (other than nasopharynx) > Larynx
- Cancer in females in India : Breast > Cervix > Ovary > Uterus > Colorectum

520. Unmet need for contraception in a 35 years female is for ?

a) Spacing birth

b) Limiting birth

c) Improve maternal health

d) Improve family health

Correct Answer - B

Ans. is 'b' i.e., Limiting birth [Ref Park 22ndle p. 472]

- Many women who are sexually active would prefer to avoid pregnancy, but nevertheless are not using any method of contraception.
- These women are considered to have 'unmet need' for family planning.
- The concept is usually applied to married women.
- According to the National Family Health Survey-3, Unmet need for family planning is highest (27.1%) among women below 20 years age and is almost entirely for spacing the births rather than for limiting the births.
- It is also relatively high for women in age group 20-24 years (21.1%) with 75% need for spacing and 25% for limiting the birth.
- Unmet need for contraception among women aged 30 years and above are mostly for limiting

521. Maximum calories are found in which fruit ?

a) Banana

b) Mango

c) Orange

d) Pear

Correct Answer - A

Ans. is 'a' i.e., Banana [Ref Internet]

- Energy in important fruits (per piece): Avocado (150 Cal) > Banana (107 cal) > apple (95 cal) > orange (65 cal) > Pear (45 cal) > mango (40 Cal).

522. Calcium in human milk in mg/dl -

a) 28

b) 45

c) 35

d) 55

Correct Answer - C

Ans. is 'c' i.e., 35 mg/dl

Nutrient

Content / 100 ml

Macronutrients

o Calories

67 kcal

o Proteins

1.1 g

o Fat

3.5 g

o Lactose

7.0 g *Minerals / Mic*

onutrients

o Sodium

0.9 mEq

o Potassium

1.4 mEq

o Calcium

35 mg

o Phosphorus

15 mg

o Iron

30-50 g

o Zinc

120 g *Vitamins*

o Vitamin A

60 g

o Vitamin C

5.2 mg

523. Maximum permissible chloride level is-

a) 200 mg/litre

b) 300 mg/litre

c) 500 mg/litre

d) 600 mg/litre

Correct Answer - D
Ans. is 'd' i.e., 600 mg/litre

524. One criteria for prudent diet?

a) Fat intake 35-40% of total energy

b) Dietary cholesterol < 300 mg/1000Kcal per day

c) Salt intake <10 g/day

d) Saturated fats < 10% of total energy

Correct Answer - D

Ans. is 'd' i.e., Saturated fats < 10% of total energy

Dietary goals prescribed by WHO expert committee prudent diet

- 3 Dietary modification is the principal preventive strategy in the prevention of CHD. The WHO Expert Committee (1) considered the following dietary changes to be appropriate for high incidence populations.
- Reduction of fat intake to 20-30 percent of total energy intake
- Consumption of saturated fats must be limited to less than 10 percent of total energy intake, some of the reduction in saturated fat may be made up by mono and poly-unsaturated fats.
- A reduction of dietary cholesterol to below 100 mg per 1000 kcal per day.
- An increase in complex carbohydrate consumption (i.e. vegetables, fruits, whole grains and legumes)
- Avoidance of alcohol consumption, reduction of salt intake to 5 g daily or less.

Other specific interventions as part of primordial prevention of coronary heart disease

- To achieve a smoke free society
- Reduction of Blood pressure through prudent diet. Regular exercise, weight control & cessation of smoking.

- Regular Physical Activity.

525. Parboiling of paddy helps in retaining:

a) Vitamin C

b) Vitamin A

c) Niacin

d) Thiamine

Correct Answer - D

(Thiamine)

◆ Parboiling (partial cooking in steam) is ancient Indian technique of preserving the nutritive quality of rice.

◆ Technique of parboiling recommended by Central food technological research institute, Mysore is known as the '**hot soaking process**'.

◆ The process starts with soaking the paddy (unhusked rice) in hot water at 65-70°C for 3-4 hours, which swells the grain, which is followed by draining of water and steaming the soaked paddy in the same container for 5-10 minutes. The paddy is then dried, and later home-pounded or milled.

526. Vitamin D is not found in sufficient quantities in:
March 2012

a) Fish fat

b) Egg

c) Halibut liver oil

d) Milk

Correct Answer - D

Ans: D i.e. Milk

Foodstuff and vitamin-D content

- Fish fat contains 5-30 microgram/100 gram of vitamin D
- Egg contains 1.25-1.5 microgram/100 gram of vitamin D
- Halibut liver oil contains 500-10,000 microgram/100 gram of vitamin D
- Milk has 0.1 microgram/100 gram

527. Hard Tick causes *ale* -

a) Relapsing fever

b) KFD

c) Indian tick typhus

d) *Tularemia*

Correct Answer - A

Ans. is 'a' i.e., Relapsing fever

528. Hardness of water is contributed by following salts except-

a) Calcium gluconate

b) Magnesium chloride

c) Calcium sulfate

d) Magnisum bicarbonate

Correct Answer - A

Ans. is 'a' i.e., Calcium gluconate

o l lardness may be : -

i) Temporary (Carbonate) hardness Calcium bicarbonate & Magnesium bicarbonate.

It is called temporary because it can be *removed by boiling or addition of lime.*

ii) Permanent (Non-Carbonate) hardness —> Calcium Sulfate, magnesium sulfate, Calcium chloride, magnesium chloride.

It is called permanent because it cannot be removed by boiling.

529. Residual chlorine in chlorination of water should be:

a) 1 mg/L after 1 hr

b) 0.5 mg/L after 1 hr

c) 1 mg/L after 30 mins

d) 0.5 mg/L after 30 mins

Correct Answer - B

The minimum recommended concentration of free chlorine is 0.5 mg/L for one hour. The sum of the chlorine demand of the specific water plus the free residual chlorine of 0.5 mg/L constitutes the correct dose of chlorine to be applied.

The chlorine has no effect on spores, protozoal cysts and helminthic ova, except in higher doses.

Ref: Park's Textbook of Social and Preventive Medicine, 19th edition, Page 575.

530. What is the acceptable noise level in Hospital (In decibel)?

a) 5-20

b) 20-35

c) 35-50

d) 70-85

Correct Answer - B

Acceptable noise levels (decibels)

Residential	Bed room	25
	Living room	40
Educational	Class room	30-40
	Library	35-40
Hospital	Wards	20-35
Industrial	Workshop	40-60
	Laboratory	40-50

Ref: Park's textbook of Preventive and Social Medicine, 21st edition, page-685.

531. All are water borne disease, except-

a) Leptospirosis

b) Schistosomiasis

c) Fish tape worm

d) Brucellosis

Correct Answer - D

Ans. is 'd' i.e., Brucellosis

Water Borne diseases

o Those caused by the presence of an infective agent

a) *Viral* *Hep. A, Hep E, Polio, Rota virus*
diarrhoea

b) *Bacteria* *Typhoid & paratyphoid. Cholera,*
Bacillary dysentery. E coli diarrhoea

c) *Protozoal* *A moebiasis, Gardiasis.*

d) *Helminthic* *round worm. thread worm, hydatid*
disease.

e) *Leptospiral* *Weils disease.*

o Those due to presence of an *aquatic* host

a) *Snail* *Schistosomiasis*

b) *Cyclops* *Guinea worm, fish tapeworm*

532. Components of IDEAS include all of the following except-

a) Self care

b) Communication and understanding

c) Economic condition

d) Performing in work

Correct Answer - C

Ans. is `c' i.e., Economic condition

Indian Disability Evaluation and Assessment Scale (IDIEAS1)
A scale for measuring and quantifying disability in mental disorders.
Developed by the Rehabilitation Committee of Indian Psychiatric Society, December 2000. The scale includes four components or items as described below.

533. Brick incinerator is used for ?

a) Waste sharp

b) Discarded medicine

c) Infectious waste

d) Disposable items

Correct Answer - C

Ans. is 'c' i.e., Infectious waste [Ref www.who.int]

- Drum (or field) incinerator and brick incinerator should be used only as a last resort, as it is difficult to burn the waste completely without generating potentially harmful smoke.
- The option is appropriate only in emergency situations during acute outbreaks of communicable diseases and should be used only for infectious waste.

534.

Which of the following is not a part of Kuppuswamy's socio-economic status scale:

September 2011

a) Education

b) Occupation

c) Income

d) Housing

Correct Answer - D

Ans. D: Housing

Kuppuswamy scale includes education of the head of family, occupation of the head of family and income of the family per month

Kuppuswami scale

- It is widely used to measure the socio-economic status of an individual in urban community based on three variables namely education, occupation and income.
- The modification of Kuppuswami scale meant to determine the socioeconomic status of family based on education and occupation of head of the family and per capita income per month has also been widely used.
- Recently, Mishra et al have suggested an economic revision of Kuppuswami's scale in order to account for the devaluation of rupee and is proposed to measure the socio-economic status of the family and is neither based on the individual nor on the head of the family

535. Multibacillary leprosy follow up for -

a) 12-18 months

b) 2 years

c) 5 years

d) 10 years

Correct Answer - C

Ans. is 'c' i.e., 5 years

o Follow-up in paucibacillary leprosy → 2 years

o Follow-up in multibacillary leprosy → 5 years

536. Workshop is ?

a) Discussion of 4-8 experts in front of audience

b) Discussion between 6-12 members

c) Series of four **or more** meetings

d) Series of speeches on given subject

Correct Answer - C

Ans. is 'c' i.e., Series of four or more meetings [Ref Park 23rd/e p. 864-866] Workshop

- It consists of a series of meeting usually four or more, with emphasis on individual work, within the group, with the help of consultants and resource personnel.
- The total workshop may be divided into small groups and each group will solve and discuss a problem with the help of consultants.

537. Consumer protection act was passed in ?

a) 1977

b) 1986

c) 1993

d) 1998

Correct Answer - B

Ans. is 'b' i.e., 1986

- Consumer protection act was passed in 1986.

538. Denominator in sensitivity is ?

a) Total number of healthy people

b) Total number of diseased people

c) Total number of people showing positive results

d) Total number of people showing negative results

Correct Answer - B

Ans. is 'b' i.e., Total number of diseased people [Ref Park 23rdie p. 139]

i) Sensitivity

- It is the percentage of diseased people that who are diagnosed as having disease.
- Total number of diseased people = True positive + False negative.
- Number of people (among diseased people) diagnosed as having disease = True positives.

ii) Specificity

- It is the percentage of healthy people who are identified as healthy.
- Total number of healthy people = True negatives + False positives
- Number of healthy people who are identified as healthy = True negatives

539. $IA/A+CI \times 100$ in the given table is :-

Test result	Persons with disease	Persons without disease	Total
Positive	A	B	A + B
Negative	C	D	C + D

a) Specificity

b) Sensitivity

c) PPV

d) NPV

Correct Answer - B

Ans. is 'b' i.e., Sensitivity

540. Population is 10,000, of these 20% having disease. The screening test has 95% sensitivity and 80% specificity. PPV is -

a) 54.3%

b) 98.5%

c) 47.5 %

d) 20%

Correct Answer - A
Ans. is 'a' i.e., 54.3%

541. If prevalence of a disease increases, what is true?

a) PPV increases

b) PPV decreases

c) No effect on PPV

d) PPV may increase or decrease

Correct Answer - A
Ans. is 'a' i.e., PPV increase

542. The amount of bleaching powder necessary to disinfect choleric stools, is

-

a) 50 gm/lit

b) 75 gm/lit

c) 90 gm/lit

d) 100 gm/lit

Correct Answer - A
Ans. is 'a' i.e., 50gm/lit

543. In RMNCH+A Strategy, what is plus ?

a) Adolescent health

b) Reproductive health

c) DPT Vaccination

d) Newborn health

Correct Answer - A

Ans. is 'a' i.e., Adolescent health [Ref Park's 24th ed p. 469]

- The RMNCH+A strategy is based on provision of comprehensive care through the five pillars, or thematic areas, of reproductive, maternal, neonatal, child, and adolescent health, and is guided by central tenets of equity, universal care, entitlement, and accountability. The "plus" within the strategy focusses on :
 - Including adolescence for the first time as a distinct life stage.
 - Linking maternal and child health to reproductive health, family planning, adolescent health. HIV, gender, preconception and prenatal diagnostic techniques.
 - Linking home and community-based services to facility-based care.
 - Ensuring linkages, referrals, and counter-referrals between and among health facilities at primary (primary health centre), secondary (community health centre), and tertiary levels (district hospital).

544. Not done in RMNCH + A ?

a) Linking maternal health to Reproductive health

b) Linking home & community based service to facility based care

c) Referral to PHC

d) Involvement of private organizations

Correct Answer - D

Ans. is 'd' i.e., Involvement of private organizations [Ref Park's 24th ed p. 469]

545. Sampling method used in assessing immunization status of children under immunization programme is

a) Systemic sampleing

b) Stratified sampling

c) Group sampling

d) Cluster sampling

Correct Answer - D

Ans. is 'd' i.e., Cluster sampling

o In the Expanded programme on Immunization (EPI) cluster technique, a simplified cluster sampling method is used.

It is based on ranodm selection of 210 children who are 12-23 months of age.

These patients are selected in 30 clusters of 7 children each to estimate immunization coverage levels.

546. Sputum can be disinfected by all except:

a) Auto claving

b) Boiling

c) Cresol

d) Chlorhexidine

Correct Answer - D

Ans. d. Chlorhexidine

Sputum can be disinfected by autoclaving, boiling or Cresol.

Chlorhexidine has no role in disinfection of sputum.

"Chlorhexidine (hibitane) is one of the most useful skin antiseptic.

Creams and lotion containing 1% Chlorhexidine are recommended for burns and hand disinfection."

547. Dangerous type of Herpes virus ?

a) Herpes simplex-2

b) Cytomegalo virus

c) Epstein barr virus

d) Herpes virus simiae

Correct Answer - D

Ans. is 'd' i.e., Herpes virus simiae [Ref Text book of public biohazard p. 332]

- Herpes Virus Simiae (Monkey B Virus) is biohazard risk group-4 virus which can cause serious or lethal human diseases.

548. Antimalarial month is-

a) April

b) May

c) September

d) June

Correct Answer - D

Ans. is 'd' i.e., June

o Antimalarial month is observed every year in month of June throughout the country, prior to the onset of monsoon and transmission season, to enhance the level of awareness and encourage community participation.

549. Ogive is -

a) Bar chart

b) Histogram

c) Cumulative frequency curve

d) Frequency polygon

Correct Answer - C

Ans. is 'c' i.e., Cumulative frequency curve

Cumulative frequency diagram (OGIVE)

o *Cumulative relative frequency* or *cumulative percentage*, gives the percentage of persons having a measurement less than or equal to the upper boundary of the class interval.

Weight interval (lb)	Frequency	Relative frequency	Cumulative relatives frequency	
10-19	5	8.8	8.8	
20-29	19	33.3	42.1	
30-39	10	17.5	59.6	
40-49	13	22.8	82.4	
50-59	4	7.0	89.4	
60-69	4	7.0	96.4	
70-79	2	3.5	99.9	100%
Total	57	100		

- The last column of above table shows the *cumulative relative frequency* or *cumulative percentage*. This column is easy to form, you do it by successively accumulating the relative frequencies of each of the various intervals. In the above table the cumulative percentage for the first three intervals is

$$8.8 + 33.3 + 17.5 = 59.6$$

and we can say that 59.6% of the children in the data set have a

and we can say that 99.0% of the children in the data set have a weight of 39.5 lb or less. Or, as another example, 96.4% of children weight 69.5 lb or less.

The cumulative relative frequency can be presented graphically. This type of curve is called a *cumulative frequency graph* or *OGIVE*. To construct such a graph, we place a point representing the cumulative relative frequency and the points are connected with straight lines.

- The cumulative frequency graph provides a class of important statistics known as *percentiles* or *percentile scores*. For example, the 90th percentile is the numerical value that exceeds 90% of the values in the data set and is exceeded by only 10% of them. As another example, the 80th percentile is that numerical value that exceeds 80% of the values contained in the data set and is exceeded by 20% of them, and so on. *The 50th percentile is commonly called the median.*

Uses of Cumulative frequency graph

1. When two cumulative frequency graph, representing two different data sets, are placed on the same graph, they provide a rapid visual comparison without any need to compare individual intervals.
2. Cumulative frequency graph provides an important application in the formation of health norms for the monitoring of physical process (weight and height) of infants and children.

550. Main highlight of IMNCI is ?

a) 0-7 days of infant

b) 0-14 days of infant

c) Sick infant more than sick child

d) 0-5 years of age

Correct Answer - D

Ans. is `d' i.e., 0-5 years of age

551. Integrated Management of Neonatal and Childhood Illness (IMNCI) includes all except -

a) Malaria

b) Respiratory infections

c) Diarrhoea

d) Tuberculosis

Correct Answer - D

Ans. is 'd' i.e., Tuberculosis

Integrated management of neonatal and childhood illness (IMNCI)
o IMNCI includes—> *Diarrhea, Malaria, Malnutrition, ARI*
(*Pneumonia, Otitis media*), *Measles*.

552. Personal services rendered by doctors to patients in hospital, nursing home and at home is ?

a) Health care

b) Medical care

c) Domiciliary care

d) Nursing care

Correct Answer - B

Ans. is 'b' i.e., Medical Care

- The term 'medical care' is not synonymous with health care.
- Health care means, 'services provided to individuals or communities by agents of the health services or professions for the purpose of promoting, maintaining, monitoring or restoring health'.
- It takes into consideration factors such as basic sanitation, adequate food, healthy life styles, housing, protection against environmental hazards and communicable diseases.
- It includes medical care.

553. Target health indicators of 12th five year plan are all except -

a) Reduce MMR to 100

b) Reduce TFR to 2.1

c) Reduce IMR to 20

d) Reduce prevalence of leprosy to $< 1/10000$

Correct Answer - C

Ans. is 'c' i.e., Reduce IMR to 20

- The twelfth plan will work towards national health outcome goals with following target health indicators :?
- Reduction of infant mortality rate to 25.
- Reduction of maternal mortality rate to 100.
- Reduction of total fertility rate to 2.1.
- Prevention and reduction of under-nutrition in children under 3 years to half of NFHS-3 (2005-06) level.
- Prevention and reduction of anaemia among women aged 15-19 years to 28%.
- Raising child sex ratio in 0-6 years age group from 914 to 950.
- Reduction of poor household's out-of-pocket expenditure.
- viii) Prevention and reduction of burden of communicable and non-communicable diseases and injuries.

554. Organ of corti is situated in ?

a) Basilar membrane

b) Utricle

c) Sacculle

d) None of the above

Correct Answer - A

Scala media (cochlear duct or membranous labyrinth) has 3 walls : -

- i) The basilar membrane, which supports the organ of corti.
- ii) The Reissner's membrane which separates it from the scala vestibuli.
- iii) The stria vascularis which contains vascular epithelium and is concerned with secretion of endolymph.

555. Normal volume of middle ear and mastoid ?

a) 1 cc

b) 6 cc

c) 12 cc

d) 15 cc

Correct Answer - B

Ans. is 'b' i.e., 6 cc I

- ReJ: Glasscock-shambaugh surgery of the ear p. 65)
- The normal average volume of middle ear and mastoid is 6 cc.

556. Aminoglycoside class of drugs causes hearing loss by damaging?

a) Inner hair cells of basal turn

b) Outer hair cells of basal turn

c) Inner hair cells of apical turn

d) Outer hair cells of apical turn

Correct Answer - B

Ans. is 'b' i.e., Outer hair cells of basal turn

o Aminoglycosides affect exclusively outer hair cells, particularly of basal coil of cochlea.

557. Tuning fork frequency used **MOST** commonly in the ENT clinic is likely to be which of the following?

a) 256 Hz

b) 512 Hz

c) 1024 Hz

d) 2048 Hz

Correct Answer - B

Ideally 3 frequencies are used 256 Hz, 512 Hz, and 1024 Hz. These three frequencies are used because they fall within speech frequency range.

The most preferred and commonly used is 512 Hz since tuning forks of higher frequency have shorter decay time and those with lower frequency produce a sense of bone vibration. It is a frequency common in human speech.

558. Recruitment test is positive in:

a) Retrocochlear lesions

b) Otosclerosis

c) Meniere's disease

d) None of the above

Correct Answer - C

**559. In the right middle ear pathology,
Weber's test will be:**

a) Normal

b) Centralized

c) Lateralized to right side

d) Lateralized to left side

Correct Answer - C

560. WEBER'S test in otitis media will be?

a) Not lateralized

b) Lateralised to poorer ear

c) Lateralised to better ear

d) Inconclusive

Correct Answer - B

Ans. is 'b' i.e., Lateralised to poorer ear [Ref: Dhingra Vie p. 26]

- Otitis media causes conductive hearing loss
- **Weber's test**
- Lateralized to poorer ear - conductive hearing loss
- Lateralized to better ear - SNHL
- No lateralization - Normal

561. Dix Hallpike manoeuvre is used to assess ?

a) Differentiate peripheral and central lesions of vestibular system

b) Differentiate cochlear and retrocochlear deafness

c) Assess neonatal hearing loss

d) Assess patency of Eustachian tube

Correct Answer - A

Ans. is'a.i.e., Differentiate peripheral and central lesions of vestibular system

Ref: Dhingra Sh/e p. 47)

- Hallpike test is a test for assessing vestibular function.
- It is particularly useful when patients complain of vertigo in certain head positions.
- It helps to differentiate peripheral and central lesions.

562. A 65 year old diabetic presents with necrosis of the external auditory meatus with foul smelling discharge. The probable organism associated with the condition is?

a) Hemophilus Influenzae

b) Pseudomonas Aeruginosa

c) Streptococcus Pyogens

d) E Coli

Correct Answer - B

Ans. is'b'i.e., Pseudomonas Aeruginosa

[Ref: Dhingra Sth/e p. 5g; pediatric otolaryngology p. 465]

- It is case of malignant otitis externa caused by pseudomonas.
- Malignant otitis externa, also called necrotizing external otitis, is a misnomer
- as it is not a neoplastic condition, rather it is an infectious condition.

563. Most accepted theory for the formation of secondary cholesteatoma:

a) Congenital

b) Squamous metaplasia

c) Ingrowth of squamous epithelium

d) Retraction pocket

Correct Answer - D

According to this theory, chronic negative middle ear pressure (which occurs due to poor Eustachian tube function and chronic inflammation of the middle ear) leads to retractions of the structurally weakest area of the tympanic membrane, the pars flaccida. Once the retractions form, the normal migratory pattern of the squamous epithelium is disrupted, resulting in the accumulation of keratin debris in the cholesteatoma sac..

564. Picket fence fever is a feature of -

a) Acute mastoiditis

b) Lateral sinus thrombophlebitis

c) Bell's Palsy

d) Atticoantral CSOM

Correct Answer - B

Ans. B. Lateral sinus thrombophlebitis

Ref: Dhingra Sth/e p. 95]

- Hectic Picket-Fence fi:pe of fever with rigor,

565. Tobe Ayer's Test is seen in ?

a) Acute mastoiditis with lateral sinus thrombosis

b) Maxillary cancer with spread to nasal cavity

c) Rhinosporidiosis

d) Jugular vein thrombosis

Correct Answer - A

Ans' is'a'i.e., Acute mastoiditis with lateral sinus thrombosis

[Ref: Dhingra sn/e p. 95]

566. Which sign is seen due to thrombosis of mastoid emissary veins?

a) Battle sign

b) Gresinger sign

c) Irwin Moore Sign

d) Hennebert's sign

Correct Answer - B

Ans. is'b'i.e., Gresinger sign

(Ref Dhingra 5th/e p. 95)

- Griesinger's sign: - Edema over the posterior part of mastoid due to thrombosis of mastoid emissary veins.

567. Edema over the mastoid is seen in -

a) Bell's Palsy

b) Lateral sinus thrombophlebitis

c) CSOM

d) ASOM

Correct Answer - B

Ans. is'b'i.e., Lateral sinus thrombophlebitis

(Ref: Dhingra sth/e p. 95)

- Edema over posterior post of mastoid (Griesinger's sign) is seen in lateral sinus thrombosis (signal sinus thrombosis).

568. A year old child presents with bilateral hearing difficulty. Impedance audiometry shows type B Curve. There is bilateral conductive hearing deficit. There is no sign of infection. Next step is ?

a) Wait and watch

b) Grommet

c) Myringotomy and aspiration

d) Canal wall down procedure

Correct Answer - A

Ans. is'a'i.e., wait and watch

[Ref: Dhingra 5th/e p. 72; ENT in primary care p/e p. 611

- The diagnosis is of serous otitis media.
- It is the most common cause of hearing loss in school children.
- Unless there is a sign of an infection, most health care providers will not treat SoM at first. Instead, they will recheck the problem in 2-3 months.

569. Mastoid tip is involved in:

a) Bezold abscess

b) Luc abscess

c) Subperiosteal abscess

d) Parapharyngeal abscess

Correct Answer - A

570. Most common cause of otomycosis ?

a) Histoplasma

b) Rhinosporidium

c) Aspergillus

d) Actinomyces

Correct Answer - C

Ans. is 'c' i.e., Aspergillus

Otomycosis

- Otomycosis, also called acute fungal otitis externa, describes a fungal or yeast infection of the external auditory meatus.
- Saprophytic fungi potentially residing in the ear canal include Aspergillus, Candida albicans, Phycomycetes, Rhizopus, Actinomyces, and Penicillium.
- Under certain conditions of increased heat, humidity, glucose concentration (diabetes), immunosuppression, or overuse of systemic or topical antibiotics and steroids, these saprophytic fungi can become pathogenic.
- Aspergillus niger accounts for 90% of otomycosis infections.
- Other common organisms are candida albicans (2nd most common) and Aspergillus fumigatus.
- Less common organisms are Phycomycetes, Rhizopus, Actinomyces and Penicillium

571. A patient presented with complaints of ipsilateral flushing and sweating with eating and salivation. He had a parotid gland surgery few weeks ago. Frey's syndrome is diagnosed. Frey's syndrome is related to:

a) Auriculotemporal nerve

b) Facial nerve

c) Abducens nerve

d) Glossopharyngeal nerve

Correct Answer - A

Frey syndrome:

- Aberrant nerve regeneration after parotid gland injury or surgery may result in ipsilateral flushing and sweating with eating and salivation.
- Sweating occurs in the distribution of the **auriculotemporal nerve** after an injury, abscess, or surgery in the parotid region.
- Frey's syndrome can be seen in infants and children, often following birth trauma with forcep delivery.

572. Facial nerve lies with which nerve in internal auditory meatus ?

a) Trigeminal nerve

b) Abducent nerve

c) Vestibulocochlear nerve

d) Hypoglossal nerve

Correct Answer - C

Ans. is.c'i.e., vestibulocochlear nerve

(Ref: BDc Sh/e vol. 3 p. 15-17)

573. In acoustic neuroma all are seen except:

a) Loss of corneal reflex

b) Tinnitus

c) Facial palsy

d) Diplopia

Correct Answer - C

Ans. C Facial palsy

In Acoustic Neuroma

1. Loss of corneal reflex is seen - due to the involvement of Trigeminal nerve
2. Tinnitus - due to pressure on cochlear nerve
3. Large tumors can cause diplopia

"Vestibular schwannomas, although inevitably grossly distort the VIIIth nerve, very rarely present as a VIIth nerve palsy. If there is a clinical evidence of a cerebellopontine angle lesion and if the VIIIth nerve is involved, alternative pathology is more likely":

Hence although Acoustic neuroma may involve the 7 nerve but complete palsy is never seen

574. Thumb sign in lateral X-ray of neck seen in:

a) Epiglottitis

b) Internal hemorrhage

c) Saccular cyst

d) Ca epiglottis

Correct Answer - A

In epiglottitis: A plain lateral soft tissue radiograph of neck shows the following specific features

- Thickening of the epiglottis—the **thumb sign**
- Absence of a deep well-defined vallecula—the **vallecula sign**

Steeple sign i.e. Narrowing of subglottic region is seen in chest X-ray of patients of laryngotracheobronchitis (i.e. croup).

575. A 14-year old boy presents with history of frequent nasal bleeding. His Hb was found to be 6.4 g/dL and peripheral smear showed normocytic hypochromic anemia. The most probable diagnosis is:

a) Juvenile nasopharyngeal angiofibroma

b) Hemangioma

c) Antrochoanal polyp

d) Carcinoma of nasopharynx

Correct Answer - A

A 14-year-old boy presents with history of frequent nasal bleeding. His Hb was found to be 6.4 g/dL and peripheral smear showed normocytic hypochromic anemia. The most probable diagnosis is juvenile nasopharyngeal angiofibroma.

As the age of the patient (14 years), Sex: (male) and presentation (nasal bleeding) all favour it.

In antrochoanal polyps, the presenting symptom is U/L nasal obstruction and not bleeding.

Age of the patient goes against Nasopharyngeal cancer.

As far as hematoma are concerned, a swelling is generally seen.

576. Most common presentation of nasopharyngeal carcinoma is?

a) Neck mass

b) Trotter's triad

c) Ophthalmoplegia

d) Glue ear

Correct Answer - A

Ans. is'a'i.e., Neck mass

(Ref: Dhingra Sn/e p. 265)

- Neck mass is the most common presentation (60-90%) due to cervical lymphadenopathy.

577. All the following are true of antrochoanal polyp except:

a) Common in children

b) Single and Unilateral

c) Bleeds on touch

d) Treatment involves Avulsion

Correct Answer - C

578. Juvenile angiofibroma confined to nasal cavity, preferred approach for surgery ?

a) Transnasal endoscopic

b) Transpalatal

c) Lateral rhinotomy

d) Transmaxillary

Correct Answer - A

Ans. is'a'i.e., Transnasal endoscopic

(Ref: Clinical otolaryngology p. 911)

579. Treatment of choice for nasal synachiae ?

a) Surgical removal of adhesions

b) Topical mitomycin

c) Nasal stent

d) None of the above

Correct Answer - A

Ans. is'a'i.e., Surgical removal of adhesions

- Removal of adhesion is the procedure of choice for nasal synechia.

580. Which sinus is the last sinus to appear radiologically on X-ray?

a) Maxillary sinus

b) Sphenoid sinus

c) Frontal sinus

d) Ethmoidal air cells

Correct Answer - C

Ans. is'c'i.e., Frontal sinus

[Ref Textbook Of The Ear, Nose And Throat By De Soum, C. Et Al.
p 394)

581. TESPAL done in -

a) Severe epistaxis

b) Rhinophyma

c) CA Maxillary Sinus

d) Multiple Antrochoanal polyps

Correct Answer - A

Ans. is'a' i.e., Severe epistaxis

[RefAm J Rhinol Allergy. 2012;26(1): 55-60.]

- Management of intractable spontaneous epistaxis.
 - TESPAL - transnasal endoscopic sphenopalatine artery ligation
- Indication:**
- Epistaxis not responding to conventional conservative management.
 - Posterior epistaxis

582. Lower limit of retropharyngeal space is at ?

a) C 7

b) Bifurcation of trachea

c) 4th esophageal constriction

d) None

Correct Answer - B

Ans. is'b'i.e., Bifurcation of trachea

- Retropharyngeal space is divided into two lateral spaces (space of gillette) by a fibrous band.
- Retropharyngeal space is limited above by the base of skull and below where the alar fascia fuses with buccopharyngeal fascia at the level of T4 and carina (bifurcation of trachea).

583. Epipharynx is also called -

a) Nasopharynx

b) Oropharynx

c) Laryngopharynx

d) Hypopharynx

Correct Answer - A

Ans. is'a'i.e., Nasopharynx [Ref: Thefree medical dictionary]

584. Which of the following arises from pharyngeal bursa-

a) Thornwald's disease

b) Craniopharyngioma

c) Chordoma

d) Lymphoma

Correct Answer - A

Ans: A. Thornwald's disease

(Ref: Scott-Brown's otolaryngology 10th/e vol-2 p. 161, 2122; Dhingra Sh/e p. 260]

Thornwald's disease (Pharyngeal bursitis):

- Infection of the pharyngeal bursa which is a median recess representing attachment of notochord to endoderm of the primitive pharynx.
- Pharyngeal bursa is located in the midline of posterior wall of the nasopharynx in the adenoid mass.
- Asymptomatic lesions require no treatment.
- If treatment is required then de-roofing the cyst (marsupialization) is usually sufficient, and can be performed via a transpalatal approach.

585. During laryngoscopy and intubation procedure, all of these are true, except:

a) A slight pressure may be applied at the cricoid cartilage

b) The laryngoscope is held in the right hand introduced from the right side of the patient

c) The neck is flexed with extension at the atlanto-occipital joint

d) After insertion of laryngoscope, it is levered on the upper incisor to pull up the tongue and visualize the vocal cords

Correct Answer - D

Ans: D. After insertion of laryngoscope, it is levered on the upper incisor to pull up the tongue and visualize the vocal cords

(Ref: Miller 81c, p I 666-7667. 71e p1587).

- The laryngoscope should never be hinged on the teeth to lift up the epiglottis.
- The patient is aligned in a "sniffing" position, i.e. neck (atlanto-axial joint) flexion and face extension (atlanto-occipital joint), at around 35° and 15° respectively

586. Rhinolalia clausa is associated with all of the following except:

a) Allergic rhinitis

b) Palatal paralysis

c) Adenoids

d) Nasal polyps

Correct Answer - B
Palatal paralysis

587. Schwartz operation is also called as:

a) Cortical mastoidectomy

b) Radial mastoidectomy

c) Fenestration operation

d) All

Correct Answer - A

588. Radical mastoidectomy includes all except:

a) Closure of the auditory tube

b) Ossicles removed

c) Cochlea removed

d) Exteriorisation of mastoid

Correct Answer - C

Ans. C Cochlea removed

Explanation

1. Radical mastoidectomy is a procedure to eradicate disease from middle ear and mastoid without any attempt to reconstruct hearing.

2. It is rarely done these days - Its only indications are:

- Malignancy of middle ear

- When cholesteatoma cannot be removed safely eg if it invades eustachian tube, round window or perilabyrinthine cells

If previous attempts to eradicate cholesteatoma have failed

Following steps are done in radical mastoidectomy:

1. Posterior meatal wall is removed and the entire area of middle ear, attic, antrum and mastoid is converted into a single cavity, by removing the bridge and lowering the facial ridge.

2. All remnants of tympanic membrane, ossicles (except the stapes foot plate) and mucoperiosteal lining are removed (Not cochlea)

3. Eustachian tube is obliterated by a piece of muscle or cartilage

4. The diseased middle ear and mastoid are permanently exteriorised for inspection and cleaning.

Remember: Bridge is the most posterosuperior part of bony meatal wall lateral to aditus and antrum, which overlies the Notch of Rivinus while facial ridge lies lateral to fallopian canal. Bridge is removed

and ridge is lowered in radical or modified radical operation.

589. Which of the following is not a complication of adenoidectomy?

a) Hyponasality of speech

b) Retro pharyngeal abscess

c) Velopharyngeal insufficiency

d) Grisel syndrome

Correct Answer - A

Ans. a. Hyponasality of speech

Causes of Hyponasality (Rhinolalia clausa)

- Common cold^Q
- Nasal allergy^Q
- Nasal polyp^Q
- Nasal growth^Q
- Adenoids^Q
- Nasopharyngeal mass^Q
- Familial speech pattern^Q
- Habitua^Q

Causes of Hypernasality (Rhinolalia aperta)

- Velopharyngeal insufficiency^Q
- Congenitally short soft palate^Q
- Submucous palate^Q
- Large nasopharynx^Q
- Cleft of soft palate^Q
- Paralysis of soft palate^Q
- Post-adenoidectomy^Q
- Oronasal fistula^Q

- Familial speech pattern^Q
- Habitual^Q

Complications of Adenoidectomy

Hemorrhage	Grisel syndrome
Injury to eustachian tube opening	Velopharyngeal insufficiency
Injury to pharyngeal musculature and vertebrae	Nasopharyngeal stenosis
	Recurrence

590. Sudden death occurring after maxillary sinus irrigation is due to:
DNB 10

a) Fat embolism

b) Pulmonary embolism

c) Air embolism

d) Maxillary artery thrombosis

Correct Answer - C
Ans. Air embolism

591. Schatzki's Ring is present at ?

a) Upper end of trachea

b) Lower end of trachea

c) Upper end of esophagus

d) Lower end of esophagus

Correct Answer - D

Ans. is 'd' i.e., Lower end of esophagus

Schatzki's ring

- It occurs at the junction of squamous and columnar epithelium at the lower end of oesophagus and has also been called **lower oesophageal ring**.
- Usually seen in patients above 50 years of age.
- Cause is unknown.
- Symptomatic patients complain of intermittent dysphagia and some may even present with bolus obstruction.
- It may be associated with hiatus hernia.
- Treatment is oesophageal dilatation.

592. All of the following are risk factors for malignant change in a gall bladder polyp, except:

a) Age > 60 years

b) Rapid increase in size of polyp

c) Size of polyp > 5 mm

d) Associated Gall stones

Correct Answer - C

Risk factors for malignant change in an asymptomatic patient with a gall bladder polyp are: polyp size greater than 10mm, age >50years, and presence of gallstones.

There is greater risk of malignancy in polyps in patients with primary sclerosing cholangitis. Endoscopic ultrasound helps in differentiating cholesterol polyps from malignant polyps.

Ref: Sherlock's Diseases of The Liver and Biliary System By James S. Dooley, Page 277;
Diseases of The Gallbladder and Bile Ducts: Diagnosis and Treatment By Pierre-Alain Clavien, John Baillie, John Baillie (FRCP (Glasg.)), Page 49

593. Which cancer has maximum propensity to spread to cervical lymph nodes ?

a) Nasopharyngeal carcinoma

b) Carcinoma of hard palate

c) Carcinoma of soft palate

d) Carcinoma of mandible

Correct Answer - A

Ans. is'a'i.e., Nasopharyngeal carcinoma

Ref: Clinical oncology &/e p. 741)

- " Nasopharynx is a centrally located structure with extensive submucosal capillary lymphatic plexus.
- Partly due to this extensive lymphatic existence, NPC has a propensity of lymph node involvement in its early stages.
- Clinical evident cervical lymphadenopathy is seen in more than 86% of the patients with nasopharyngeal carcinoma"

594. A 53 year old male man complains of pain around his cheek and *neck*. On examination there is pus pouring out from his Stenson's duct. Which gland is involved?

a) Parotid gland

b) Submandibular gland

c) Sublingual Gland

d) Lacrimal Gland

Correct Answer - A

Ans. is 'a' i.e., Parotid gland

(Ref: Ten Cate's Oral Histology, Nanci, Elsevier, 2013, p. 255)

- Pus from Stensen's duct + Parotid gland
- Pus from Wharton duct + Submandibular gland

595. A 24 year old girl with history of head trauma presented with multiple lacerations on the face and eyelids and base of skull fracture. It was noticed she wasn't able to pass tears. The probable cause is injury to?

a) lacrimal Gland

b) Superior Canaliculus

c) Inferior Canaliculus

d) Upper eyelid

Correct Answer - C

Ans. is 'c' i.e., Inferior Canaliculus

[Ref: Hawes M, Dortzbach R. Trauma of the lacrimal drainage system.]

Linberg L ed. Lacrimal Surgery. New York: Churchill Livingstone; 1988. 241-262)

- The lacrimal drainage apparatus consists of the puncta on the upper lid and the lower lid, the canaliculi, the common canaliculus, lacrimal sac, and the nasolacrimal duct.
- Canalicular lacerations are the most frequent cause of injury to the lacrimal system.
- The inferior canaliculus is involved in more than 50-75% of cases. The horizontal lower limb is the most frequently involved site.

596. True regarding "Preauricular sinus" is:

a) Improper fusion of auricular tubercles

b) Persistent opening of first branchial arch

c) Autosomal recessive pattern

d) All

Correct Answer - A

- Failure of fusion of 1st and 2nd arch leads to the formation of preauricular sinus.
- It is commonly seen at the root of helix
- It is a blind track lined by squamous epithelium
- It may get repeatedly infected causing purulent discharge
- Abscess may also form
- Treatment is surgical excision of the track if the sinus gets repeatedly infected.

597. External auditory canal atresia has been associated with all of the following except?

a) Low Birth Weight

b) Intrauterine infections

c) Intrauterine toxins

d) Polyhydramnios

Correct Answer - D

Ans. is'd'i.e., Polyhydramnios

[Ref: Lambert PR. Major congenital ear malfunction* surgical management and results. Ann Otol rhinol Laryngol. 1988 Nov-Dec. 97(6 Pt 1):641-91]

External auditory canal atresia:

- The precise etiology of the failure of EAC canalization is not known'
- Associations have been postulated between EACA and low birth weight, intrauterine trauma, toxins, infection.
- Genetic defects are being identified for several craniofacial anomalies.

598.

Narrowest part of infantile larynx is:

a) Supraglottic

b) Subglottic

c) Glottic

d) None of the above

Correct Answer - B

The diameter of cricoid cartilage is smaller than the size of glottis, making subglottis the narrowest part

599. Dioptric power is related -

a) Directly to square of focal length

b) Inversely to focal length

c) Directly to focal length

d) Inversely to square of focal length

Correct Answer - B

Answer- B. Inversely to focal length

- Optical power (also referred to as dioptric power, refractive power, focusing Power, or convergence Power) is the degree to which a mirror, or other optical system converges or diverges light.

600. Most important use of cross cylinder is -

a) Verify the strength and axis of the cylinder

b) Refining the sphere

c) Binocular balancing

d) Retinoscopy

Correct Answer - A

Answer- A. Verify the strength and axis of the cylinder

The proper subjective refraction includes three steps-

1) Subjective verification of refraction

- The strongest convex lens and the weakest concave lens providing best vision should be chosen in patients with hypermetropia and myopia respectively.

2) Subjective refining of refraction

A) Refining the cylinder : - Cylinder can be refined by either crosscylinder or by astigmatic fan test.

- Jackson's cross cylinder test (more commonly used)- crosscylinder is used to verify the strength and axis of the cylinder prescribed.
 - Astigmatic fan test:- It is used to confirm the cylindrical correction.
- B) Refining the sphere- The fogging technique, Duochrome test, Pin-hole test.

3) Subjective binocular balancing.

601. Snellen's chart is used to test:

a) Vision

b) Refraction

c) Presbyopia

d) Colour blindness

Correct Answer - A
Ans. Vision

602. Investigation of choice of vitreous hemorrhage is -

a) Ultrasound biomicroscopy

b) A-Scan

c) B-Scan

d) OCT

Correct Answer - C

Answer- C. B-Scan

- B- scan USG is particularly helpful in diagnosing vitreous hemorrhage.

603. Arden index is related to -

a) ERG [Electroretinogram]

b) EOG [Electroculogram]

c) VER [Visual Evoked response]

d) Perimetry

Correct Answer - B

Answer- B. EOG [Electroculogram]

Arden index is related to Electrooculography

- Interpretation of results:- Results of EOG are interpreted by finding out the Arden ratio as follows :
- Normal curve values are 185 or above.
- Subnormal curve values are less than 150.
- Flat curve values are less than 125.

604. All of the following are characteristics of the image formed on indirect ophthalmoscopy except that it is:

a) Virtual

b) Inverted

c) Magnified

d) Formed between the convex lens and the observer

Correct Answer - A
Ans. Virtual

605. Fincham test is used for -

a) Differentiating open angle from angle closure glaucoma

b) Differentiate halos due to angle closure glaucoma and immature cataract

c) Classify glaucomatous optic atrophy

d) Differentiate granulomatous and non granulomatous uveitis

Correct Answer - B

Answer- B. Differentiate halos due to angle closure glaucoma and immature cataract

- 'Fincham's test is used to differentiate the halos of PACG and immature cataract.
- In this a stenopaeic slit is passed across the pupil → Glaucomatous halo remains intact, while a halo due to cataract is broken up into segments.

606. Avascular structure of the eye is -

a) Conjunctiva

b) Ciliary body

c) Cornea

d) Retina

Correct Answer - C

Answer- C. Cornea

- Lens and cornea are avascular structures of eye, that's why fluorescein angiography can't be used to identify lesions.

607. Ratio of diameter of retinal arteriole to retinal venule is -

a) 3:2

b) 2:3

c) 3:1

d) 1:3

Correct Answer - B

Answer- B. 2:3

- The ratio has been normally regarded as 2 : 3

608. What is stereops is -

a) Perception of different colours

b) Perception of depth of vision

c) Perception of Peripheral visual fields

d) Perception of size of an object

Correct Answer - B

Answer- B. Perception of depth of vision

- Stereopsis is a term that is most often used to refer to the perception of depth and 3-dimensional structure obtained on the basis of visual information deriving from two eyes by individuals with normally developed binocular vision.

609. Ciliary muscle is supplied by -

a) Short ciliary nerves

b) Long ciliary nerves

c) Superior cervical ganglion

d) Abducens

Correct Answer - A

Answer- A. Short ciliary nerves

- The ciliary muscle receives only parasympathetic fibers from the short ciliary nerves that arise from the ciliary ganglion.
- These postganglionic fibers are part of cranial nerve V (Nasociliary nerve of the trigeminal).

610. Axial myopia is -

a) Increase in antero-posterior length of the eyeball

b) Increased curvature of cornea

c) Anterior placement of crystalline lens

d) Increase in refractive index of crystalline lens

Correct Answer - A

Answer- A. Increase in antero-posterior length of the eyeball

- Ametropia (a condition of refractive error) is defined as a state of refraction, wherein the parallel rays of light coming from infinity are not focused on retina, rather focused either in front (in myopia) or behind (in hypermetropia) the sensitive layer of retina.
causes of ametropia are : -
- Axial- It is the commonest form of ametropia (both myopia and hypermetropia).

611. Anisocoria in homers syndrome is due to

a) Oculo sympathetic palsy

b) Oculo parasympathetic palsy

c) Oculomotor nerve palsy

d) Abducens nerve palsy

Correct Answer - A

Answer- A. Oculo sympathetic palsy

Horner's syndrome is oculo sympathetic palsy.

- Horner's syndrome consists of classical triad of ipsilateral:-
 1. Ptosis,
 2. Miosis,
 3. Anhydrosis (loss of sweating)
- Other features are :- Loss of cilio-spinal reflex, Enophthalmos, Heterochromia (ipsilateral iris is of light colour), the pupil is slow to dilate, slight elevation of inferior eyelid, normal pupillary reflex.

612. Optic vesicle is derived from -

a) Endoderm

b) Mesoderm

c) Neuroectoderm

d) Surface Ectoderm

Correct Answer - C

Answer- C. Neuroectoderm

- An outgrowth from prosencephalon forms optic vesicle (neuroectodermal structure).
- Proximal part of optic vesicle becomes constricted and elongated to form optic stalk
- Growing optic vesicle comes in contact with surface ectoderm which is thickened to form lens placode.

613. Visual fields diagnosed by -

a) Pachymetry

b) Perimetry

c) Corneal topography

d) Optical coherence tomography

Correct Answer - B

Answer- B. Perimetry

.. Confrontation test.

?. Perimetry:- Kinetic perimetry, or automated perimetry

614. Sudden induced hypermetropia is seen in -

a) Trauma

b) Sudden blood sugar level change in diabetics

c) SLE

d) Rheumatoid arthritis

Correct Answer - B

Answer- B. Sudden blood sugar level change in diabetics

- Refractive changes in diabetics are due to alterations in the power of the lens.
- Myopia with hyperglycaemia was then explained as being due to osmotic hydration of the lens due to salt retention.
- Rosen accounted for hyperopia with hyperglycaemia by assuming that hydration must involve the nucleus as well

615. Centrocaecal scotoma is seen in -

a) Optic neuritis

b) Wolfram syndrome

c) Papilloedema

d) CRAO

Correct Answer - A

Answer- A. Optic neuritis

Centrocaecal scotoma is seen in -

1. Optic nerve damage.
2. Optic neuritis.
3. Tobacco amblyopia.

616. Stem cells are present where in cornea -

a) Limbus

b) Stroma

c) Epithelium

d) Descmet's membrane

Correct Answer - A

Answer- A. Limbus

- Limbal stem cells (also called corneal epithelial stem cells) are stem cells located in the basal epithelial layer of the corneal limbus.
- Proliferation of limbal stem cells maintains the cornea; for example, replacing cells that are lost via tears.
- Limbal stem cells also prevent the conjunctivalepithelial cells from migrating onto the surface ofthe cornea.

617. Goblet cells are seen in -

a) Cornea

b) Conjunctiva

c) Retina

d) Vitreous

Correct Answer - B

Answer- B. Conjunctiva

- Goblet cells : - Occur throughout the conjunctiva, especially the plica semilunaris singly or in association with epithelial crypts.
- Goblets cells are most dense nasally and least dens in upper temoral fornix. Goblet cells are absent in palpebral mucocutaneous junction and the limbus.

618. Phleclenular conjunctivitis is -

a) Type I reaction

b) Type II reaction

c) Type III reaction

d) Type IV reaction

Correct Answer - D

Answer- D. Type IV reaction

- It is type IV (delayed) hypersensitivity

619. Herbert's pits are seen in

a) Trachoma

b) Spring catarrh

c) Phlyctenular conjunctivitis

d) Sarcoidosis

Correct Answer - A
A. i.e. Trachoma

620. Herpetic keratitis is treated by

a) Analgesics

b) Atropine

c) Steroids

d) Idoxuridine

Correct Answer - D

D i.e. Idoxuridine

- Drug of choice for herpetic keratitis is *Acyclovir* Q (topical)
- Other antiviral drugs used are
 - *Idoxuridine*
 - Trifluorothyrnidine
 - Vidarabine

621. Pulmonary Compliance is decreased in all of the following conditions, Except:

a) Pulmonary Congestion

b) COPD

c) Decreased Surfactant

d) Pulmonary Fibrosis

Correct Answer - B

Answer is B (COPD)

Pulmonary Compliance is increased in Emphysema (COPD)

Pulmonary Congestion, decreased surfactant and pulmonary fibrosis are all associated with reduced pulmonary Compliance.

622. Welder's flash is due to -

a) Infrared rays

b) UV rays

c) Blue - violet light

d) All of the above

Correct Answer - B

Answer- B. UV rays

- Welder's flash is photophthalmia or photokeratitis.

623. Vitamin deficiency causing optic atrophy -

a) Vitamin A

b) Vitamin B

c) Vitamin C

d) Vitamin D

Correct Answer - B

Answer- B. Vitamin B

- Specific deficiencies of vitamin B-12 (cyanocobalamin), thiamine (vitamin B-1), other B-complex vitamins (riboflavin, niacin, and pyridoxine), and folic acid, as well as reduced systemic levels of other proteins with sulfur-containing amino acids, may play a role in optic atrophy.

624. Neovascularization in uveal tissue [Rubeosis Iridis] is most commonly caused by

a) Diabetic Retinopathy

b) CRVO

c) CRAO

d) Choroidal melanoma

Correct Answer - A

Answer- A. Diabetic Retinopathy

It is a secondary angle closure glaucoma which results due to formation of neovascular membrane over the iris i.e., neovascularization of iris (rubeosis iridis).

Causes of rubeosis iridis are:-

- Common :- Diabetic retinopathy (most common cause), central retinal vein occlusion), Eale's disease, sickle-cell retinopathy.

625. Which glaucoma is associated with cataract

a) Phacomorphic glaucoma

b) Neovascular glaucoma

c) Phacoanaphylactic glaucoma

d) Buphthalmos

Correct Answer - A

Answer- A. Phacomorphic glaucoma

- Phocomorphic glaucoma :- It occurs in intumescent stage of cataract. The swollen lens leads to relative pupillary block (pupillary block glaucoma), iris bombe and angle closure. It is a type of angle closure glaucoma and anterior chamber is very shallow.

626. Which route is most preferred for Endophthalmitis treatment

a) Oral antibiotic

b) Intravenous antibiotic

c) Topical antibiotic

d) Intravitreal antibiotic

Correct Answer - D

Answer- D. Intravitreal antibiotic

- Intravitreal antibiotics is the most preferred mode of treatment.

627. Non granulomatous uveitis- all are causes except

a) Ankylosing Spondylitis

b) Sarcoidosis

c) Juvenile Idiopathic Arthritis

d) Posner Schlossman Syndrome

Correct Answer - B

Answer- B. Sarcoidosis

628. Cyclosporine is used in the management of -

a) Disciform Keratitis

b) Anterior Iridocyclitis

c) Rhegmatogenous retinal detachment

d) Phacomorphic glaucoma

Correct Answer - A

Answer- A. Disciform Keratitis

Topical steroids (Drugs of choice)

- Mydriatic - cycloplegics: Atropine (Drug of 2nd choice)
- NSAIDs

629. Cupuliform cataract starts from

a) Posterior subcapsular region

b) Anterior capsule

c) Near nucleus

d) Annularly

Correct Answer - A

Answer- A. Posterior subcapsular region

- Cupuliform senile cortical cataract (Posterior subcapsular) : Here a saucer shaped opacity develops just below the capsule. Usually in the central part of posterior cortex (posterior subcapsular cataract), which gradually extend outwards.
- Cupuliform cataract lies right in the pathway of the axial rays and thus causes an early loss of visual acuity.

630. Christmas tree cataract is seen in

a) Blunt trauma

b) Diabetes

c) Galactosemia

d) Myotonic Dystrophy

Correct Answer - D

Answer- D. Myotonic Dystrophy

631. All of the following are parts of optic nerve except

a) Intraorbital Part

b) Intracranial Part

c) Cisternal Segment

d) Intra cavernal Part

Correct Answer - D

Answer- D. Intra cavernal Part

Optic nerve is about 47-50 mm in length and can be divided into 4 parts :

1. Intraocular part (1 mm)
2. Intraorbital part (30 mm)
3. Intracranial part (6-9 mm)
4. Intra cranial part (10 mm)

632. Tomato ketchup retina is seen in

a) Central retinal artery occlusion

b) Central retinal vein occlusion

c) Coats disease

d) Side cell retinopathy

Correct Answer - B

Answer- B. Central retinal vein occlusion

- Tomato ketchup or splash tomato fundus is seen in central retinal vein occlusion.

633. All are seen in CMV retinitis except

a) Immunosuppression

b) Brush-fire appearance Pattern

c) Crack mud appearance

d) Perivasculitis

Correct Answer - C

Answer- C. Crack mud appearance

- CMV retinitis is the most common ophthalmic manifestation of CMV.
- There is characteristic hemorrhagic, full thickness retinitis.
- Occuring as a congenital infection in infants or an opportunistic infection in the immunocompromised host.
- CMV retinitis is a white granular geographic lesion that clears centrally as it enlarges, leaving a quiet central area of retinal atrophy and mottled pigment epithelium. This has also been described as "brush-fire pattern.
- Perivascular retinitis- Frosted branch angitis with retinal perivasculitis.

634. Epiretinal membrane is seen in

a) Posterior vitreous detachment

b) Optic neuritis

c) Papilloedema

d) Glaucomatous optic atrophy

Correct Answer - A

Answer- A. Posterior vitreous detachment

- Epiretinal membrane is a disease of the eye in response to changes in the vitreous humor or more rarely, diabetes. It is also called macular pucker.
- Immune system response to protect the retina, cells converge in the macular area as the vitreous ages and pulls away in posterior vitreous detachment (PVD).

635. Pseudoproptosis caused by

a) Buphthalmos

b) Meningioma of optic nerve

c) Orbital cellulitis

d) Dermoid cyst

Correct Answer - A

Answer- A. Buphthalmos

causes are:

- Buphthalmos (congenital glaucoma),
- High myopia,
- Upper lid retraction,
- Paralysis of the extrinsic muscles,
- Stimulation of muller muscle by cocaine,
- Shallow orbit as in craniofacial dysostosis

636. Khodadaust Line indicates

a) Sympathetic ophthalmia that has poor prognosis

b) Rejection of corneal graft

c) Poor prognosis of Acute congestive glaucoma

d) Lesion at optic chiasma

Correct Answer - B

Answer- B. Rejection of corneal graft

- A Khodadoust Line or chronic focal transplant reaction is a medical sign that indicates a complication of corneal graft surgery on the eye. This method is called Khodadoust Line.

637.

In ophthalmology, muscle resection leads to

a) Weakening of muscle

b) Strengthening of muscle

c) Muscle paralysis

d) No effect

Correct Answer - B

Answer- B. Strengthening of muscle

Strengthening of weak/paralyzed ocular muscle is done by :-

1. Resection
2. Tucking
3. Advancement
4. Transposition

638. Distichiasis is

a) Increased number of lashes in the lower eyelid

b) Growth of eyelashes from Meibomian Orifices

c) Hyperpigmentation of eyelashes

d) Increased thickness of eyelashes

Correct Answer - B

Answer- B. Growth of eyelashes from Meibomian Orifices

- Distichiasis is a rare disorder defined as the abnormal growth of lashes from the orifices of the meibomian glands on the posterior lamella of the tarsal plate.

639. Exotropia occurs due to

a) Third nerve palsy

b) Optic neuritis

c) Abducens injury

d) Papilloedema

Correct Answer - A

Answer- A. Third nerve palsy

Causes and associations of exotropia (Divergent squint)

- Third nerve palsy
- Congenital
- Previous strabismus surgery
- Thyroidophthalmopathy
- Iatrogenic trauma following retinal detachment surgery

640. The laser used in LASIK is

a) Argon diode laser

b) Nd:YAG Laser

c) Excimer laser

d) Double frequency Nd:YAG Laser

Correct Answer - C

Answer- C. Excimer laser

- Krypton red Excimer (argon fluoride)- Photorefractive keratectomy (PRK), phototherapeutic keratectomy (PTK), LASIK, LASEK

641. Sunset sign is seen in

a) Optic neuritis

b) Hydrocephalus

c) Thyroid ophthalmopathy

d) Orbital cellulitis

Correct Answer - B

Answer- B. Hydrocephalus

- Sun set sign: The scleraa revisible between theupper eyelid and their is, Sun setting sign is seen usually in hydrocephalus due to loss of upward conjugate gaze caused by raised intracranial pressure (ICP).

642. Injection of muscarinic agonist in conjunctival sac will lead to all of the following except

a) Conjunctival and uveal hyperemia

b) Ciliary spasm

c) Miosis

d) Decreased secretion from ciliary epithelium

Correct Answer - D

Answer- D. Decreased secretion from ciliary epithelium

Effects of muscarinic agents-

1. Blood vessel dilation causing conjunctival and uveal hyperemia
2. Ciliary spasm
3. Miosis
4. Increased aqueous outflow due to opening of trabecular meshwork due to ciliary muscle contraction

643. Copper foreign body in the eye, which of the following will be seen

a) Cataract resembling petals of flower

b) Fleisher ring

c) Open angle of glaucoma

d) Pigmentary degeneration of retina

Correct Answer - A

Answer- A. Cataract resembling petals of flower

- Grayish-green/golden brown discoloration of peripheral cornea called Kayser-Fleisher ring.
- Sunflower (Petal of flower) cataract due to deposition of copper under the posterior capsule of the lens.

644. Type of cataract in chalcosis is

a) Sunflower cataract

b) Blue dot Cataract

c) Snowflake cataract

d) Polychromatic lustre

Correct Answer - A

Answer- A. Sunflower cataract

645. How many mm from the limbus is the safest site of intravitreal injection?

a) 1-2 mm

b) 2-3 mm

c) 3-4 mm

d) 4-5 mm

Correct Answer - C

Answer- C. 3-4 mm

Intravitreal injection (Distance from Limbus)

1. For aphakics-3mm
2. For pseudophakes-3.5mm
3. For phakics- 4mm

646. What is the most common eye pathology in rheumatoid arthritis?

a) Scleritis

b) Episcleritis

c) Keratoconjunctivitis sicca

d) Anterior uveitis

Correct Answer - C

Answer- C. Keratoconjunctivitis sicca

- MC ocular manifestation of RA- Dry eye(Keratoconjunctivitis sicca).

647. Wolfram syndrome is characterized by all except

a) Optic atrophy

b) Diabetes mellitus

c) Diabetes Insipidus

d) Parathyroid hyperplasia

Correct Answer - D

Answer- D. Parathyroid hyperplasia

The Wolfram syndrome is a hereditary optic atrophy.

- It presents between the ages of 5-21 years.
- This is also referred to as "DIDMOAD" i.e. Diabetes Insipidus, Diabetes Mellitus, Optic Atrophy and Deafness

648. Antiglaucoma drug contraindicated in acute uveitis

a) Pilocarpine

b) Timolol

c) Brimonidine

d) Latanoprost

Correct Answer - A

Answer- A. Pilocarpine

- Cholinomimetic (Pilocarpine) :- Uveitis

649. What is the partial pressure of oxygen at 760mmHg atmospheric pressure?

a) 76

b) 160

c) 120

d) 130

Correct Answer - B

The pressure of a gas is proportional to its temperature and the number of moles per volume.

P= nRT/V, where,

n= number of moles

P= Pressure

R = Gas constant

T= Absolute temperature

V= Volume

The pressure exerted by one gas in a mixture of gases is equal to the total pressure times the fraction of the total amount of gas it represents.

The partial pressure of oxygen in dry air is therefore $0.21 \times 760 = 160$ mm of Hg at sea level.

Ref: Ganong, 23rd Ed, Page 588

650. Ellis curve is seen in -

a) Pheumothorax

b) Pleural effusion

c) Pleural effusion

d) Asthma

Correct Answer - B

Answer- B. Pleural effusion

- Ellis's S-shaped curve in pleural effusions does not exist today. Actually, it is a radiological observation (highest level of fluid in axilla).
- The upper limit of fluid in pleural effusion is horizontal like hydropneumothorax.

651. Best investigation when there is clinical suspicion of pulmonary embolism in a patient is-

a) D-Dimmer Assay

b) Multidetector CT angiography

c) Doppler ultrasound

d) Catheter angiography

Correct Answer - B

Answer is B (Multidetector CT Angiography):

For patients with strong clinical suspicions/high likelihood of DVT. Imaging tests are obligatory.

CT scan with intravenous contrast (Multidetector CT Angiography) is the test of choice for the diagnosis of PE.

Invasive catheter based pulmonary Angiography is highly specific but reserved for patients with unsatisfactory chest CT or those who require an interventional procedure like catheter directed thrombolysis or embolectomy.

652. A 60 year old woman with fracture neck of femur presents to the emergency department a few days after her injury with sudden onset breathlessness and chest pain. The most likely diagnosis is:

a) Myocardial Infarction

b) Deep Vein Thrombosis

c) Pulmonary Embolism

d) Pleuritis

Correct Answer - C

Answer is C (Pulmonary Embolism):

Sudden onset of Dyspnea and Chest Pain following injury, surgery or immobilization strongly suggests a diagnosis of pulmonary thromboembolism.

653. Biot breathing is seen in -

a) Flail chest

b) Uremia

c) High altitude

d) Lesion in the brain

Correct Answer - D

Answer- D. Lesion in the brain

Biot's breathing

- Characterized by irregularly irregular breathing with sudden apnea.
- Seen in CNS lesions.
- Indicates increased intracranial Pressure.

654. 65 yr old man presented with hemoptysis and grade III clubbing. The probable diagnosis of the patient is?

a) Non small cell lung Ca

b) Small cell cancer of lung

c) Tuberculosis

d) Sarcoidosis

Correct Answer - A

Answer- A. Non small cell lung Ca

- Hemoptysis in 65 year old along with grade III clubbing suggests Non small cell carcinoma lung.
- Clubbing in lung cancer is characteristically associated with Non small cell carcinoma lung.

655. Hypoxic pulmonary vasoconstriction due to -

a) Irreversible pulmonary vasoconstriction hypoxia

b) Reversible pulmonary vasoconstriction due to hypoxia

c) Direct blood to poorly ventilated areas

d) Occurs hours after pulmonary vasoconstriction

Correct Answer - B

Answer- b. Reversible pulmonary vasoconstriction due to hypoxia

- Hypoxic pulmonary vasoconstriction (HPV) is an adaptive vasomotor response to alveolar hypoxia which redistributes blood to optimally ventilated lung segments by an active process of 'vasoconstriction, particularly involving the small muscular resistance pulmonary arteries (PA).

656. FEV1/FVC is decrease in:

a) Asthma

b) Kyphosis

c) Scoliosis

d) Fibrosis

Correct Answer - A

Answer is A (Asthma):

Decreased FEV1/FVC suggests a diagnosis of Obstructive Lung Disease.

Amongst the options provided Asthma is the only condition that leads to Obstructive Pattern of Lung Disease and hence is the answer of choice Kyphosis, Scoliosis and Fibrosis are Restrictive Lung Diseases that are characterized by Normal or Elevated FEV1/FVC ratios.

657. A wave in JVP is due to ?

a) Atrial systole

b) Atrial diastole

c) Ventricular systole

d) Ventricular diastole

Correct Answer - A
Ans. is 'a' i.e., Atrial systole

658. A female has a SBP = 130 mm Hg and DBP = 100 mm Hg on two consecutive occasions, Best treatment is -

a) Rest

b) Sedative

c) Anti-hypertensive drugs

d) Error in BP Machine

Correct Answer - C

Answer- C. Anti-hypertensive drugs

- Treatment with antihypertensive is wanted in all patients with isolated diastolic hypertension who have evidence of end organ damage most experts also suggest the use of antihypertensive drugs in patients without end organ damage.

659. Most common cause of unilateral pedal edema

a) Pregnancy

b) Lymphedema

c) Venous insufficiency

d) Milroy disease

Correct Answer - C

Ans. is 'c' i.e., Venous insufficiency

The most likely cause of leg edema in patients over age 50 is venous insufficiency.

- Venous insufficiency affects up to 30% of the population, whereas heart failure affects only approximately 1%.
 - The most important cause of unilateral pedal edema is venous insufficiency.
- Milroy's disease :**
- The defect in Milroy's disease is present from birth and symptoms are usually first experienced in childhood.
 - *The most common problem is one-sided leg swelling, unilateral edema, which is progressive and can affect both legs.*
 - *Impaired intestinal lymphatics can cause steatorrhea due to impaired transport of chylomicrons*

660. A patient presented with deficiency of thiamine. What could be possible outcome ?

a) Delayed wound healing

b) Cardiac abnormality

c) Memory loss

d) Gingival bleeding

Correct Answer - B

Answer- B. Cardiac abnormality

- .. Wet beriberi: Cardiovascular symptoms with high-output CHF.
- ?. Dry beri beri: Motor and sensory neuropathy.

661. A 1 year old male child is having a Heart Rate 40/min. BP 90/60. His serum Potassium = 6.5. What is the next best management -

a) Ipratropium

b) Adrenaline

c) Sodium bicarbonate

d) Calcium gluconate

Correct Answer - D

Answer- D. Calcium gluconate

- Calcium gluconate is the fastest acting agent among the agents used in the t/t of hyperkalemia.
- It acts within minutes but an important point to note is that it does not cause transcellular movement of potassium, instead it acts on cardiac cell membrane.

662. Isolated deletion of which chromosome causes myelodysplastic syndrome -

a) 2q

b) 5q

c) 8q

d) 11 q

Correct Answer - B

Answer- B. 5q

- MDS is frequently associated with chromosomal abnormalities including monosomy 5 and 7, deletion of 5q and 7q, trisomy 8 and deletion of 20q.

663. Apheresis is -

a) Selective separation of components of blood

b) Preventing blood transfusion infections [HIV, HBV]

c) Separation of platelets from plasma

d) Isolating organisms from mixed culture

Correct Answer - A

Answer- A. Selective separation of components of blood

- Apheresis is the general technique of extracorporeal blood purification whereby one constituent is removed and the remainder is returned to the patient.

664. Heavy chain disease with kappa light chains in urine -

a) Mu chain disease

b) Seligman disease

c) Franklin disease

d) Waldenström macroglobulinemia

Correct Answer - A

Answer- A. Mu chain disease

- Mu HCD: Mu chain with associated light chain.

665. ADAMTS deficiency is seen in -

a) Essential thrombocythemia

b) ITP

c) Thrombotic thrombocytopenic purpura

d) CLL

Correct Answer - C

Answer- C. Thrombotic thrombocytopenic purpura

- Patients with TTP are deficient in an enzyme called ADAMTS (This enzyme is also known as vWF metalloprotease).

666. All are true about Diabetes insipidus except?

a) Low urine osmolality

b) Dilutional Hyponatremia

c) Water deprivation test is used for diagnosis

d) Polyuria

Correct Answer - B

Answer- B. Dilutional Hyponatremia

- In diabetes insipidus, the serum osmolality is increased with inappropriately low urine osmolality.
- There is polyuria, as ADH deficiency causes excessive water loss in urine.

667. All are correct about SIADH except :

a) Normal KFT

b) Low uric acid

c) Relative hypernatremia

d) Normal BP with gain of water

Correct Answer - C

Answer- C. Relative hypernatremia

- Serum potassium and Bicarbonate levels are normal in SIADH (hypokalemia and metabolic acidosis suggests, diuretic therapy or vomiting) Hyponatremia, Decreased serum osmolality

668. Chronic hemodialysis in ESRD patient is done

a) Once per week

b) Twice per week

c) Thrice per week

d) Daily

Correct Answer - C

Ans. is 'c' i.e., Thrice per week

- For the majority of patients with ESRD, between 9 and 12 h of dialysis are required each week, usually divided into three equal sessions.
- Current targets of hemodialysis
- Urea reduction ratio (the fractional reduction in blood urea nitrogen per hemodialysis session) of > 65-70%.
- Body water-indexed clearance x time product (KT/V) above 1.2 or 1.05.

669. CSF is absorbed by -

a) Choroid plexus

b) Sub-arachnoid granulations

c) Dura matter

d) Pia matter

Correct Answer - B

Answer- B. Sub-arachnoid granulations

- CSF is produced by the choroid villi in the lateral ventricles and third ventricles.
- CSF is reabsorbed via the arachnoid granulations back into the blood stream.

670. Which of the following is not a test for integrity of 9th and 10th nerve -

a) Position of uvula

b) Palate symmetry

c) Taste

d) Tongue Protusion

Correct Answer - D

Answer- D. Tongue Protusion

- Protusion of the tongue is used for the assessment of the twelfth cranial nerve.

671. Cranial Nerve 8 palsy causes all EXCEPT:

a) Gag reflex

b) Vertigo

c) Motion sickness

d) Tinnitus

Correct Answer - A

Answer- A. Gag reflex

Gag-reflex is for 9th cranial nerve.

- Clinical features of 5th cranial nerve damage are -
 - .. Cochlear part: - Hearing loss (deafness), Tinnitus
 - .. Vestibular part: - Vertigo, Balance disturbances

672. Pure word blindness occurs due to lesion in

a) Anterior cerebral artery

b) Posterior cerebral artery

c) Middle cerebral artery

d) Spinal artery

Correct Answer - B

Answer- B. Posterior cerebral artery

- Pure alexia almost always involves an infarct to the left posterior cerebral artery which perfuses the splenium of the corpus callosum and left visual cortex, among other things)

673.

A patient is unable to solve mathematical calculations, which part of his brain is damaged?

a) Temporal lobe

b) Frontal lobe

c) Parietal lobe

d) Occipital lobe

Correct Answer - C

Answer- C. Parietal lobe

Features of parietal lobe lesions :-

- Dominant hemisphere: - Dysphasia/Aphasia, Dyscalculia, dyslexia, Apraxia, Gerstmann syndrome.
- Non-dominant hemisphere : - Hemineglect, extinction phenomenon, spatial disorientation, constructional & dressing apraxias, anosagnosia.

674. Incorrect about dementia pugilistica

a) Seen in boxers

b) Difficulty in gait

c) Decreased cognition

d) Nystagmus

Correct Answer - D

Answer- D. Nystagmus

Dementia Pugilistica (DP), otherwise known as 'punch-drunk syndrome' or 'boxer's dementia,' is a form of dementia that originates with repeated concussions or other traumatic blows to the head.

Symptoms of Dementia Pugilistica

- Progressively declining cognitive ability
- Physical tremors
- Difficulty in speech
- Pathological feelings of jealousy or paranoia
- Short-term memory loss
- Loss of physical coordination
- Changes in gait

675. Duret haemorrhage is seen in:

a) Lung

b) Endocardium

c) Middle ear

d) Brain

Correct Answer - D

Ans is `d' i.e. Brain

Duret haemorrhages are small brainstem hemorrhages secondary to descending transtentorial herniation and brainstem compression caused due to increased ICT.

676.

The submerged part of cerebral cortex is

a) Insula

b) Broadman area

c) Corpus collosum

d) Piriform sulcus

Correct Answer - A

Answer- A. Insula

Functions of insula

- Insula provides an emotional context that is suitable for a given sensory experience.
- It has also been shown to be associated with pain processes as well as with several basic emotions such as anger, fear, disgust, joy.

677. Two point discrimination test exhibits maximum sensitivity in -

a) Toes

b) Shin

c) Finger pads

d) Soles

Correct Answer - C

Answer- C. Finger pads

Most sensitive areas for two point discrimination

- Tip of the tongue
- Finger tips

678. Hemiballismus is due to lesion in

a) Ipsilateral caudate nucleus

b) Contralateral sub-thalamic lesion

c) Contralateral putamen

d) Ipsilateral sub-thalamic lesion

Correct Answer - B

Answer- B. Contralateral sub-thalamic lesion

- Sub-thalamic nucleus- Contralateral hemiballismus

679. Candle wax dripping sign is seen in

a) Sarcoidosis

b) SLE

c) HIV

d) Rheumatoid arthritis

Correct Answer - A

Answer- A. Sarcoidosis

- Condle wax chipping sign is a feature of ocular Sarcoidosis.

680. Transtentorial herniation causes all except

a) Neck stiffness

b) Post cerebral artery infarct

c) Contralateral hemiparesis

d) 3rd Nerve palsy with contralateral pupillary dilatation

Correct Answer - A

Answer- A. Neck stiffness

- Transtentorial herniation is the displacement of medial temporal lobe into the tentorial opening it is usually seen after extradural hemorrhage.
- Compression of optic nerve : Ipsilateral pupil dilation

681. Which of the following is most likely to be affected in an aneurysm of posterior cerebral artery (PCA)?

a) Hypophysis cerebri

b) Trochlear nerve

c) Oculomotor nerve

d) Optic nerve

Correct Answer - C

Ans. c. Oculomotor nerve

(Ref Harrison 19/e p1784, 18/e p2262)

Oculomotor nerve is most likely to be affected in an aneurysm of *posterior cerebral artery (PCA)*.

Occipital and posterior cervical pain may signal a posterior inferior cerebellar artery or anterior inferior cerebellar artery aneurysm.

*Pain in or behind the eye and in the low **temple can occur with an expanding MCA aneurysm.***"- Harrison 18/e p2262

682. All of the following can be used to predict severe acute pancreatitis EXCEPT:
September 2012

a) Glasgow score 3

b) APACHE II score 9

c) CT severity score 6

d) C-reactive protein < 100

Correct Answer - D

Ans. D i.e. C-reactive protein < 100

Acute pancreatitis

- MC cause: Gallstones
- Investigation which can cause acute pancreatitis: ERCP
- Grey turner sign: Blue-red-purple or green-brown discoloration due to catabolism of hemoglobin
- Diagnosis: Fecal fat estimation,
- CT scan is the diagnostic modality
- Best prognosis: Gall stone pancreatitis
- Recurrent pancreatitis occurs in: Methyl malonic acidemia
- Conditions with raised serum amylase:
 - Pancreatitis,
 - Renal failure,
 - Ruptured ectopic pregnancy etc.

683. Most common cause of Mediastinitis is:

a) Tracheal rupture

b) Esophageal rupture

c) Drugs

d) Idiopathic

Correct Answer - B

Answer is B (Esophageal rupture):

Most cases of acute mediastinitis are due to esophageal perforation or occur after median sternotomy for cardiac surgery– Harrison

Acute Mediastinitis

1. Esophageal rupture Q
2. Median sternotomy for cardiac surgery

Chronic Mediastinitis

1. Tuberculosis / Histoplasmosis (most cases) Q
2. Sarcoidosis, silicosis Q
3. Other fungal diseases

684. Secretory diarrhea is not seen in:

a) Phenolphthalein

b) Celiac disease

c) Cholera

d) Addison's Disease

Correct Answer - B

Answer is B (Celiac Disease)

Celiac Disease is associated with Steatorrheal diarrhoea from mucosa! malabsorption.

Secretory Diarrhea

- Certain Bacterial Infection
- Vibrio Cholera
- Enterotoxigenic E.Coli
- Non Osmotic Stimulant Laxatives
- Hormone Producing Endocrine Tumors
- Carcinoid,
- VIPomas,
- Gastrinomas,
- Medullary Carcinoma Thyroid (Calcitonin)
- Bile acids (endogenous laxatives)

Bowel resection / disease or fistula

Addison's Disease

Congenital Electrolyte Absorption defects

Chronic Alcohol Ingestion

Diabetic Diarrhea

Steatorrheal Diarrhea

Intraluminal maldigestion

- Pancreatic exocrine insufficiency,
- Bacterial overgrowth,
- Bariatric surgery,
- Liver disease

Mucosal malabsorption

- Celiac sprue,
- Whipple's disease,
- Infections,
- Abetalipoproteinemia,
- Ischemia

Postmucosal obstruction

(1° or 2° lymphatic obstruction)

685. Which one of the following serum levels would help in distinguishing an acute liver disease from chronic liver disease

a) Aminotransaminase

b) Alkaline phosphatase

c) Bilirubin

d) Albumin

Correct Answer - D

Answer- D. Albumin

- Serum albumin has a long half life 15-20 days with approximately 4% degraded per day

686. Obesity is associated with decreased risk of

a) Hypertension

b) Hyperuricemia

c) Osteoporosis

d) Heart disease

Correct Answer - C
Answer- C. Osteoporosis

687.. The triad originally described by Zollinger Ellison syndrome is characterized by

a) Peptic ulceration, gastric hypersecretion, non beta cell tumour

b) Peptic ulceration, gastric hypersecretion, beta cell tumour

c) Peptic ulceration, achlorhydria, non beta cell tumour

d) Peptic ulceration, achlorhydria, beta cell tumour

Correct Answer - A

Answer is A (Peptic Ulceration, Gastric Hypersecretion, Non (3 Cell Tumour)

Zollinger Ellison Syndrome is characterised by peptic ulceration due to gastrin hyper secretion by a non beta cell tumor.

688. Celiac sprue diagnosed by

a) Intestinal biopsy

b) Unequivocal response to gluten restriction

c) Finding of organism

d) a and b

Correct Answer - D

Answer is A and B (Intestinal biopsy and Unequivocal response to gluten restriction)

The diagnosis of celiac disease requires the presence of characteristic histological changes on small intestinal biopsy together with a prompt and clinical and histological response (unequivocal response) following the institution of gluten free diet'

689. ROME III criteria for Irritable bowel syndrome AE

a) Improvement with defecation

b) Rectal bleeding

c) Onset associated with change in frequency of stool

d) Onset associated with change in form of stool

Correct Answer - B

Answer- B. Rectal bleeding

ROME II Diagnostic Criteria for Functional Bowel Disorders-

- Irritable Bowel Syndrome
- Functional Abdominal Bloating
- Functional Constipation
- Functional Diarrhea
- Unspecified Functional Bowel Disorder

690. All of following are seen in GH deficiency except

a) Hyperglycemia

b) Stunting

c) Delayed bone age

d) High pitched voice

Correct Answer - A

Answer- A. Hyperglycemia

- Short children with normal body proportions
- Markedly increased subcutaneous fat
- Proportionate growth retardation
- Delayed skeletal age than chronological age than height age is less than skeletal age and chronological age.
- Hypoplastic penis (micropenis) and scrotum
- May present with severe hypoglycemic convulsions.
- Crowding of midfacial features
- Genitals are small (sexual infantilism)
- Frontal bossing
- Delayed puberty
- Delayed tooth eruption
- Delayed epiphyseal fusion
- No mental retardation

691. In prolactinoma most common symptom other than galactorrhea is

a) Bitemporal hemianopia

b) Amenorrhea

c) Thyroid dysfunction

d) Headache

Correct Answer - B

Answer- B. Amenorrhea

- Amenorrhoea and galactorrhoea are the major endocrine manifestation of prolactinoma.

692. Obesity is associated with all of the following except:

a) Osteoarthritis

b) Hypertension

c) Gall stones

d) Pancreatitis

Correct Answer - D

Answer is D (Pancreatitis):

Pancreatitis has no association with obesity.

RISKS OF OBESITY INCLUDE THE FOLLOWING :

A. Cardiovascular disease :

-increased risk of *atherosclerosis*

-increased risk of *hypertension*

- increased risk of *sudden death*

B. Pulmonary function : *Sleep apnea* and *Right heart failure*

C. Gall bladder disease : Increased incidence of *Gall stones*

D. Joint :

- Increased risk of *osteoarthritis* ^Q :partly due to added trauma of increased weight bearing

- Increased incidence of *Gout* ²:due to impairment in urate clearance.

E. Diabetes mellitus : *Type II diabetes mellitus* ^Q is almost always seen in the obese.

F. Cancer : Increased incidence of endometrial carcinoma post menopausal breast cancer prostate cancer ^Q

- colorectal carcinoma

G. Skin : Increased incidence of *Acanthosis nigricans* ^Q

H. Endocrine :

Insulin Resistance : leading to Hyperinsulinemia is directly related to degree of obesity.

Growth hormone ^Q :secretions is reduced but IGF-I levels are normal thus growth is not affected. *Testosterone level is reduced.Q*

693. The ECG in hyperkalemia classically shows:

September 2009, 2010

a) Increase QRS duration

b) Shortened PR interval

c) Prominent U waves

d) Increased R wave amplitude

Correct Answer - A

Ans. A: Increase QRS duration

694. Hyperkalemia without ECG changes may be treated with all except ‘

a) Calcium gluconate

b) Salbutamol

c) Na bicarbonate

d) Insulin with dextrose

Correct Answer - A

Calcium gluconate [Ref Harrison 17/c p. 284]

- Calcium gluconate is the fastest acting agent used in t/t of hyperkalemia.
 - *In acts within minutes but an important point to note is that it does not cause transcellular movement of potassium, instead it acts on cell membrane.*
 - it stabilizes the cardiac: cell membrane and reduces chances of cardiac anyhthmia...
 - Thus it has no use when there are no E.C.G.. features.
- NaHCO₃
- NaHCO₃ has been routinely used in the treatment of hyperkalemia.
 - It was believed that NaHCO₃ caused movement of potassium inside the cells by causing alkalosis.
 - But studies do not support this
 - They claim that NaHCO₃ do not cause movement of potassium inside the cells in acute cases of hyperkalemia. - It only decreases potassium when there is coexisting acidosis.
 - NaHCO₃ can decrease potassium level in chronic hyperkalemia. It increases potassium delivery to the kidney.
 - But the use of NaHCO₃ still continues in most hospitals and

institutes across the world.

- It is now hypothesized that NaHCO_3 does not cause r entry inside the cell by mechanism earlier believed to be, but by another mechanism.

- The question does not say anything about acidosis.
- Don't think that acidosis occurs only in severe hyperkalemia.
- Most patients with C.R.F. present with acidosis and mild moderate hyperkalemia.

In hyperkalemia with no E.C.G. feature, calcium prophylaxis is not indicated

- Calcium gluconate is administered to stabilize the cardiac membrane

- Instability of the cardiac membrane is indicated by E.C.G. changes

- Absence of E.C.G. changes suggest that the cardiac membrane is stable. In these cases there is no use of calcium administration.

- *Prophylactic calcium gluconate is of no use.*

695. Bilateral hilar lymphadenopathy with non caseating granuloma is seen in ?

a) TB

b) Lymphoma

c) Sarcoidosis

d) All of the above

Correct Answer - C
Ans. is 'c' i.e., Sarcoidosis

696. Which of the following regarding small vessel disease (SVD), cerebral amyloid angiopathy (CAA) and Alzheimer's disease (AD) is not true?

a) SVD is related to CAA

b) SVD is not correlated to AD

c) SVD is related to AD

d) CAA is associated with AD

Correct Answer - C

Ans. c. SVD is related to AD

In dementia, both small vessel disease (SVD) and large vessel disease are found. But Alzheimer's disease is caused by involvement of large vessels, while subcortical dementia like progressive supranuclear palsy (PSP) involves small vessels." "The term "small vessel" is used for small penetrating branches that arise at acute angles from the large arteries of circle of Willis, stem of the middle cerebral artery and the basilar artery. These arteries penetrate at right angles to supply the deeper structures within the brain e.g. basal ganglia, internal capsule, thalamus, pons. These arteries are prone to thrombosis and are common causes of ischemic stroke.

"With normal aging, there is also an accumulation of amyloid in cerebral blood vessels, leading to a condition called cerebral amyloid angiopathy (without dementia), which predisposes older persons to lobar hemorrhage and brain micro-hemorrhages (Small vessel disease). AD patients appear to be at increased risk for amyloid angiopathy, and this may explain some of the observed

association between AD and stroke.”-

"Cerebral amyloid angiopathy (CAA), although usually asymptomatic, is an important cause of primary lobar intracerebral hemorrhage in the elderly. It can occur as a sporadic disorder, sometimes in association with AD, or as a certain familial syndrome. CAA is characterized by deposition of cognophilic material in small to medium-sized blood vessels of the brain and leptomeninges. In its most severe stages, the amyloid deposits cause breakdown of the blood vessel wall with resultant hemorrhage

697. True about frostbite are all, except:
PGI 14

a) Occurs due to extreme cold

b) Formation of ice crystals within tissues

c) Rewarming is not done

d) Seen in fingers and toes

Correct Answer - C
Ans. Rewarming is not done

**698. Kleine-Levin syndrome is associated
with:
*NEET 13***

a) Insomnia

b) Anxiety

c) Depression

d) Hypersomnia

Correct Answer - D
Ans. Hypersomnia

699. Maffucci syndrome is associated with which bone tumor?

a) Enchondroma

b) Osteochondroma

c) Multiple myeloma

d) Chondrosarcoma

Correct Answer - A

Answer- A. Enchondroma

- Enchondroma is a benign tumor characterized by the formation of mature hyaline cartilage.
- The most common site is short tubular bones of hand, i.e., Phalanges (most common) and metatarsals. When tumor is located centrally in the bone, it is called enchondroma. When it is located on the surface (juxtacortical) it is called chondroma.

Mostly enchondromas are solitary, however following syndromes may have multiple enchondroma:-

- .. Ollier's disease
- ?. Maffucci's syndrome

700. Chronic Fatigue Syndrome is characterized by all except

a) New onset fatigue

b) Not improved by rest

c) Major psychiatric disorder associate

d) Fatigue last for more than 6 mother

Correct Answer - C

Answer- C. Major psychiatric disorder associate

- Fatigue lasts for at least 6 months
- Fatigue is of new or definite onset.
- Fatigue is not the result of an organic disease or of continuing exertion
- Fatigue is not alleviated by rest.
- Fatigue symptoms are soar throat, tender cervical or axillary lymph nodes, muscle pain, pain in several joints, headaches, malaise

701. Castleman's disease is associated with?

a) Necrotizing vasculitis

b) Benign lymphoid hyperplasia

c) Necrotizing lymphadenitis

d) Coagulation defect

Correct Answer - B

Answer- B. Benign lymphoid hyperplasia

Castleman disease (CD)

- It is a rare benign lymphoproliferative disorder.
- Although Castleman disease is not cancerous, it may also be associated with malignancies such as Kaposi sarcoma, non-Hodgkin lymphoma, Hodgkin lymphoma and POEMS syndrome

702. According to revised guidelines of American heart association, which of the following drugs is not recommended in Cardiac arrest

a) Adrenaline

b) Atropine

c) Amiodarone

d) Vasopressin

Correct Answer - B

Answer- B. Atropine

- "Atropine is no longer recommended for PEA or crystalle

703. Incorrect about dementia pugilistica

a) Seen in boxers

b) Difficulty in gait

c) Decreased cognition

d) Nystagmus

Correct Answer - D

Answer- D. Nystagmus

Dementia Pugilistica (DP), otherwise known as 'punch-drunk syndrome' or 'boxer's dementia,' is a form of dementia that originates with repeated concussions or other traumatic blows to the head.

Symptoms of Dementia Pugilistica

- Progressively declining cognitive ability
- Physical tremors
- Difficulty in speech
- Pathological feelings of jealousy or paranoia
- Short-term memory loss
- Loss of physical coordination
- Changes in gait

704. Obstructive sleep apnoea may result in all of the following except

a) Systemic hypertension

b) Pulmonary hypertension

c) Cardiac arrhythmia

d) Impotence

Correct Answer - C

Ans. is 'c' i.e., Cardiac arrhythmia

Daytime function and cognition

- *OSA is associated with excessive daytime sleepiness, inattention, and fatigue, which may impair daily function, induce or exacerbate cognitive deficits, and increase the likelihood of errors and accidents.*

Cardiovascular morbidity

- *Patients with OSA, are at increased risk for a broad range of cardiovascular morbidities, including systemic hypertension, pulmonary arterial hypertension, coronary artery disease, cardiac arrhythmias, heart failure, and stroke.*

Metabolic syndrome and type 2 diabetes

- *Patients with OSA have an increased prevalence of insulin resistance and type 2 diabetes.*

Nonalcoholic fatty liver disease

- *Intermittent nocturnal hypoxia due to OSA may contribute to the development and severity of nonalcoholic fatty liver disease (NAFLD), independent of shared risk factors such as obesity.*

Perioperative complications

- *Patients with OSA may be at greater risk for perioperative complications such as postoperative oxygen desaturation, acute*

respiratory failure, postoperative cardiac events, and intensive care unit transfers.

Mortality

- *Patients with untreated severe OSA (ie, AHI 30 events per hour) have a two- to three fold increased risk of all-cause mortality compared with individuals without OSA, independent of other risk factors such as obesity and cardiovascular disease.*

705. What are nitrenergic neurous ?

a) Post ganglionic neurons releasing nitric oxide

b) 1st order neurons releasing nitric oxide

c) Post ganglionic neurons releasing substance P.

d) 1st order neurons releasing calcitonin Gene related peptide

Correct Answer - B

Answer-B. 1st order neurons releasing nitric oxide

- Nitrenergic neurons are nerye cells which have neurotransmitter NO.

706. Aspergillosis can present with all except

a) Lung cavity

b) Ear infection

c) Normal component in sputum

d) Rhinocerebral involvement

Correct Answer - D

Answer- D. Rhinocerebral involvement

Aspergillus is the most common cause of otomycosis (fungal ear infection)

- It has been associated with lung cavities, especially when associated with underlying conditions like TB'
- Aspergillosis does not present with rhinocerebral involvement

707. A 44 year old female has history of blunt trauma to the abdomen the best investigation is -

a) USG

b) CT Scan

c) Complete Hemogram

d) Abdominal X-ray

Correct Answer - A

Answer- A. USG

- If patient is hemodynamically stable and can be shifted → CT scan is the best.
- If patient is hemodynamically unstable (cannot be shifted) → USG is the investigation of choice.

708. All of the following can lead to increased Intra cranial pressure except -

a) Meningitis

b) Subarachnoid Hemorrhage

c) Subdural hemorrhage

d) Migraine

Correct Answer - D

Answer-D. Migraine

Common causes include-

- Aneurysm rupture and subarachnoid hemorrhage
- Brain tumor
- Encephalitis
- Head injury
- Hydrocephalus (increased fluid around the brain)
- Hypertensive brain hemorrhage
- Intraventricular hemorrhage
- Meningitis
- Subdural hematoma
- Status epilepticus
- Stroke

709. Transplantation of an organ at site other than its original location is called -

a) Orthotopic graft

b) Allograft

c) Isograft

d) Heterotopic graft

Correct Answer - D

Answer- D. Heterotopic graft

- Heterotopic graft : A transplant placed in a site different from where the organ is normally located.

710. All of the following are treatment modalities in malignant mesothelioma except

a) Talc Pleurodesis

b) Extrapleural pneumonectomy

c) Combination therapy with surgery, chemotherapy and radiotherapy

d) Exclusive Radiotherapy

Correct Answer - D

Answer- D. Exclusive Radiotherapy

- Treatment options include supportive care only, surgical resection, and multimodality approaches (using a combination of surgery, chemotherapy, and radiation therapy).

711. Battle's sign is:
TN 11

a) Hemorrhage around eyes

b) Mastoid ecchymosis

c) Umbilical ecchymosis

d) Vaginal ecchymosis

Correct Answer - B
Ans. Mastoid ecchymosis

712. What is the significance of hepatorenal pouch of Morrison -

- a) It is the most dependent space in the abdomen and fluid from ascites first accumulates here
- b) Pancreatic pseudocyst formation occurs here
- c) It is the area where greater omentum originates
- d) It is the point of access through which liver biopsy is taken

Correct Answer - A

Answer- A. It is the most dependent space in the abdomen and fluid from ascites first accumulates here

- The posterior right subhepatic space (also known as the hepatorenal fossa or Morrison pouch) separates the liver from the right kidney.

713. Which is true about esophageal leiomyoma?

- a) Common in proximal third of esophagus
- b) Appears like an ovoid intramural mass with smooth outline on CT
- c) It is mass of skeletal muscle overgrowth
- d) Prognosis is generally poor

Correct Answer - B

Answer- B. Appears like an ovoid intramural mass with smooth outline on CT

- Oesophageal leiomyoma is a benign smooth-muscle neoplasm of the oesophagus. It is the most common benign tumour of the oesophagus.
- On CT scan it appear ovoid intramural solitary mars with a smooth surface. Presence of calcification is pathognomonic.

714. A 55 year old sexually active male with stage T1b prostate cancer must be offered -

a) Radical Prostatectomy

b) Orchidectomy

c) Hormone Ablation

d) TURP

Correct Answer - A

Answer- A. Radical Prostatectomy

T1b, T1c & T2 disease

- Management depends on patient's age, life expectancy, performance status, and patient's preferences.
- In younger, fitter men (
- Watchful waiting is an option for elderly with low life expectancy (
- **Advanced ds (T3, T4 or any metastasis)**
- Only Palliative t/t is the option
- l) Androgen Ablation is the first line therapy
- It can be achieved by-**
- 1. Orchiectomy or
- 2. Drugs (medical castration)
- 2) Palliative Radiotherapy

715. 78 year old male, known case of prostate cancer with multiple painful vertebral metastasis. Ideal management plan would be -

a) Androgen ablation with Orchidectomy

b) Palliative Chemotherapy

c) Radical prostatectomy

d) TURP

Correct Answer - A

Answer- A. Androgen ablation with Orchidectomy

Only Palliative t/t is the option

1) Androgen Ablation is the first line therapy

It can be achieved by-

.. Orchiectomy or

2. Drugs (medical castration)

2) Palliative Radiotherapy

716. All of the following are indications for bariatric surgery except -

a) BMI > 40 kg/m²

b) BMI > 35 kg/m² with at least one comorbidity

c) BMI > 30 with long standing diabetes

d) Failure of other methods of weight loss

Correct Answer - C

Answer- C. BMI > 30 with long standing diabetes

Indications for bariatric surgery

- BMI > 40 kg/m²
- BMI > 35 kg/m² with at least one comorbidity
- Patient at high risk of obesity associated morbidity and mortality
- Failure of other methods of weight loss

717. Recurrent infection leads to which calculi -

a) Struvite

b) Calcium Oxalate

c) Calcium Phosphate

d) Cysteine

Correct Answer - A

Answer- A. Struvite

- Struvite stone tends to grow in alkaline urine.

718. During renal transplantation the renal vein is connected to -

a) IVC

b) External Iliac vein

c) Internal iliac vein

d) Gonadal Vein

Correct Answer - B

Answer- B. External Iliac vein

- The renal artery of the new kidney, previously branching from the abdominal aorta in the donor, is often connected to the external iliac artery in the recipient.

719. All of the following are features of SVC Syndrome except -

a) Facial swelling

b) Dilatation and congestion of neck veins

c) Headache

d) Hoarseness of voice

Correct Answer - D

Answer- D. Hoarseness of voice

- Superior vena cava syndrome (SVCS), is a group of symptoms caused by obstruction of the superior vena cava.
- Shortness of breath is the most common symptom, followed by face or ium swelling.

Following are frequent spnptoms:

- Diftculty breathing
- Headache
- Facial swelling
- Venous distention in the neck and distended veins in the upper chest and arms
- Upperlimb edema
- Lightheadedness
- Cough
- Edema (swelling) of the neck called the collar of Stokes

720. True about gastroschisis is all, EXCEPT:

- a) Results from fibrosis of the sternocleidomastoid muscle
- b) Lesion is characterized by the deposition of collagen
- c) Surgical transection of the sternocleidomastoid muscle may be indicated
- d) None of the above

Correct Answer - D

The presence of a lateral neck mass in infancy in association with rotation of the head toward the opposite side of the mass indicates the presence of congenital torticollis.

This lesion results from fibrosis of the sternocleidomastoid muscle.

The mass may be palpated in the affected muscle in approximately two thirds of cases.

Histologically, the lesion is characterized by the deposition of collagen and fibroblasts around atrophied muscle cells.

In the overwhelming majority of cases, physical therapy based on passive stretching of the affected muscle is of benefit. Rarely, surgical transection of the sternocleidomastoid muscle may be indicated.

Ref: Schwartz's principle of surgery 9th edition, chapter 39.

721. Rotterdam criteria are used to evaluate -

a) CA Breast

b) Aberrations in normal development and involution

c) PCOS

d) CA Cervix

Correct Answer - C

Answer- C. PCOS

Rotterdam criteria

Two of the following three criteria are required :

- Oligo/anovulation
- Hyperandrogenism
- Clinical (hirsutism or less commonly male pattern alopecia) or
- Biochemical (raised FAI or free testosterone)
- Polycystic ovaries on ultrasound

722. The complications of irrigating fluid used in TURP are all except -

a) Water intoxication

b) Hyperammonemia

c) Hyperthermia

d) Hyperglycemia

Correct Answer - C

Answer- C. Hyperthermia

Feature of TURP Syndrome-

- Water intoxication
- Hyponatremia
- Hypothermia
- DIC (late stages)
- Hyperammonemia
- Hyperglycemia

723. A 19 year old girl sustained blunt abdominal trauma. She was diagnosed of having splenic rupture. Her pulse is 110/min and BP is normal. She is tachypnoes with respiratory rate of 22/min and she is anxious. Her approximate blood loss is -

a) < 750 ml

b) 750 - 1500ml

c) 1500 - 2000ml

d) > 2000ml

Correct Answer - B

Answer- B. 750 - 1500ml

Blood loss- 750- 1500 ml

724. What is the best treatment for a five year old child presenting with ballooning of prepuce following micturation?

a) Adhesiolysis & dilatation

b) Circumcision

c) Dorsal slit

d) Conservative management

Correct Answer - B

'Ballooning of foreskin that persists after micturation is a sign of obstruction requiring circumcision'

Ref: Undergraduate Surgery By A.K. Nan, Page 677; Jones' Clinical Pediatric Surgery: Diagnosis & Management (Blackwell publishing) 6th Edition, Page 180; Bailey & Love 25th Edition, Page 1371; Handbook of Urological Diseases in Children By Ricardo González, Barbara M. Ludwikowski, Page 135

725. What does priapism in a polytrauma patient signify -

a) Penile injury

b) Spinal Injury

c) Significant head injury

d) Pelvic injury

Correct Answer - B

Answer- B. Spinal Injury

- Priapism may be a feature of spinal cord injury.

726. All of the following are true about prostate specific antigen except -

a) Normal level is 10-14 ng/ml

b) It may be elevated in BPH and Ca Prostate

c) It is produced by prostate

d) It is a glycoprotein

Correct Answer - A

Answer- A. Normal level is 10-14 ng/ml

- It is a glycoprotein produced only in the prostatic cells (both benign & malignant).
- Normal serum level → less than 4 ng/ ml
- 4- 10 ng/ml > this range is common for both BHP and Ca.
- More than 10 ng/ml → approx 75% will have cancer.

727. Best investigation for prostate cancer is -

a) Prostate Specific Antigen

b) Acid Phosphatase

c) PSA velocity

d) Alkaline phosphatase

Correct Answer - C

Answer- C. PSA velocity

- For men with a PSA above 4, PSA velocity of more than .75 ng/ml year is suggestive of Ca.
- While for those with lower PSA levels, rates above 0.5 ng/ml per year should be used to advise biopsy.

728. Nerves of Latarjet are spared in -

a) Highly selective vagotomy

b) Vagotomy and antrectomy

c) Vagotomy and Drainage

d) Truncal Vagotomy

Correct Answer - A

Answer- A. Highly selective vagotomy

Types of vagotomy:

1. 1) Highly selective vagotomy (HSV)
 2. 2) Vagotomy and drainage (V+D)
 3. 3) Vagotomy and antrectomy (V+A)
- In Highly selective vagotomy (ds known as parietal cell vagotomy or Proximal gastric vagotomy) the vagal innervation to the antrum and pylorus (nerves of Latarjet) are preserved, only the vagal supply to the proximal two-thirds of stomach (where essentially all the parietal cells are located) is cut. This preserves gastric motility.

729. All of the following nerves are commonly used for grafting except -

a) Medial antebrachial Cutaneous nerve

b) Dorsal sensory branch of vagal nerve

c) Musculocutaneous nerve

d) Sural nerve

Correct Answer - C

Answer- C. Musculocutaneous nerve

Most common nerves used for grafting:

1. Medial antebrachial Cutaneous nerve
2. Dorsal sensory branch of vagal nerve
3. Greater Auricular
4. Sural nerve

730. Central line may be inserted in all of the following veins except -

a) Internal Jugular vein

b) Femoral Vein

c) Subclavian Vein

d) Common iliac vein

Correct Answer - D

Answer- D. Common iliac vein

Common sites of central line insertion

1. Internal jugular vein
2. Subclavian vein
3. Axillary vein
4. Femoral vein

731. All of the following are true about mammography except -

- a) It can detect microcalcifications
- b) It is a screening tool in breast cancer
- c) It is basically X ray imaging of the breast
- d) It has a significant radiation risk

Correct Answer - D

Answer- D. It has a significant radiation risk

Mammography

- Is X-ray imaging of breasts to detect tumors or other abnormalities.
 - Mammography is the screening modality of choice for breast cancer as it can detect microcalcifications which is often the only early manifestation of ductal ca in situ.
- It is of two types -**
1. Screening mammography is used to detect breast changes in women who have no signs or symptoms of any breast abnormality. This usually requires at least 2 mammograms from different angles of each breast - a) the cranio-caudal (cc) view and b) the mediolateral-oblique (MLO) view.
 2. Diagnostic mammography- used to evaluate abnormal findings on a screening mammogram.
- Radiation risk (Risk of carcinoma)- No doubt that ionizing radiation (X rays) can itself cause breast cancer.

732. What may be mistaken as carcinoma breast on appearance -

a) Breast abscess

b) Nodular mucinosis

c) Cystosarcoma Phylloids

d) Fibroadenosis

Correct Answer - B

Answer- B. Nodular mucinosis

- Nodular mucinosis may be mistaken for mucinous carcinoma of breast on clinical and imaging examinations, and should be included in the differential diagnosis in cases of mucinous lesions occurring near the nipple in a young women.

733. Triple negative breast cancer- What is true -

a) It has good prognosis

b) There are no receptors positive for ER, PR and HER2 NEU

c) It is a cancer that cannot be diagnosed by triple assessment

d) Three Radiologic investigations ie CT scan, MRI and USG are needed for diagnosis

Correct Answer - B

Answer- B. There are no receptors positive for ER, PR and HER2 NEU

- Triple-negative breast cancer refers to any breast cancer that does not express the genes for estrogen receptor (ER), progesterone receptor (PR) or Her2/neu.

734. Which of the following is a triple negative breast cancer -

a) Colloid Cancer

b) Secretory cell cancer

c) Acinic Cell Carcinoma

d) Mucinous Carcinoma

Correct Answer - B

Answer- B. Secretory cell cancer

- Upon histologic examination, triple-negative breast tumors mostly fall into the categories of secretory cell carcinoma or adenoid cystic types (both considered less aggressive); medullary cancer and grade 3 invasive ductal carcinomas with no specific subtype; and highly aggressive metastatic cancer.

735. Inflammatory Carcinoma of breast is classified under -

a) T4b

b) T4c

c) T4d

d) T3

Correct Answer - C

Answer- C. T4d

- Inflammatory breast carcinoma is one of the most malignant form of breast cancer.
- It has been specifically assigned a special T code, T4d (which falls under stage IIIb disease).

736. When does a burns patient need to be intubated -

a) Deep facial burns with singed nasal hair

b) Superficial facial burns

c) Pulse rate > 100/min

d) Crepitations on auscultation

Correct Answer - A

Answer- A. Deep facial burns with singed nasal hair

Indications for intubation in burns patients

- Persistent cough, stridor, or wheezing
- Hoarseness
- Deep facial or circumferential neck burns
- Nares with inflammation or singed hair
- Carbonaceous sputum or burnt matter in the mouth or nose
- Blistering or edema of the oropharynx
- Depressed mental status, including evidence of drug or alcohol use
- Respiratory distress
- Hypoxia or hypercapnia
- Elevated carbon monoxide and/or cyanide levels.

737. All of the following are important precautions to prevent infections associated with arterial catheterizations except -

a) Education of health personnel

b) Hand hygiene

c) Use sterile semi permeable dressing

d) Use of femoral artery more than radial artery

Correct Answer - D

Answer- D. Use of femoral artery more than radial artery

- Educate healthcare personnel regarding the indications for intravascular catheter use, proper precautions for insertion and maintenance of intravascular catheters, and appropriate infection control measures to prevent catheter-related infections.
- Insertion technique Hand hygiene is to be performed before insertion or manipulation of arterial catheter.
- Maximum sterile barrier precautions should be used for axillary or femoral arterial catheter placement.
- Site selection Radial, dorsalis pedis and brachial sites are to be used preferentially over femoral site.

738. Which of the following graft is known as wolf's graft

a) Split thickness graft

b) Full thickness graft

c) Partial thickness graft

d) Myocutaneous graft

Correct Answer - B

Ans is 'b' ie Full thickness graft

- Wolfes graft —) Full thickness graft
- Thiersche graft --> Partial thickness graft

739. A 4 year old child presents with shock and circulatory collapse. It is not possible to get iv access. Then What must be done next -

a) Intraosseus cannulation

b) Intracardiac Infusion

c) Thoracotomy

d) CPR

Correct Answer - A

Answer- A. Intraosseus cannulation

- An intraosseous line is as efficient as an intravenous route and can be inserted quickly, even in the most poorly perfused patients.
- Intraosseous (IO) insertion was typically recommended for use in children younger than 6 years; however, it is now recognized to be both safe and effective in older children and adults.

740. Flail chest means fracture of:
PGI 12

a) Two ribs on same side

b) Two ribs on opposite side

c) Four ribs on two sides

d) All

Correct Answer - C
Ans. C. Four ribs on two sides

741. All are elaborated by small cell carcinoma lung, except

a) ADH

b) ACTH

c) 5-HT

d) Noradrenaline

Correct Answer - D
Answer is 'd' i.e. Noradrenaline

742. What is extrapleural pneumonectomy -

a) Removal one lobe of lung

b) Removal of a complete lung

c) Removal of pleura of one lung

d) Removal of an affected lung with its pleura and part of diaphragm

Correct Answer - D

Answer- D. Removal of an affected lung with its pleura and part of diaphragm

- Extrapleural pneumonectomy (EPP): removal of the affected lung, plus part of the diaphragm, the parietal pleura (lining of the chest) and the pericardium (lining of the heart) on that side.
- The linings are replaced by Gore-Tex in this radical and painful surgery that is used primarily for treatment of malignant mesothelioma.

743. Indications for emergency thoracotomy are all of the following except

a) Major tracheobronchial injuries

b) Cardiac tamponade

c) Penetrating injuries to anterior chest

d) Tension Pneumothorax

Correct Answer - D

Answer- D. Tension Pneumothorax

Emergency thoracotomy is indicated after chest trauma in following conditions :

- Cardiac arrest (resuscitative thoracotomy)
- Massive hemothorax (>1500 mL of blood through the chest tube acutely or > 200-300 ml/hr after initial drainage.
- Penetrating injuries of the anterior aspect of the chest with cardiac tamponade.
- Large open wounds of the thoracic cage.
- Major thoracic vascular injuries in the presence of hemodynamic instability

744. The intercostal drainage tube is inserted in the

a) 5th intercostal space in the midaxillary line

b) 3rd intercostal space in the midaxillary line

c) 4th intercostal space in the anterior axillary line

d) 9th intercostal space in the midclavicular line

Correct Answer - A

Answer- A. 5th intercostal space in the midaxillary line

Safe triangle of icd insertion

- Anterior border of latissimus dorsi.
- Lateral border of pectoralis major.
- Horizontal line superior to the nipple.
- Horizontal line inferior to axilla.
- More specifically, the tube is inserted into the 4th or 5th intercostal space slightly anterior to the mid axillary line

745. While doing thoracocentesis, it is advisable to introduce needle along:

a) Upper border of the rib.

b) Lower border of the rib

c) Lower border of the rib

d) In anterior part of intercostal space.

Correct Answer - A
A i.e. Upper border of rib:

746. What is the treatment for Cardiac tamponade -

- a) Immediate anticoagulation
- b) Emergency subxiphoid percutaneous drainage
- c) Transesophageal pericardiocentesis
- d) Stabilize and observe

Correct Answer - B

Answer- B. Emergency subxiphoid percutaneous drainage
Emergency subxiphoid percutaneous drainage -

- This is a life-saving bedside procedure. The subxiphoid approach is extrapleural; hence, it is the safest for blind pericardiocentesis. A 16- or 18-gauge needle is inserted at an angle of 30-45 degree to the skin, near the left xiphocostal angle, aiming towards the left shoulder. When performed emergently, this procedure is associated with a reported mortality rate of approximately 4% and a complication rate of 17%.

747. Which intubation is preferred in case of bilateral mandibular fractures ?

a) Orotracheal intubation

b) Naso tracheal intubation

c) Cricothyrotomy

d) Submental intubation

Correct Answer - B

Answer- B. Naso tracheal intubation

- Time of surgery should be carefully planned allowing reduction of tissue edema and avoiding development of malunion. Nasal intubation is the choice of intubation by surgeon, providing them with free access to operating field. Blind awake nasal intubation is safe and simple with some experience in difficult airway.

748. All of the following are absolute indications for intubation except

a) Depressed level of consciousness

b) Bleeding into the airway

c) Falling O₂ Saturation

d) Maxillofacial fractures

Correct Answer - D

Answer- D. Maxillofacial fractures

Basic indications for emergency endotracheal intubation :

1. Airway blockage

- Severe blunt or penetrating injury to the face or neck may be accompanied by swelling and an expanding hematoma, or injury to the larynx, trachea or bronchi.

2. Hypoxemia-

- Examples of such conditions include cervical spine injury, multiple rib fractures, severe pneumonia, acute respiratory distress syndrome (ARDS), or near-drowning.

3. Depressed level of consciousness-

- The most common indication for tracheal intubation is for the placement of a conduit through which nitrous oxide or volatile anesthetics may be administered.

749. Which of the following conditions needs emergency endotracheal intubation?

a) GCS < 7

b) Tension pneumothorax

c) Cardiac tamponade

d) Bleeding gastric ulcer

Correct Answer - A
Answer- A. GCS < 7

750. What is the most common immunosuppressant regimen used in renal transplant for maintenance?

a) Calcineurin inhibitors + Purine antagonists + Glucocorticoids

b) Cyclophosphamide + Purine antagonists + Glucocorticoids

c) Glucocorticoids + Cyclophosphamide

d) Calcineurin inhibitors + Purine antagonists + Basliximab

Correct Answer - A

Answer- A. Calcineurin inhibitors + Purine antagonists + Glucocorticoids

- Maintenance immunosuppression for renal transplantation typically consists of 3 types of drugs in combination: a glucocorticosteroid, purine antagonist (azathioprine or mycophenolate mofetil), and calcineurin inhibitor (cyclosporine or tacrolimus).

751. Management of subclavian artery injury due to inadvertent central catheter insertion include all of the following except

a) Closure device

b) Mechanical Compression

c) Covering stent

d) Tract embolization

Correct Answer - B

Answer- B. Mechanical Compression

- Use of arterial closure devices can be attempted, especially when the distance from the skin to the artery tract is less than 5 cm and access to the artery is still available. Tract embolization with Gelfoam can be employed.

752. BIRAD's Score is designed to

- a) Maintain uniformity in the reporting of imaging findings of various breast diseases
- b) Prognosticate CA Breast
- c) Evaluate the effect of brachial artery thrombosis
- d) Clinicoradiological association of breast malignancy

Correct Answer - A

Answer- A. Maintain uniformity in the reporting of imaging findings of various breast diseases

- BIRADS stands for Breast Imaging-Reporting and Data System. It's a quality assurance tool developed by American college of Radiology.
- The system is designed to standardize both the reporting of imaging findings and the recommendations for further management.

753. Breast cancer mainly spreads to the vertebrae via

a) Arterial route

b) Direct Invasion

c) Batsons venous plexus

d) Via Axillary lymph nodes

Correct Answer - C

Answer- C. Batsons venous plexus

- Metastasis of breast cancer to bone, and especially to thoracic vertebrae, is common due to the direct connection between the intercostal veins draining the breast and the internal vertebral plexus aka known as Batson's plexus.

754. The standard of care in splenectomy patients involves use of all the above vaccines except

a) H Influenzae type b

b) Meningococcal vaccine

c) Pneumococcal vaccine

d) Typhoid vaccine

Correct Answer - D

Answer- D. Typhoid vaccine

The standard of care for postsplenectomy patients includes immunization within 2 weeks of splenectomy with:

- Polyvalent pneumococcal vaccine (PPV23),
- H. influenzae type b conjugate, and
- Meningococcal polysaccharide vaccine

755. A 57 year old male suffering from acute pancreatitis develops sudden onset breathlessness with a CVP < 18mmHg. The chest xray shows bilateral infiltrates. The possible diagnosis is

a) ARDS

b) Myocardial infarction

c) Congestive left heart failure

d) Pulmonary embolism

Correct Answer - A

Answer- A. ARDS

ARDS Criteria

- Acute, meaning onset over 1 week or less.
- Bilateral opacities consistent with pulmonary edema must be present and may be detected on CT or chest radiograph.
- PF ratio < 300 mmHg with a minimum of 5 cmH₂O PEEP (or CPAP).
- CVP < 18 mmHg.

756. Immediately after kidney donation what happens to the creatinine level in the donors

a) Remains Same

b) Increases

c) Decreases

d) Level is independent of the donation

Correct Answer - B

Answer- B. Increases

- After kidney donation both the serum creatinine and creatinine clearance increase.

757. The term universal tumour refers to -

a) Adenoma

b) Papilloma

c) Fibroma

d) Lipoma

Correct Answer - D
Ans. is 'd' i.e., Lipoma

758. All of the following are principles of tendon transfers except

a) There should be no contracture at the joint

b) The line of pull must be straight

c) One tendon must do one function only

d) A muscle power less than 3 can also be used

Correct Answer - B

Answer- B. The line of pull must be straight

Adequate strength

- The tendon chosen as a donor for transfer must be strong enough to perform its new function in its altered position.
- Selecting an appropriate motor is important because a muscle will lose one grade of strength following transfer. Do not transfer muscle that has been reinnervated or muscle that was paralyzed and has returned to function.

759. All of the following are true about pancreatic injury except

a) Penetrating injuries are common

b) Commonly isolated injuries occur

c) Serum amylase is raised

d) Peritoneal lavage is not helpful for diagnosis

Correct Answer - B

Answer- B. Commonly isolated injuries occur

- In blunt injuries which are usually the result of midline upper abdominal trauma (eg. car seat belt, cycle handle), junction of the neck and body of the pancreas are most commonly injured as they are pressed against the vertebral column.
- Major abdominal vascular injuries are present in more than 75% of cases of penetrating trauma.
- Pancreas being a retroperitoneal structure, peitoneal lavage is not helpful in making the diagnosis of pancreatic injury.
- CT xan is the best diagnostic procedure, apart from an exploratory laprotomy

760. Water intoxication occurs in all of the following except

a) TURP syndrome

b) Enema for colonic wash

c) Gastric lavage

d) Heroin Abuse

Correct Answer - D

Answer- D. Heroin Abuse

- Transurethral Resection of Prostate (TURP) Syndrome
- Enema
- Gastric lavage
- Syndrome of Inappropriate ADH Secretion (SIADH)
- Ecstasy (MDMA) or Amphetamine use
- Intravenous Infusion of Hypotonic Fluids
- Beer Potomania
- Psychogenic Polydipsia
- Attempt to Hide Drug Abuse

761. Not used for intravascular volume maintenance is

a) Hydroxy ethyl starch

b) Dextran

c) Erythropoetin

d) Gelatin

Correct Answer - C

Answer- C. Erythropoetin

Erythropoetin Injections

- Erythropoietins available for use as therapeutic agents are produced by recombinant DNA technology in cell culture, They are used in treating anemia resulting from chronic kidney disease, chemotherapy induced anemia in patients with cancer, inflammatory bowel disease (Crohn's disease and ulcerative colitis).

762. Midline caecum results from which of the following abnormality?

a) Malrotation

b) Mixed rotation

c) Reverse rotation

d) Non rotation

Correct Answer - B

Answer- B. Mixed rotation

- Mixed (incomplete) rotation : The intestine does not rotate as it re enters the abdomen after physiological hernia caecum just lies inferior to the pylorus in the midline.

763. The TRUE statement about Dieulafoy's lesion is:

a) The most common location is in the greater curvature of stomach

b) It causes venous bleeding

c) Often recognized only after repeated endoscopy for recurrent bleeding

d) Thermal coagulation is not effective

Correct Answer - C

Dieulafoy's lesion:

- This lesion is a large-caliber arteriole that runs immediately beneath the gastrointestinal mucosa and bleeds through a pinpoint mucosal erosion.
- It is seen most commonly on the lesser curvature of the proximal stomach, causes impressive arterial hemorrhage, and may be difficult to diagnose.
- It is often recognized only after repeated endoscopy for recurrent bleeding.
- Endoscopic therapy, such as thermal coagulation, is typically effective for control of bleeding.

Ref: Harrison, Edition-18, Page-2415.

764. An infected pancreatic necrosis is treated with

a) iv Antibiotics

b) Laprotomy and surgical debridement

c) Ultrasound guided drainage

d) TPN

Correct Answer - B

Answer- B. Laprotomy and surgical debridement

Treatment

- An infected pancreatic necrosis is managed by laparotomy and surgical debridement of the necrotic tissue.
- Whereas pancreatic abscess are t/t by external drainage.
- Sterile necrotic pancreatitis is managed conservatively

765. Most common indication for liver transplant in children-

a) Biliary atresia

b) Cirrhosis

c) Hepatitis

d) Drug reactions

Correct Answer - A

Answer- A (Biliary atresia)

Explanation-

Indications for liver transplantation in infants and children include acute liver failure (ALF), chronic liver failure with pruritus, complications of cholestasis and failure to thrive. In young children, the most common liver disease leading to transplantation is biliary atresia

766. All of the following are true about brown pigment gall stones except

a) They may occur due to infection with E Coli

b) More common in Western countries

c) May be associated with clonorchis sinensis infestation

d) They are composed of calcium salts of unconjugated bilirubin with varying amounts of cholesterol and protein

Correct Answer - B

Answer- B. More common in Western countries

Brown stones

- Are composed of calcium salts of unconjugated bilirubin with varying amounts of cholesterol and protein (eg. Calcium bilirubinate, calcium palmitate and calcium stearate).
- Are typically found in Asia.
- Brown stones are rare in gallbladder. They form in bile duct and are related to bile stasis and infected bile.
- Gram-negative bacteria (particularly E. coli) secretes β -glucuronidase which deconjugates the soluble conjugated bilirubin. The free unconjugated bilirubin precipitates and combines with calcium and bile to form brown pigment stones. They form whenever static foreign bodies are present in the bile duct, for example 'stents' or parasites such as Clonorchis sinensis and Ascaris lumbricoides.

767. Most useful investigation in sliding hernia in female

a) Fluoroscopy

b) Barium-meal

c) Palpation method

d) Ultrasound

Correct Answer - B

Ans. is 'b' i.e., Barium meal

768. Hyperextension of hip producing pain in acute appendicitis is due to which muscle?

a) Gluteus maximus

b) Obdurator Externus

c) Psoas Major

d) Quadratus lumborum

Correct Answer - C

Answer- C. Psoas Major

- In retrocecal appendicitis, inflammed appendix is in contact with psoas muscle causing flexion of the hip joint. Hyperextension of the hip joint may induce abdominal pain. This is known as 'iliopsoas sign'and is typical of retrocecal appendicitis

769. A case of hepatocellular carcinoma involving segment IV and VI without any metastasis in a 62 year old alcoholic may be treated by all of the following except

a) Total hepatectomy and liver transplant

b) Radiation therapy

c) Chemoembolization

d) Cryotherapy

Correct Answer - D

Answer- D. Cryotherapy

Surgical

- Resection
- Orthotopic liver transplant

Ablative

- Percutaneous ethanol injection
- Percutaneous acetic acid injection
- Thermal ablation (cryotherapy, radiofrequency ablation, microwave)

Transarterial

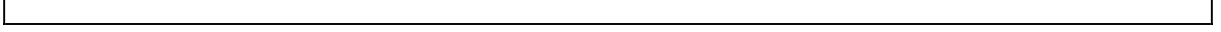
- Embolization
- Chemoembolization
- Radiotherapy

Combination transarterial/ablative

External beam radiation

Systemic

- Chemotherapy
- Hormonal therapy
- Immunotherapy



770. A 40 year old woman undergoing laproscopic cholecystectomy is found to have a mass suspicious of cancer of gall bladder. It appears to have permeated through the entire thickness but there is no involvement of overlying serosa. The next surgical step would be

a) Continue simple cholecystectomy

b) Extended cholecystectomy

c) Palliative radiotherapy

d) Radiofrequency Ablation

Correct Answer - B

Answer- B. Extended cholecystectomy

- The tumor described is in stage T2- Extended cholecystectomy is advised.

771. Hinchey classification is used for perforations of colon secondary to

a) Trauma

b) Carcinoma

c) Diverticulitis

d) Inflammatory enteropathy

Correct Answer - C

Answer-C. Diverticulitis

Hinchey Classification is used to describe perforations of the colon due to diverticulitis.

- Hinchey I - localised abscess (para-colonic)
- Hinchey II - pelvic abscess
- Hinchey III - purulent peritonitis (the presence of pus in the abdominal cavity)
- Hinchey IV - feculent peritonitis. (Intestinal perforation allowing feces into abdominal cavity)

772. Which is the treatment of choice for CA head of pancreas

a) Radiotherapy

b) Chemotherapy+ Radiotherapy

c) Whipple's Surgery

d) Resection of the entire pancreas with adjuvant chemotherapy

Correct Answer - C

Answer- C. Whipple's Surgery

- Whipples operation (Pancreaticoduodenectomy) is the most commonly performed operation for carcinoma of head of Pancreas.

773. Endoscopic ultrasound is extremely useful in staging which tumour?

a) CA Colon

b) CA Esophagus

c) CA Stomach

d) CA Head of pancreas

Correct Answer - B

Answer- B. CA Esophagus

Investigations for staging:

- CECT abdomen
- Endoscopic ultrasound: investigation of choice to assess the T stage of tumor and Lymph node metastasis.

774. Which of the following is most common and malignant neuroendocrine tumour of pancreas?

a) Gastrinoma

b) Glucagonoma

c) Insulinoma

d) VIPoma

Correct Answer - C

Answer- C. Insulinoma

- Insulinomas are the most common pancreatic neuroendocrine tumor, but only 10% are malignant.
- Gastrin-producing tumor (gastrinoma) are the most common malignant pancreatic neuroendocrine tumor.

775. What is the treatment of Barrett's Esophagus

a) Endoscopy and biopsy at regular intervals

b) Ivor-Lewis Surgery for resection of esophagus

c) Radiotherapy

d) Laser Excision

Correct Answer - A

Answer- A. Endoscopy and biopsy at regular intervals

- Treatment of Barrett's esophagus is same as for reflux esophagitis Conservative (antacids, H₂ blocking agents, elevation of the head of bed, and avoidance of smoking and alcohol etc.) and Anti-reflux surgery (Nissen's fundoplication is anti-reflux procedure of choice).

776. Most common benign tumour of the stomach is ?

a) Adenoma

b) Lipoma

c) Hamartoma

d) Leiomyoma

Correct Answer - D

Ans. is 'a' i.e., Adenoma

E **intestinal polyps** are the most *common benign tumor* of the stomach. They are of 5 types:

- a) Hyperplastic (regenerative) *most common type (75%), with low malignant potential*
- b) Adenomatous *second most common, with **high malignant potential** (should be removed when diagnosed)*
- c) Hamartomatous
- d) Inflammatory *with negligible malignant potential*
- e) Heterotopic

Polyps that are symptomatic, > 2 cm, or adenomatous should be removed, usually by endoscopic snare polypectomy.

777. Bright red blood in stools is suggestive of all except

a) Hemorrhoids

b) Gastric Ulcer

c) Fistula in Ano

d) Rectal cancer

Correct Answer - B

Answer- B. Gastric Ulcer

Causes of lower GI bleed (bright red blood)

- Diverticulosis
- CA Colon/Rectum
- Anal Fissure
- Angiodysplasia
- Hemorrhoids
- Colonic Polyp
- Fistula in ano

778. All of the following are true about small bowel lymphoma except

- a) Treatment is resection of involved segment with chemoradiotherapy
- b) AIDS and Celiac disease are predisposing conditions
- c) It is a very uncommon tumour amongst small bowel malignancies
- d) It may present with hemorrhage and perforation

Correct Answer - C

Answer- C. It is a very uncommon tumour amongst small bowel malignancies

Small bowel lymphoma

- Lymphoma of the small bowel is the most common small bowel malignancy, accounting accounts for -25% of all primary small bowel malignancies.
- **Predisposing conditions includes-**
 - AIDS
 - Coeliac disease
 - Clinical presentation
 - Gastrointestinal haemorrhage
 - perforation
 - Small bowel obstruction (uncommon)

779. Bakers cyst is a type of

a) Pulsion diverticulum of knee joint

b) Retention cyst

c) Bursistis

d) Benign tumor

Correct Answer - A

Answer- A. Pulsion diverticulum of knee joint

- It is the pulsion diverticulum of the knee joint, caused by chronic disease in the joint.
- Bulging of the posterior capsule and synovial herniation may produce a swelling in the popliteal fossa.

780. The most common presentation of endemic goiter is

a) Hypothyroid

b) Diffuse goiter

c) Hyperthyroid

d) Solitary nodule

Correct Answer - B

Answer is B (Diffuse Goiter) :

'Euthyroid state is generally the rule' – Robbins

Endemic goiter :occurs in geographical areas where the soil, water and food supply contains only low levels of iodine. The lack of the iodine leads to decreased synthesis of thyroid hormones and a compensatory increase in TSH, which in turn leads to follicular cell hypertrophy and hyperplasia and goitrous enlargement - Diffuse hyperplastic goitre. *'Euthyroid state is generally the rule' 'Rare patients are hyperthyroid'*

781. A 70 year old male chronic smoker is having carcinoma in situ of urinary bladder. TUR is done. Now there is a recurrence with the tumour extending into the muscle treatment would be

a) Intravesical BCG

b) Intravesical chemotherapy

c) Palliative Radiotherapy

d) Radical Cystectomy

Correct Answer - D

Answer- D. Radical Cystectomy

Tumor extending into muscle is stage T2 → Radical cystectomy is advised.

Treatment-

- T2- T4
- Radical cystectomy
- Neoadjuvant chemotherapy followed by radical cystectomy
- followed by adjuvant chemotherapy
- Concomitant chemotherapy and irradiation

782. A 70 year old male chronic smoker is diagnosed of having cancer of the urinary bladder. It is confined to the trigone and extension is upto the submucosa. The management would be

a) Complete transurethral resection

b) Complete transurethral resection with intravesical chemotherapy

c) Palliative radiotherapy

d) Radical cystectomy

Correct Answer - B

Answer- B. Complete transurethral resection with intravesical chemotherapy

Treatment-

T1

- Complete TUR followed by intravesical chemo- or immunotherapy or radical cystectomy

783. Which of the following is true about eruption of teeth -

a) Premolar appear in primary dentition

b) Incisors appear first in secondary dentition

c) 3rd molar is last to develop

d) b and c

Correct Answer - D

Ans. is 'b' i.e., Incisors appear first in secondary dentition; 'c' i.e., 3rd molar is last to develop

Dental development includes mineralization (calcification), eruption and exfoliation (shedding).

Wisdom teeth or third molars (M3s) are the last, most posteriorly placed permanent teeth to erupt. They usually erupt into the mouth between 17 and 25 years of age.

784. Which one of the following activities cannot be formed by a 7 month old infant-

a) Pivot

b) Cruise

c) Transfer objects

d) Enjoy mirror

Correct Answer - B
Ans. is 'b' i.e., Cruise

785. True about klinefelter syndrome is

a) Height > arm span

b) Karyotype 45 x 0

c) Testis and sperm count are normal

d) Puberty is attained at normal age

Correct Answer - D

Answer- D. Puberty is attained at normal age

KLINFELTER SYNDROME

- Klinefelter syndrome is the most common chromosomal disorder associated with male hypogonadism and infertility.
 - It is defined classically by a 47, XXY karyotype with variants demonstrating additional X and Y chromosomes.
- Pathophysiology:**
- The addition of more than 1 extra X or Y chromosome to a male karyotype
- Sexual characteristics-**
- Patients may lack secondary sexual characteristics because of a decrease in androgen production. This results in sparse facial/body/sexual hair, a high-pitched voice. They have eunuchoid body habitus.
 - Testicular dysgenesis (small firm testis, testis size <10 mL) may be present in postpubertal patients. Infertility/azoospermia may result from atrophy of the seminiferous tubules. Infertility is seen in practically all individuals with a 47 XXY karyotype. Patients with Klinefelter syndrome mosaicism (46,XY/ 47,XXY) can be fertile.

786. A 3 year old boy is detected to have bilateral renal calculi. Metabolic evaluation confirms the presence of marked hypercalciuria with normal blood levels of calcium, magnesium, phosphate, Uric acid and creatinine. A diagnosis of idiopathic hypercalciuria is made. The dietary management includes all, except -

a) Increased water intake

b) Low sodium diet

c) Reduced calcium intake

d) Avoid meat proteins

Correct Answer - C

Ans. is 'c' i.e., Reduced calcium intake

Idiopathic hypercalciuria

o This is inherited as *autosomal dominant* pattern.

o It is characterized by -

i) *Recurrent gross hematuria*

iii) *Dysuria*

v) *In the absence of stone formation*

ii) *Persistent microscopic hematuria*

iv) *Abdominal pain*

o If left untreated, hypercalciuria leads to *nephrolithiasis* in approximately 15% of cases.

Diagnosis

o Hypercalciuria is diagnosed by a *24 hr urinary calcium excretion*

exceeding 4 mg/kg.

o Screening test *urinary calcium to creatinine concentration ratio* > 0.2 (note in normal infant, younger than 7 months of age it may be as high as 0.8)

Treatment

o *Oral thiazide* -3 stimulates calcium reabsorption in PCT & DCT.

o *Potassium citrate*

o *Sodium restriction* because calcium excretion parallels sodium excretion.

o *Dietary calcium restriction is not recommended* because of the obligate requirement for growth.

787. Umbilical cord becomes black in ?

a) 2-3 days

b) 5-7 days

c) 7-10 days

d) 10-14 days

Correct Answer - A

Ans. is 'a' i.e., 2-3 days

- The cord becomes brownish black within 2 or 3 days after birth.
- It falls off in about 10-14 days.

788. The umbilical cord stump of a newborn most frequently sloughs off about the :

a) Second day after delivery

b) Fifth day after delivery

c) 10th day after delivery

d) 15th day after delivery

Correct Answer - C

10th day after delivery

- The cord becomes brownish black within 2 or 3 days after birth.
- It falls off in about 10-14 days.

789. After 3 days of birth, the base of umbilical cord is red and swollen. It indicates ?

a) Normal phenomenon

b) CHF

c) Infection

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Infection

- Redness or edema at the base of umbilical cord indicate inflammatory changes and infection.
- It is called as omphalitis.

790. Breast milk at room temperature stored for?

a) 4 hrs

b) 8 hrs

c) 12 hrs

d) 24 hrs

Correct Answer - B
Ans. is 'b' i.e., 8 hrs

**791. Which one of the following is true of
Transient Tachypnea of Newborn (TTNB)**

-

a) It is the commonest respiratory disorder caused by absence of surfactant

b) In premature babies, it is often fatal

c) Onset of respiratory distress is immediately after birth and it rarely lasts beyond 48 hrs

d) It often leads to chronic lung disease

Correct Answer - C

Ans. is 'c' i.e., Onset of respiratory distress is immediately after birth and it rarely lasts beyond 48 hrs

792. The maximum urinary concentration capacity in full term neonates is -

a) > 1000 mOsm/litre

b) 350 - 450 mOsm/litre

c) 900 - 1000 mOsm/litre

d) 600 - 700 mOsm/litre

Correct Answer - D

Ans. is 'd' i.e., 600-700 mOsm/Litre

o A full term infant can concentrate his urine to a maximum of 700-800 mOsm/kg.

o An older child can concentrate 1200-1400 mOsm/kg.

o A newborn can dilute his urine to a minimum of 50 mOsm/kg much like an older child.

793. 12 years old Shyam presented with gross hematuria with 80% dysmorphic RBC's 2 days after a attack of upper respiratory tract infection diagnosis is ?

a) Microangiopathic thrombotic anaemia

b) IgA Nephropathy

c) PSGN

d) H.S. purpura

Correct Answer - B

Ans. is 'b' i.e., IgA Nephropathy

o The patient is having glomerulo nephritis (*gross hematuria* and *dysmorphic RBC's*) 2 days after upper respiratory tract infection.

o Three conditions can manifest like this —> *IgA nephropathy Post streptococcal glomerulonephritis, H.S. Purpura.*

penicillin is recommended to limit the spread of nephritogenic organisms, antibiotic therapy does not affect the natural history of glomerulonephritis.

795. In morbus caeruleus foramen ovale closes after -

a) 6 months

b) 2 years

c) 1 year

d) Never

Correct Answer - D

Ans. is 'd' i.e., Never

- In few cases foramen ovale remains patent throughout life give rise to cyanosis, a condition called morbus caeruleus.

796. Which is the most common congenital abnormality in a baby of a diabetic woman?

a) Ventricular septal defect

b) Anencephaly

c) Meningomyelocele

d) Sacral agenesis

Correct Answer - A

Ans: A Ventricular septal defect

Explanation:

(Ref. Nelson 20/e p898)

- Most common congenital abnormality in a baby of diabetic women is ventricular septal defect.
- Congenital anomalies are increased threefold in infants of diabetic mothers.
- **Most common anomalies:**
 - Cardiac malformations (ventricular or atrial septal defect, transposition of the great vessels, truncus arteriosus, double-outlet right ventricle, tricuspid atresia, coarctation of the aorta).
 - Lumbosacral agenesis.
- **Additional anomalies:**
 - Neural tube defects, hydronephrosis, renal agenesis and dysplasia, duodenal or anorectal atresia, situs in versus, double ureter, and holoprosencephaly.
 - These infants may also demonstrate abdominal distention caused by a transient delay in development of the left side of the colon, the small left colon syndrome.

797. An 8-month-old female child presented to emergency with a heart rate of 220/minute and features of congestive heart failure. Her heart rate comes down to normal after intravenous administration of the drug shown in the picture below. What is the most likely diagnosis?



a) Atrial fibrillation.

b) Atrial flutter.

c) Paroxysmal supraventricular tachycardia.

d) Ventricular tachycardia.

Correct Answer - C

Ans.:C) Paroxysmal supraventricular tachycardia.

Adenosine is the drug of choice for **Paroxysmal supraventricular**

tachycardia.

Paroxysmal supraventricular tachycardia (paroxysmal SVT)

- It is an episodic condition with an abrupt onset and termination.
- SVT in general is any tachyarrhythmia that requires atrial and/or atrioventricular (AV) nodal tissue for its initiation and maintenance.
- Palpitations and dizziness are the most common symptoms reported by patients with SVT. Chest discomfort may be secondary to a rapid heart rate, and it frequently subsides with the termination of the tachycardia. Persistent SVT may lead to tachycardia-induced cardiomyopathy.
- Acute management of paroxysmal supraventricular tachycardia (PSVT) includes controlling the rate and preventing hemodynamic collapse.
 - If the patient is hypotensive or unstable, immediate cardioversion with sedation must be performed.
 - If the patient is stable, vagal maneuvers can be used to slow the heart rate and to convert to sinus rhythm.
 - If vagal maneuvers are not successful, adenosine can be used in increasing doses.
 - If adenosine does not work, atrioventricular (AV) nodal blocking agents like calcium channel blockers or beta-blockers should be used, as most patients who present with PSVT have AV nodal reentrant tachycardia (AVNRT) or AV reentrant tachycardia (AVRT).

798. An 8-month-old female child presented to emergency with a heart rate of 220/minute and features of congestive heart failure. Her heart rate comes down to normal after administering intravenous adenosine. What is the most likely diagnosis?

a) Atrial fibrillation

b) Atrial flutter

c) Paroxysmal supraventricular tachycardia

d) Ventricular tachycardia

Correct Answer - C

Ans. is 'c' i.e., Paroxysmal supraventricular tachycardia
o Adenosine is the DOS for PSVT.

799. Congenital long QT syndrome can lead to?

- a) Complete heart block
- b) Polymorphic ventricular tachycardia
- c) Acute myocardial infarction
- d) Recurrent supraventricular tachycardia

Correct Answer - B

Answer is B (polymorphic Ventricular Tachycardia)

Long QT syndrome in children:

- Congenital long QT Syndrome is a familial disorder characterized by a prolonged QT interval on Electrocardiogram Most forms of congenital long QT Syndromes are caused by Channelopathies created by mutations in one or more genes

Etiology:

Congenital

- Jarvell and Lange Nielson Syndrome
- Romano Ward syndrome

Acquired:

- Class IA and III antiarrhythmics
- Macrolide antibiotics
- Pentamidine
- Antimalarials
- Antipsychotics
- Arsenic trioxide

Characteristics:

- *Torsades de pointes* is the hallmark arrhythmia in the long QT syndrome

- *Pylomorphic ventricular tachycardia is synonymous with Torsades de Pointes .*
- *Congenital long QT Syndrome is associated with reduced repolarization reserve.*
- *Reduced repolarization reserve:Reduced repolarization reserve predisposes patients with marked QT prolongation to develop Torsades de pointes.*

Symptoms:

- May present with syncope due to torsades de pointesQ
- May present with sudden death due to ventricular.fibrillationQ

Note

Ventricular Tachyarrhythmias commonly develop during periods of adrenergic stimulation such as fright or exertion but may also develop during sleep.

Most competitive sports are contraindicated for patients with congenital long QT syndrome

Clinical conditions that are associated with reduced repolarization reserve

(Patient predisposed for marked QT prolongation and resultant Torsades-de pointes)

- Congenital long QT Syndrome
- Acquired long QT Syndrome caused by a variety of drugs/ medications
- Bradycardia
- Female gender
- Ventricular Hypertrophy
- Electrolyte disturbances such as hypokalemia and hypomagnesemia

800. What is the mechanism of aortic regurgitation in a Case of VSD ?

a) Prolapse of right coronary leaflet

b) Changes in the pressure gradient due to left to right shunt

c) Eisenmengerization

d) Congenital defect

Correct Answer - A

Ans. is 'a' i.e., Prolapse of right coronary leaflet

Ventricular septal defect and aortic regurgitation-pathophysiological aspects and therapeutic consequence.

Aortic regurgitation in VSD

- It is a rare association seen in around 5% of VSDs
- It is due to prolapse of the right coronary or non coronary leaflet of the aortic valve or both
- Common when the defect is in the infundibular septum.

801.

Oesophageal atresia may occur as a part of VACTERAL group of anomalies. What does 'TE' stand for?

a) Tetralogy of Fallot

b) Thoracic empyema

c) Tracheo-oesophageal fistula

d) Talipes equinovarus

Correct Answer - C

Ans. is 'c' i.e., Tracheo-oesophageal fistula

VACTERL association is a **disorder** that affects many body systems.

VACTERL stands for :

V:Vertebral defects

A:Anal atresia

C:Cardiac defects

TE:Tracheo-Esophageal fistula

R:Renal anomalies,

L:Limb abnormalities.

People diagnosed with **VACTERL association** typically have at least three of these characteristic features.

802. A patient was brought to emergency with complaints of high-grade fever and altered sensorium. He was diagnosed to be suffering from meningococcal meningitis. Which of the following is the most appropriate empirical treatment option?

a) Ceftriaxone

b) Piperacillin—Tazobactam

c) Penicillin

d) Cotrimoxazole

Correct Answer - A

Answer- A. Ceftriaxone

Meningococcal meningitis

Treatment:

- 3rd generation cephalosporin such as cefotaxime or ceftriaxone is DOC for initial therapy
- Prophylaxis: Rifampicin is DOC for meningococcal prophylaxis

ANTIBIOTIC RECOMMENDATIONS FOR BACTERIAL

MENINGITIS:

BACTERIA	ANTIBIOTIC(IV)	DURATION
Streptococcus Pneumonia	Vancomycin+3rd gen. Cephalosporin(Cefotaxime or ceftriaxone)	10-14 days
Nesseria	3rd gen. Cephalosporin(Cefotaxime or ceftriaxone) or	5-10 days

meningitidis	Penicillin G or Ampicillin	
H.influenza	3rd gen. Cephalosporin(Cefotaxime or ceftriaxone)	7-10 days
Listeria monocytogens	Penicillin G or Ampicillin ± Aminoglycocide	14-21 days
GBS	Penicillin G or Ampicillin ± Aminoglycocide	14-21 days
E.coli	3rd gen. Cephalosporin(Cefotaxime or ceftriaxone)	21 days

803. All the following are true of Craniopharyngioma except

a) Derived from Rathke's pouch

b) Contains epithelial cells

c) Present in sella or infra-sellar location

d) Causes visual disturbances

Correct Answer - C

Answer is C (Present in sella or infrasellar location):

Some of these lesions arise from the sella, but most are suprasellar^Q (Not infra-sellar). They arise from near the pituitary stalk and commonly extend into the supra sellar cistern.

- *Craniopharyngiomas arise from Rathke's pouch and constitute 3-5% of all intracranial neoplasms.*
- *Some of these lesions arise from the sella, but most are suprasellar^Q (Not infra-sellar). They arise from near the pituitary stalk and commonly extend into the supra sellar cistern.*
- *Consists of nests of cords of stratified squamous or columnar epithelium embedded in a spongy reticulum — Robbins 61h/1129*
- *Visual complaints are the presenting feature in about 80% of adults and 60% of children.*

804. Abnormalities of copper metabolism are implicated in the pathogenesis of all the following except ?

a) Wilson's disease

b) Monkes' Kinky-hair syndrome

c) Indian childhood cirrhosis

d) Keshan disease

Correct Answer - D

Ans. is 'd' i.e., Keshan disease

Keshan disease is a disorder of selenium metabolism.

o Following diseases are related to copper metabolism :-

i) Wilson's disease

ii) Menkes kinky hair syndrome

Indian childhood cirrhosis (increased hepatic, urinary and serum copper concentration are characteristic of ICC).

805. What is the WHO recommended fluid for correction of severe dehydration due to diarrhoea?

a) Normal saline

b) Ringer lactate

c) 5% dextrose

d) ORS

Correct Answer - B

The solutions recommended by the WHO for IV rehydration in cases of severe dehydration are

- Ringer's lactate
- Diarrhoea Treatment Solution
- Normal saline may be used if none of the above is available
- Plain dextrose solution should never be used.

Ref: Park 21st edition, page 203-204.

806. All of the following may occur in Down's syndrome except :

a) Hypothyroidism

b) Undescended testis

c) Ventricular septal defect

d) Brushfield's spots

Correct Answer - B

Answer is B (Undescended testis):

Health concerns observed in people with Down syndrome :

1. Sixty to 80 per cent of children with Down syndrome have *hearing deficits*.
2. Forty to 45 per cent of children with Down syndrome have *congenital heart disease*. ASD and VSD are the most common forms of congenital heart diseases seen.
3. Intestinal abnormalities also occur at a higher frequency in children with Down syndrome. Esophageal atresia, duodenal atresia and anal abnormalities are not uncommon in infants with Down syndrome.
4. Children with Down syndrome often have more eye problems than other children who do not have this chromosome disorder.
5. Eye problems such as strabismus, refractive errors and other eye conditions are frequently observed in children with Down syndrome.
6. *Brushfield's spots are whitish speckling on iris seen in light skinned people.*
7. Thyroid dysfunctions are more common in children with Down syndrome than in normal children. Between 15 and 20 per cent of children with Down syndrome have *hypothyroidism*. It is important to identify individuals with Down syndrome who have thyroid disorders

since hypothyroidism may compromise normal central nervous system functioning.

3. Skeletal problems have also been noted at a higher frequency in children with Down syndrome, including : patellar subluxation (incomplete or partial dislocation), hip dislocation, and atlantoaxial instability. Approximately 15 per cent of people with Down syndrome have atlantoaxial instability.
4. Other important medical aspects in Down syndrome, including immunologic concerns, leukemia, Alzheimer disease, seizure disorders, sleep apnea and skin disorders.

Undescended testis has not been described as an association with Down's syndrome.

807. MC injury related deaths in pediatrics is due to?

a) Road traffic accidents

b) Homicide

c) Burns

d) Drowning

Correct Answer - A

Ans. is 'a' i.e., Road traffic accidents

Cause of deaths in pediatric population by injuries

- Road traffic accidents -MC
- Drowning -2' MC
- Fire related burns- 3rd MC
- Homicide
- Falls
- Poisoning

808. A child with repeated skin infections presents with a liver abscess. The possible organism is ?

a) S. Mileri

b) B. Fragilis

c) S. Aureus

d) S. Agalactiae

Correct Answer - C

Ans. is 'c' i.e., S. Aureus

- Pyogenic liver abscess is more common in children followed by amoebic and fungal
- Staphylococcus aureus is the most common organism

809. All of the following are common causes of childhood blindness, EXCEPT:

a) Congenital rubella

b) Toxoplasmosis

c) Ophthalmia neonatorum

d) Congenital dacryocystitis

Correct Answer - D

The common causes of **childhood blindness** that affects the retina are *hereditary dystrophies, retinopathy of immaturity and toxoplasmosis*. Corneal blindness could be due to *vitamin A deficiency, measles and Ophthalmia neonatorum*. *Congenital rubella* affects the lens of the eye. Other congenital conditions and *cortical blindness* can also attribute to blindness in children.

Ref: Pediatric Retina: Medical and Surgical Approaches, Mary Elizabeth Hartnett, M.D., Page: 318

810. True about visual testing in a child:

a) Visual evoked potential

b) Teller's acuity card test

c) Perimetry

d) a and b both

Correct Answer - D

A i.e. Visual evoked potential; B i.e. Teller's acuity card test

- The ordinary tests types can not be used with young children who are easily distracted and may not know alphabets. So maturation of infant visual function has been studied by two techniques. - *Pattern visual evoked response/potential (VEP)*
- - *Preferential looking behaviour eg Teller or Cardiff acuity card.*
- In children *younger than 2 years the VEP tests proves more successful*; in children over two years who can manage both tests the results for VEP conform more nearly to the finding of Snellen & 'E' acuity testing than do the forced choice preferential looking tests results.
- VER/VEP is nothing but the *EEG recorded at the occipital lobe*. It is the only clinically objective technique available to assess the *functional state of the visual system beyond the retinal ganglion cells*. Since there is disproportionately large projection of the macular area in the occipital cortex, the VEP represents the *macula dominated response*.
- Flash VEP is the crudest of tests and merely indicates that light has been perceived by visual cortex. It is *fovea dominated global response* and is relatively *unaffected by opacities in the cornea and lens*. So it is a useful tests to grossly assess the *integrity of the macula or optic nerve* especially in infants, mentally retarded and

aphasic patients. It can distinguish between organic and psychological blindness (eg. malingering).

- Pattern reversal VEP is a *fovea specific response* as it depends on form sense and may give a very *rough estimate of visual acuity*. It is recorded using some patterned stimulus, as in checker board. The essential features is that while the pattern changes (black squares go white and white becomes black), the overall illumination remains the same.

Visual Acuity Testing In Child In Preverbal Children (1-3 years age)

- Occlusion of one eye
- Fixation test with a prism over the unoccluded eye
- Hundreds & Thousands Sweet test
- Rotation test
- Preferential looking procedures
 - *Teller acuity cardsQ*
 - Cardiff acuity cards
- Visually evoked potential
 - Can represent the visual acuity
 - More commonly used to detect pathology
- Optokinetic Nystagmus
 - Also useful in malingering & unco-operative patients

In Verbal Children (> 2 years age)

At 2 years

- Kay single picture test
- Multiple picture test

At 3 years

- Sheridan-Gardiner test: Overestimates acuity in amblyopia
- Sonksen Silver test More useful in amblyopia

At age 4 years

- Snellen's & LogMAR chart

Others

- E-Test
- Landolt C chart
- STYCAR test (Sight Testing for Young Children And Retarded)
- HOTV test

Others Tests

- Keeler-Elliot test
- Ffooks Symbol test
- Photo stress test
- Particularly useful for macular disorders specially central serous retinopathy

811. All are recognised features of Tourette's syndrome, EXCEPT:

a) Motor Tics

b) Ataxia

c) Coprolalia

d) Predominantly affects males

Correct Answer - B

Tourette's syndrome is a neurobehavioral disorder named after the French neurologist Georges Gilles de la Tourette. It predominantly affects males. TS is characterized by multiple motor tics often accompanied by vocalizations. Associated behavioral disturbances include anxiety, depression, attention deficit hyperactivity disorder, and obsessive-compulsive disorder.

Ref: Harrisons Principles of Internal Medicine, 18th Edition, Page 3332

812. DOC for Tourette syndrome

a) Haloperidol

b) Valproate

c) B complex

d) Clonidine

Correct Answer - D

Ans. is 'd' i.e., Clonidine

- Earlier Haloperidol was considered as DOC for Tourette syndrome.
- Clonidine is considered as DOC for Tourette syndrome

Treatment

There's no cure for Tourette syndrome. Treatment is aimed at controlling tics that interfere with everyday activities and functioning. When tics aren't severe, treatment might not be necessary.

Medication

- **Medications that block or lessen dopamine.** Fluphenazine, haloperidol (Haldol), risperidone (Risperdal) and pimozide (Orap) can help control tics.
- **Botulinum (Botox) injections**
- **Central adrenergic inhibitors.** Medications such as clonidine (Catapres, Kapvay) and guanfacine (Intuniv) — typically prescribed for high blood pressure — might help control behavioral symptoms such as impulse control problems and rage attacks.
- **Antidepressants.** Fluoxetine (Prozac, Sarafem, others)
- **Antiseizure medications.**

Therapy

- **Behavior therapy.** Cognitive Behavioral Interventions for Tics, including habit-reversal training, can help you monitor tics, identify premonitory urges and learn to voluntarily move in a way that's incompatible with the tic.
- **Psychotherapy.** In addition to helping you cope with Tourette syndrome, psychotherapy can help with accompanying problems, such as ADHD, obsessions, depression or anxiety.
- **Deep brain stimulation (DBS).** For severe tics that don't respond to other treatment, DBS might help. DBS involves implanting a battery-operated medical device in the brain to deliver electrical stimulation to targeted areas that control movement.

813. Mastitis in infants ?

a) Treated with antibiotics

b) More common in boys

c) It is a congenital infection

d) Most common organism is E Coli

Correct Answer - A

Ans. is 'a' i.e., Treated with antibiotics

- Mastitis (infection of breast tissue) typically occurs in infants after 2 months of age. During the first 2 weeks of life, it occurs with equal frequency in males and females; thereafter, it is more common in girls, with a female:male ratio of approximately 2:1.
- The majority of cases of neonatal mastitis are caused by *Staphylococcus aureus*; less common causes include gram-negative enteric organisms (e.g. *Escherichia coli*, *Salmonella*), anaerobes, and Group B *Streptococcus*

814. Basanti a 29 years female from Bihar present with active tuberculosis; she delivers baby all of the following are indicated except -

a) Administer INH to the baby

b) Withhold breast feeding

c) Give ATT to mother for 2 year

d) Ask mother to ensure proper disposal of sputum

Correct Answer - B

Ans. is 'b' i.e., Withhold breast feeding

"INH therapy for newborns is so effective that separation of mother and infant is no longer considered mandatory".

o The infant should be given INH prophylaxis and later on BCG vaccination.

815. All are liver glycogenosis except?

a) Von Girke disease

b) Hers disease

c) Type Ili glycogenosis

d) Pompes disease

Correct Answer - D
Ans. is 'd' i.e., Pompes disease

816. Tripod fracture is the name given for

a) Zygomatic fracture

b) Maxillary fracture

c) Mandibular fracture

d) Temporal fracture

Correct Answer - A

Zygoma fracture is also known as tripod fracture.

Clinical features of zygoma fracture

- Considerable swelling over zygomatic arch is common and makes clinical diagnosis more difficult.
- Flattening of malar prominence.
- Step-deformity of infraorbital margin.
- Anaesthesia in the distribution of infraorbital nerve.
- Trismus, due to depression of zygoma on the underlying coronoid process.
- Oblique palpebral fissure, due to the displacement of lateral palpebral ligament.
- Restricted ocular movement, due to entrapment of inferior rectus muscle. It may cause diplopia.
- Periorbital emphysema, due to escape of air from the maxillary sinus on nose-blowing.
- The mucosa of the maxillary sinus may be lacerated and cause epistaxis on that side.
- Fracture of the zygoma may or may not be painful to palpation and running a finger along the zygomatic arch may give a feel of a depressed fracture or a small dimple. The cheek may appear flattened compared to symmetry with the opposite side. This may be

obvious immediately following trauma or several days later once swelling has subsided.

817. What is a floating knee -

- a) Damage to both anterior and posterior cruciate ligaments
- b) Condition of knee due to tear in medial and lateral collateral ligaments
- c) Femoral shaft fracture with proximal tibia metaphyseal fracture
- d) Advanced tuberculosis of knee joint

Correct Answer - C

Answer- C. Femoral shaft fracture with proximal tibia metaphyseal fracture

- Floating knee is a flail knee joint resulting from fractures of the shafts or adjacent metaphyses of the femur and ipsilateral tibia.
- Floating knee injuries may include a combination of diaphyseal, metaphyseal, and intra-articular fractures.

818. The tensile strength of a bone is due to -

a) Strands of collagen

b) Hydroxyapatite crystals

c) Periosteum

d) Metaphysis

Correct Answer - A

Answer- A. Strands of collagen

- The strands of collagen give bone its tensile strength, and the interspersed crystals of hydroxyapatite give bone its compressional strength. These effects are synergistic.

819. Undertaker's fracture is seen at the level of cervical vertebra:
NEET 15

a) C1-C2

b) C3-C4

c) C5-C6

d) C6-C7

Correct Answer - D

Ans. C6-C7

It is caused due to the head falling backwards forcibly after death, which tears open one of the intervertebral discs, usually around C6 and C7.

. Due to the prolapse of the cervical intervertebral disc, there is increased tendency of subluxation of the lower cervical spine.

820. What is the normal orientation of humeral head -

a) Retroversion of 80 degrees

b) Retroversion of 30 degrees

c) Anteversion of 15 degrees

d) Anteversion of 50 degrees

Correct Answer - B

Answer- B. Retroversion of 30 degrees

- Normal humeral retroversion is 25-35 degrees.
- Normal femoral anteversion is 8-15 degrees

821. Preferred treatment of cubitus varus is -

a) Medial closing wedge osteotomy

b) Lateral closing wedge osteotomy

c) Medial opening wedge osteotomy

d) Lateral opening wedge osteotomy

Correct Answer - B

Answer- B. Lateral closing wedge osteotomy

- Cubitus varus- lateral closing wedge osteotomy, medial opening wedge osteotomy.

822. Which of the following is true about anterior shoulder dislocation -

a) It is most common type of shoulder dislocation

b) It is most commonly subclavicular

c) Patient keeps his arm in saluting position

d) Injury to brachial plexus may occur

Correct Answer - A

Answer- A. It is most common type of shoulder dislocation

- Most common type of shoulder dislocation is anterior dislocation (subcoracoid being most common).
- Patient keeps his arm by the side of the body in a position of abduction and internal rotation

823. Which among the following is TRUE regarding mallet finger?

a) Avulsion of tendon at the base of the middle phalanx

b) Avulsion of extensor tendon at the base of the distal phalanx

c) Fracture of distal phalanx

d) Fracture of the proximal phalanx

Correct Answer - B

The mallet finger deformity is characterized by a loss of full active distal interphalangeal joint extension with full passive ROM evident. The mallet finger reflects the loss of normal extensor force transmission via the terminal tendon insertion onto the distal phalanx.

The unopposed flexor digitorum profundus pulls the distal joint into flexion.

The usual mechanism of injury involves sudden passive flexion of the actively extended distal interphalangeal joint.

Disruption of the terminal tendon may be entirely confined to the tendon or may involve an avulsed fracture fragment from the dorsal lip of the distal phalanx proximal articular surface.

Ref: Bednar M.S., Light T.R. (2006). Chapter 10. Hand Surgery. In H.B. Skinner (Ed), CURRENT Diagnosis & Treatment in Orthopedics, 4e.

824.

In a patient with history of trauma and X-ray showing fracture of proximal part of medial bone of forearm with dislocation. The muscles which may get paralysed-

a) Flexor carpi ulnaris

b) Adductor pollicis

c) Extensor pollicis longus

d) Opponens pollicis

Correct Answer - C

Answer- C. Extensor pollicis longus

- Fracture of proximal part of medial bone of forearm (ulna) with dislocation is Monteggia fracture-dislocation.
- Most common nerve which may be injured in Monteggia fracture-dislocation is posterior interosseus nerve (PIN).

825. Which of the following displacement is not seen in Colle's fracture?

a) Radial tilt

b) Volar tilt

c) Dorsal displacement

d) Supination

Correct Answer - B

Ans. b. Volar tilt

Displacements of Colle's Fracture:

It results in dinner fork / silver fork / spoon shaped deformity

826. Fracture shaft of femur in children of less than 2 years old is treated by:

a) Open reduction

b) External fixation

c) Gallow's traction

d) Closed reduction

Correct Answer - C
C i.e. Gallow's traction

827. A 23 year old profession footballer sufferd a twisting injury to his right ankle. On examination there is a lot of swelling around the medial malleolus but xray doesn't show any fracture. The structure injured could be -

a) Deltoid Ligament

b) Anterior talofibular ligament

c) Spring ligament

d) Tendo Achilles

Correct Answer - A

Answer- A. Deltoid Ligament

- Deltoid ligament injuries involve the deltoid ligament that forms the medial part of the ankle joint.
- It attaches the medial malleolus to multiple tarsal bones.
- It occurs due to eversion and/or pronation injury, or can be associated with lateral ankle fractures.

828. MC comp. of # talus is

a) Avascular necrosis

b) Non union

c) Osteoarthritis of ankle joint.

d) Osteoarthritis of subtalar joint.

Correct Answer - A
A i.e Avascular necrosis

829. In Complete ACL rupture the tibia moves over the femur in which direction -

a) Forward

b) Backward

c) lateral

d) Medial

Correct Answer - A

Answer- A. Forward

- There is excessive anterior translation of the tibia with femur in ACL Injury.

830. Shenton's line is -

a) Line joining ASIS and ischeal tuberosity

b) Line joining ASIS and tip of GT

c) Line joining two ASIS [left & right]

d) Curve formed by neck of femur and obturator foramen

Correct Answer - D

Answer- D. Curve formed by neck of femur and obturator foramen

- It is a smooth curve formed by inferior border of neck of femur with superior margin of obturator foramen.

831. All of the following are red flag signs of back pain except -

a) Previous history of malignancy

b) Previous history of steroid use

c) Saddle anaesthesia

d) Age between 35-50

Correct Answer - D

Answer- D. Age between 35-50

Features

- Previous history malignancy (however long ago)
- Age 16< or >50 with NEW onset pain
- Weight loss (unexplained)
- Previous longstanding steroid use
- Recent serious illness
- Recent significant infection

Signs

- Saddle anaesthesia
- Reduced anal tone
- Hip or knee weakness

832. Irregular thigh folds are seen in -

a) Developmental dysplasia of hip

b) Perthe's disease

c) Slipped Capital femoral epiphysis

d) Congenital coxa vara

Correct Answer - A

Answer- A. Developmental dysplasia of hip

833. Pavlic harness is used to treat -

a) Deveopmental dysplasia of hip

b) Perthe's disease

c) Slipped Capital femoral epiphysis

d) Congenital coxa vara

Correct Answer - A

Answer- A. Deveopmental dysplasia of hip

Used in CDH -

- Bachelor's or frog leg / lorenz cast
- Von-Rosen's splint
- Pavlic Harness

834. The last deformity to be corrected by Ponseti's method for CTEV is -

a) Heel Varus

b) Equinus

c) Foot Adduction

d) Cavus

Correct Answer - B

Answer- B. Equinus

Ponseti's technique

- This involves first correcting the cavus deformity then the adduction and heel varus and finally the equinus deformity.
- This technique is now mostly accepted technique for CTEV correction as it is based on better understanding of the pathoanatomy of the deformed foot.
- The success of reduction is 90-98 Percent.

835. In which of the following deformities is the distal interphalangeal joint flexed and proximal interphalangeal joint extended ?

a) Boutonniere Deformity

b) Swan neck deformity

c) Z deformity

d) Claw Hand

Correct Answer - B

Answer- B. Swan neck deformity

- Swan neck deformity: Hyperextension of PIP joint and flexion at DIP joint.

836. Which of the following is difference between Rheumatoid arthritis and osteoarthritis

a) Osteocytes are seen in osteoarthritis

b) Systemic symptoms are seen in osteoarthritis

c) Rheumatoid arthritis is uncommon in hands and feet

d) Osteoarthritis is an autoimmune disease

Correct Answer - A

Answer- A. Osteocytes are seen in osteoarthritis

- Osteoarthritis
- Degenerative process
- Osteocytes seen
- Affects elderly
- Small joints of hands and feet affected
- ESR , CRP usually normal

837. Pain and arthritis of distal interphalangeal joint is seen in

a) Osteoarthritis

b) Rheumatoid Arthritis

c) Ankylosing spondylitis

d) Dequervain's disease

Correct Answer - A

Answer- A. Osteoarthritis

838. Tom smith's arthritis is due to

a) Pyogenic infection in infancy

b) TB

c) RA

d) OA

Correct Answer - A

Answer- A. Pyogenic infection in infancy

- Tom smith arthritis is the septic arthritis of hip joint, occurs in infancy. At this stage head of the femur is cartilaginous and is rapidly and completely destroyed by the pyogenic process.

839. A 18 year old male presents with a draining sinus on his left leg with pus discharge and discharge of bony pieces since in 3 months. The diagnosis

a) Chronic osteomyelitis

b) Ewing's Sarcoma

c) Osteoid Osteoma

d) Cellulitis

Correct Answer - A

Answer- A. Chronic osteomyelitis

- A history of bone piece discharge from the chronic sinusis considered diagnostic of chronic osteomyelitis.

840. Secondary osteosarcoma are associated with

a) Paget's disease

b) Osteogenesis imperfecta

c) Melhoreostosis

d) Ankylosing spondilitis

Correct Answer - A

Answer- A. Paget's disease

Causes of secondary osteosarcoma

- Pagets Disease
- Fibrous dysplasia
- Enchondromatosis
- Hereditary multiple exostosis
- Radiation
- Chronicosteomyelitis
- Bone infarction

841. Which of the following is bone forming malignant tumour?

a) Osteoid osteoma

b) Osteosarcoma

c) Chondrosarcoma

d) Giant cell tumour

Correct Answer - B

Answer- B. Osteosarcoma

- Bone forming malignant tumor → osteosarcoma

842. All of the following are associated with frozen shoulder except

a) Diabetes

b) Hyperthyroidism

c) Psoriasis

d) Hemiplegis

Correct Answer - C

Answer- C. Psoriasis

Frozen shoulder, also known as adhesive capsulitis or periarthritis of shoulder, is characterized by progressive pain and stiffness of the shoulder which usually resolves spontaneously after about 18 months.

The condition is particularly associated with-

- Diabetes
- Dupuytren's disease
- Hyperlipidemia
- Cardiac disease
- Hyperthyroidism
- Hemiplegia

843. First sign of compartment syndrome is ?

a) Pain

b) Tingling

c) Loss of pulse

d) Loss of movement

Correct Answer - A

Ans. is 'a' i.e., Pain

Clinical features of compartment syndrome

- Four signs are reliable in diagnosing a compartment syndrome :-
 1. Paresthesia or hypesthesia in nerves traversing the compartment
 2. Pain with passive stretching of the involved muscles (stretch pain)
 3. Pain with active flexion of the muscles
 4. Tenderness over the compartment
- Amongst these, stretch pain is the earliest sign of impending compartment syndrome. The ischemic muscles, when stretched, give rise to pain.
- Passive extension of fingers (stretching the fingers) produce pain in flexor compartment of forearm.
- Other features are Pulselessness, paralysis, Pallor and pain out of proportion to physical findings.
- Peripheral pulses, are present initially and disappear later. Therefore, pulse is not a reliable indicator for compartment syndrome.

844. All of the following are features of pyle disease except

a) It is an autosomal recessive disease

b) It is an epiphyseal dysplasia

c) Mental retardation is uncommon

d) Dental caries and mandibular prognathism

Correct Answer - B

Answer- B. It is an epiphyseal dysplasia

- Metaphyseal dysplasia, also known as Pyle's disease, Pyle's syndrome, Pyle-Cohn syndrome, and Bakwin-Krida syndrome is a rare disease in which the outer part of the shafts of long bones is thinner than normal and there is an increased chance of fractures.

845. Dripping Candle Wax lesion on spine ?

a) Metastasis

b) TB spine

c) Osteopetrosis

d) Melorheostosis

Correct Answer - D

Ans. is 'd' i.e., Melorheostosis

Melorheostosis

- Melorheostosis is a medical developmental disorder and mesenchymal dysplasia in which the bony cortex widens and becomes hyperdense in a sclerotomal distribution.
- Caused by a mutation of the LEMD3 gene.
- Can be detected by radiograph due to thickening of bony cortex resembling "dripping candle wax".
- Disorder tends to be unilateral and monoostotic, with only one limb typically involved. Cases with involvement of multiple limbs, ribs, and bones in the spine have also been reported.
- There are no reported cases of involvement of skull or facial bones.
- Melorheostosis can be associated with pain, physical deformity, skin and circulation problems, contractures, and functional limitation. It is also associated with a benign inner ear dysplasia known as osteosclerosis.

846. A 70 year old male , known case of chronic renal failure suffers from a pathological fracture of Rt femur, the diagnosis is

a) Primary Hyperparathyroidism

b) Secondary Hyperparathyroidism

c) Scurvy

d) Vitamin D Resistant rickets

Correct Answer - B

Answer- B. Secondary Hyperparathyroidism

- In CRF there is secondary hyperparathyroidism which causes pathological fracture.

847. Cervical stroma consists of?

a) Racemose glands

b) Tubular glands

c) Alveolar glands

d) Coiled tubular glands

Correct Answer - A

Ans. is 'a' i.e., Racemose glands

The glands which dip into the stroma are of complex racemose type and are lined by secretory columnar epithelium.

- There is no stroma in the cervix unlike the corpus and the lining epithelium rests on a thin basement membrane.
- The change in the epithelium and the glands during menstrual cycle and pregnancy are not so much as those in the endometrium.

848. Maintenance of the corpus luteum during the first trimester of pregnancy is accomplished principally by the secretion of:

a) Antidiuretic hormone (ADH)

b) Follicle stimulating hormone (FSH)

c) Human chorionic gonadotropin (hCG)

d) Luteinizing hormone (LH)

Correct Answer - C

The corpus luteum secretes estrogens, progesterone, and relaxin. hCG, secreted by the syncytiotrophoblast lining the placental villi, maintains the corpus luteum during the first trimester of pregnancy.

Antidiuretic hormone does not play a significant role during pregnancy.

FSH acts on granulosa cells to promote the conversion of androstenedione to estradiol.

LH acts on theca cells to promote androstenedione secretion.

849. Human placenta is ?

a) Discoid

b) Hemochorial

c) Deciduate

d) All the above

Correct Answer - D

Ans. is 'd' i.e., All the above

The human placenta is :

- Discoid, because of its shape.
- Hemochorial, because of direct contact of the chorion with the maternal blood and Deciduate, because some maternal tissue is shed at parturition.

850. Weight of placenta at term:
March 2013

a) 300 grams

b) 400 grams

c) 500 grams

d) 600 grams

Correct Answer - C

Ans. C i.e. 500 grams

- Placenta is a circular disc with diameter of 15 - 20 cm.
- Feels spongy and weighs 500 gm.
- At term, the weight of placenta to fetus is about 1 : 6
- At term, 4/5th of the placenta is of the fetal origin, i.e., majority of placenta is of fetal and not maternal origin.
- Maternal portion amounts to less than 1/5th of the placenta.
- Placenta is nothing but a specialized part of the chorion.

851. Most common type of vertex presentation:
March 2005

a) Right Occipito Posterior

b) Left Occipito posterior

c) Right Occipito Anterior

d) Left occipito anterior

Correct Answer - D

Ans. D: Left Occipito Anterior

Fetal presentation:

Cephalic (head-first) presentation:

Cephalic presentation is considered normal and occurs in about 96.5% of deliveries. There are different types of cephalic presentation, which depend on the fetal attitude.

Vertex occupying the left anterior quadrant of the pelvis is the commonest position (13%) and is known as L.O.A. (left occipito anterior) though L.O.T. (left occipito transverse) is commonest accounting for 40% of vertex presentations.

852. In low ovarian reserve, anti mullerian hormone level will be:

a) <1

b) 1-4

c) >7

d) >10

Correct Answer - A

Ans. A. <1

AMH and ovarian reserve

- AMH of 1.0 has very poor ovarian reserve
- The central concept for the measurement of blood levels of AMH to determine ovarian reserve is this: women with lower AMH levels have a lower ovarian reserve than women with high AMH levels. AMH is currently being used by fertility specialists to help predict women who may respond poorly to fertility medications and in general, couples who are less likely to be successful with fertility treatment.

853. A 23 year old female with type I diabetes presented with 6 weeks of amenorrhea. Her urine pregnancy test turned to be positive. Her sugar levels are not in control. The child may have all of the following abnormalities, EXCEPT:

a) Chromosomal abnormalities

b) Caudal regression

c) Renal agenesis

d) Duplex ureter

Correct Answer - A

Diabetes is not associated with increased risk for fetal chromosomal abnormalities.

Congenital malformations in infants of women with overt diabetes:

- Caudal regression
- Situs inversus
- Spina bifida, hydrocephaly, or other central nervous system defects
- Anencephaly
- Cardiac anomalies
- Anal/rectal atresia
- Renal anomalies
- .. Agenesis
- ?. Cystic kidney
- }. Duplex ureter

Ref: Cunningham F.G., Leveno K.J., Bloom S.L., Hauth J.C., Rouse D.J., Spong C.Y. (2010). Chapter 52. Diabetes. In F.G. Cunningham, K.J. Leveno, S.L. Bloom, J.C. Hauth, D.J. Rouse, C.Y. Spong (Eds), *Williams Obstetrics*, 23e.

854. In threatened abortion, the size of uterus:

a) Smaller than expected

b) Larger than expected

c) Corresponds to duration of amenorrhea

d) None of the above

Correct Answer - C

Ans. C.;Corresponds to duration of amenorrhea

SYMPTOMS:

- Bleeding may be only slight spotting, or it can be heavy.
- Pain and cramping are in the lower abdomen. They may be on one side, both sides, or in the middle. The pain can go into the lower back, buttocks, and genitals.

855. In which type of abortion the gestational age corresponds to the uterine size?

a) Threatened

b) Inevitable

c) Complete

d) Mixed

Correct Answer - A

Ans. A.Threatened

In Threatened abortion the gestational age corresponds to the uterine size.

856. Goodell's sign means:
JIPMER 07

a) Pulsation in the lateral vaginal fornix

b) Bluish color change in the vagina

c) Softening of the cervix from below upward

d) On bimanual palpation, the fingers can be approximated, as if nothing is in between

Correct Answer - C

Ans. C. Softening of the cervix from below upward

857. Following is used in 1st trimester MTP :

a) Mifepristone

b) Laminaria tent

c) Mifepristone & misoprostol

d) b and c

Correct Answer - D
b and c both

858. Congestive dysmenorrhea is seen in patients with?

a) Fibroid

b) IUD wearers

c) PID

d) All the above

Correct Answer - D

Ans. is 'd' i.e., All the above

Dysmenorrhoea is described under three clinical varieties

- Spasmodic dysmenorrhoea is the most prevalent and manifests as cramping pains, generally most pronounced on the first and second day of menstruation.
- Congestive dysmenorrhoea manifests as increasing pelvic discomfort and pelvic pain a few days before menses begin. Thereafter, the patient rapidly experiences relief in the symptoms. This variety is commonly seen in PID, IUCD wearers, pelvic endometriosis and fibroids. It is also experienced by women having varicosity of pelvic veins.
- Membranous dysmenorrhoea is a special group in which the endometrium is shed as a cast at the time of menstruation. The passage of the cast is accompanied by painful uterine cramps. This is a rare variety.

859. Intracytoplasmic injection of sperm is done when the infertile male has sperm count less than?

a) 3 million/ml

b) 4 million/ml

c) 5 million/ml

d) 6 million/ml

Correct Answer - C

Ans. is 'c' i.e., 5 million/ml

Indications of ICSI in male infertility comprise:

- Sperm count less than 5 million/mL.
- Decreased or absent motility of sperms.
- Many abnormal sperms.
- Previous failed IVF.
- Unexplained infertility.

860. Hysteroscopy means visualization of :

a) Genital tract

b) Fallopian tube

c) Uterine cavity

d) Cervix

Correct Answer - C
Uterine cavity

**861. First trimester abortion uses all,
except:
TN 09**

a) Mifepristone

b) Extra-amniotic ethacrydine lactate

c) Dilatation and evacuation

d) Suction evacuation

Correct Answer - B
Ans. Extra-amniotic ethacrydine lactate

862. Pregnancy as a result of contraceptive failure can be terminated as per which indication of the MTP act ?

a) To save life of mother

b) Social indication

c) Eugenic indication

d) None of the above

Correct Answer - B

Ans. is 'b' i.e., Social indication

Social indications

1. This is almost the sole indication and is covered under the provision "to prevent grave injury to the physical and mental health of the pregnant woman".
2. In about 80%, it is limited to parous women having unplanned pregnancy with low socioeconomic status.
3. Pregnancy caused by *rape* or unwanted pregnancy caused due to failure of any contraceptive device also falls in this category (20%).

863. Which of the following statements about partial mole is false?

a) Usually associated with Triploidy

b) Rarely causes Persistent Gestational Trophoblastic Neoplasia

c) Usually present as Missed Abortions

d) Can be reliably diagnosed by USG in early gestation

Correct Answer - D

Partial mole cannot be diagnosed by ultrasonography at a very early gestational ages, before the chorionic villi have attained vesicular pattern.

Ref: Williams Gynaecology, 1st Edition, Page 758; Novak's Textbook of Gynecology, 14th Edition, Pages 1588, 1582; Obstetrics and Gynecology By Beckmann, 6th Edition, Page 360; Textbook of Obstetrics By DC Dutta, 6th Edition, Page 201.

864. Inversion of the uterus, a complication is noticed in:
September 2011

a) 1st satge of labour

b) IIInd stage of labour

c) IIIrd stage of labor

d) Post partum period

Correct Answer - C

Ans. C: IIIrd stage of labour

Inversion of the uterus is a rare but a life threatening complication in IIIrd stage in which uterus is turned inside out partially or completely

Uterine inversion:

- Inside out turning of uterus
- Results from mismanaged 3rd stage of labour
- MC complication associated with inversion: Haemorrhage

865. Least common complication of fibroid is

:

a) Menstrual disorder

b) Malignancy

c) Urinary retention

d) Degeneration

Correct Answer - B

Ans. is **b i.e. Malignancy**

Sarcomatous change / malignancy in a fibroid is extremely rare (0.2-0.5%).

- Most common Fibroid to undergo malignant change is intramural followed by submucous.°
- Seen in postmenopausal or perimenopausal females of 40 years of age.
- Features suggestive of malignancy :
 - Sudden increase in size of fibroid
 - Fibroid becomes tender and painful
 - Post menopausal bleeding
 - Systemic upset and pyrexia may be present

Extra Edge : **Specific features of different types of fibroid —**

- | Submucous | Intramural | Subserous |
|--|---|---|
| <ul style="list-style-type: none">• Can cause abortions• Often associated with heavy menstrual bleeding meno- | <ul style="list-style-type: none">• Most common histologic type May cause | <ul style="list-style-type: none">• Do not cause abortions• Present on the surface of uterus• Pressure effects on |

- | | | |
|---|--|---|
| | rrhagia & anemia — 1st trimester bleeding | rectum / ureter |
| • Inflammatory change + | — Abruptio placentae | (constipation, hydronephrosis) |
| • Malignant change ++ | — Obstructed labour | |
| • Metrorrhagia can occur due to ulceration in submucous fibroid | — Preterm labour Uterine inertia | • Pedunculated & serous usually not cause anemia but torsion can occur° (wandering fibroid) |
| Inversion (in fundal sub mucous fibroid) | Associated with change is most common in intramural type | • Fibrous / calcific / hyaline change+ Pseudo Meigs syndrome |
| Calcific degeneration (10%) | | |
| • Usually involves the subserous fibroids with small pedicle or myomas of postmenopausal women. It is usually preceded by fatty degeneration. | | |
| • There is precipitation of calcium carbonate or phosphate within the tumor. When whole of the tumor is converted into a calcified mass, it is called "womb stone". | | |

866. Which of the following statements is not true about cervical cancer screening guidelines according to WHO?

a) Pap smear should be repeated yearly in women of reproductive age group

b) HPV test should be done five yearly in women between age of 30 to 49 years

c) Visual inspection with acetic acid is more reliable at older age as it becomes easier to identify the transformation zone with age

d) Pap smear can be repeated less frequently if it comes out negative for 3 consecutive years

Correct Answer - A

Ans: A. Pap smear should be repeated yearly in women of reproductive age group

(Ref Harrison 19/e p481, 18/e 1662)

WHO cervical cancer screening guidelines:

- Pap smear repeated 3 yrs once.

Tests for cervical cancer screening:

- 2 types – VIA & Pap smear.

VIA (Visual inspection with acetic acid):

- For women with visible transformation zone.
- Transformation zone - Most precancerous lesions occur.
- Preferred for younger than 50 females.
- Since menopause recedes transformation zone into endocervical canal & invisible

867. In Fothergill's operation the following are undertaken EXCEPT :

a) Amputation of cervix

b) Anterior colporrhaphy

c) Colpoperineorrhaphy

d) Plication of round ligament

Correct Answer - D
Plication of round ligament

868. Nugent's score for bacterial vaginosis includes all except?

a) Lactobacillus

b) Gardnerella vaginalis

c) Mobiluncus

d) Gonococcus

Correct Answer - D

Ans. is 'd' i.e., Gonococcus

Nugent's score for diagnosis of bacterial vaginosis (BV)

- The Nugent Score is a system employed for diagnosing BV using microscopic examination of a Gram-stained smear of vaginal discharge.
 - It is used primarily in research studies rather than clinical practice.
 - Scores are calculated by assessing predominance of three types of bacteria morphology and staining:
 1. Large gram-positive rods (Lactobacillus spp.) decrease in lactobacillus scored as 0 - 4,
 2. Small gram-variable rods (G vaginalis or Bacteroides spp.) scored as 0 - 4, and
 3. Curved gram-variable rods (Mobiluncus spp.) scored as 0 - 2.
 - A score of 7 to 10 is consistent with bacterial vaginosis.
- A score of 0-10 is generated from combining three other scores. The scores are as follows:**
- 0–3 is considered negative for BV
 - 4–6 is considered intermediate
 - 7+ is considered indicative of BV.

Curved
Gram

Lactobacillus morphotypes —

average per high powered (1000× oil immersion) field. View multiple fields.

Gardnerella / Bacteroides morphotypes — average per high powered (1000× oil immersion) field. View multiple fields.

variable rods — average per high powered (1000× oil immersion) field. View multiple fields (note that this factor is less important — scores of only 0–2 are possible)

- Score 0 for >30
 - Score 1 for 15–30
 - Score 2 for >= 14
 - Score 3 for < 1 (this is an average, so results can be >0, yet <1)
 - Score 4 for 0
- Score 0 for 0
 - Score 1 for 0, yet <1)
 - Score 2 for 1–4
 - Score 3 for 5–30
 - Score 4 for > 30

- Score 0 for 0
- Score 1 for < 5
- Score 2 for >= 5

869. Following are the risk factors for pelvic organ prolapse except ?

a) Vaginal child birth

b) Hypoestrogenism

c) Constipation

d) Crohns disease

Correct Answer - D

Ans. is 'd' i.e., Crohns disease

Risk factors associated with pelvic organ prolapse are :

1. Pregnancy and vaginal delivery
2. Menopause (Aging, hypoestrogenism)
3. Increased intra-abdominal pressure (COPD, constipation, obesity)
4. Pelvic floor trauma
5. Genetic factors (Race, connective tissue disorders)
6. Spina bifida

870. Which of the following is the most suitable management for a patient who is known case of Glucose 6 phosphate Dehydrogenase deficiency and presents with 6 months of amenorrhea and Hb of 6gm%?

a) Immediate blood transfusion

b) Iron and folic acid supplementation

c) Investigate and treat

d) Both b and c

Correct Answer - D

Ans. is d i.e., Both b and c

- The patient in question has severe anemia (

871. 30 years old female presents with chronic cyclical abdominal pain. Pain is increased during the 5 days of menstrual cycle. Patient is married for 2 years and has not conceived till now. What is the most appropriate next step in management?

a) Ultrasonography

b) Test for male infertility

c) CT Scan of abdomen with contrast

d) Test for urine infection

Correct Answer - A

Ans. is 'a' i.e., Ultrasonography

- According the clinical scenario of chronic cyclical abdominal pain with infertility the most probable clinical diagnosis is endometriosis and the most logical next step in management of this patient is to investigate the patient with ultrasonography for definitive diagnosis of endometriosis.

872. Hypogonadotropic primary amenorrhoea is treated by?

a) Gonadotropin therapy

b) Estrogens and progesterone

c) Assisted reproductive techniques

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Gonadotropin therapy

Treatment of Hypogonadotropic Primary Amenorrhoea:

- These women have FSH level less than 40 mIU/mL.
- Hypogonadotropinaemia leading to hypogonadism is usually the result of hypothalamic dysfunction, pituitary failure or systemic illnesses.
- Administration of GnRH helps to differentiate hypothalamic dysfunction from pituitary failure. In patients with pituitary failure systemic LH level will not rise after giving GnRH.
- Empty sella turcica, cause of pituitary failure, is characterized by herniation of subarachnoid membrane into the pituitary sella turcica.
- Absence of pituitary gland causes absence or low level of FSH and LH.
- In such patients gonadotropin hormone therapy is required for management of primary amenorrhoea.

873. Androgenic activity of the 19 nortestosterone nucleus is decreased by ?

a) Adding alkyl group at C 17

b) Removal of methyl group at C 19

c) Adding methyl group at C 18

d) Substituting chlorine atom at C21

Correct Answer - B

Ans. is 'b' i.e., Removal of methyl group at C 19

- Substitution of a 7α -methyl group in 17β -hydroxyestr-4-en-3-one (19-nortestosterone) or its 17α -methyl derivative enhanced the androgenic activities of the parent compounds as well as their ability to bind to β protein and to prostate cell nuclei. Thus, 7α , 17α -dimethyl-19-nortestosterone had an apparent affinity for β protein several times higher than that of 5α -dihydrotestosterone.

874. Major estrogen in normal adult women is

-

a) Estradiol

b) Estrone

c) Estriol

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Estradiol

o Estradiol is the major estrogen secreted by the ovary.

875. Use of tamoxifen in carcinoma of breast patients does not lead to the following side effects ?

a) Thromboembolic events

b) Endometrial Carcinoma

c) Cataract

d) Cancer in opposite breast

Correct Answer - D

Ans is 'd' i.e. Cancer in opposite breast

Adverse effects of Tamoxifen: ?

1. Hot flushes, nausea vomiting (most common side effects)*
2. Menstrual irregularities, vaginal bleeding, discharge, pruritis vulvae & dermatitis
3. Endometrial cancer
4. Thromboembolism
5. Cataracts
6. Retinal deposits & decreased visual acuity

Benefits of Tamoxifen: ?

1. Estrogen receptor positive breast cancer: used in both pre and postmenopausal women.
2. it appears to increase bone density (slows the development of osteoporosis in postmenopausal women) favourably affect lipid and lipoprotein profiles.

Anastrozole medication is also used to treat breast cancer in women whose breast cancer has worsened after taking tamoxifen (Nolvadex).

Anastrozole is in a class of medications called nonsteroidal aromatase inhibitors.
It works by decreasing the amount of estrogen the body makes.

876. Most common site of tubal rupture is seen in which tubal pregnancy ?

a) Interstitial

b) Ampulla

c) Isthmus

d) Infundibulum

Correct Answer - C

Ans. is 'c' i.e., Isthmus

- Isthmic and interstitial pregnancies have more chances of rupture while the ampullary pregnancies have more chances of tubal abortion.
- Out of the isthmic and interstitial ectopics, isthmic pregnancies have more chance of rupture as isthmic pregnancies are more common and wall of isthmic portion of the fallopian tube is narrow and less distensible and is easily eroded by chorionic villi.

877. The following drugs/methods are used for cervical ripening, except?

a) Oxytocin

b) PGE

c) Stripping of membrane

d) Ergometrine

Correct Answer - D

Prostaglandins, oxytocin, and stripping of membranes are usually done for cervical ripening. Other methods are Foley bulb catheter, early amniotomy, and late amniotomy. Ergometrine is used in promoting of contraction and involution of uterus after delivery.

878. In non pregnant uterus cervical incompetence is treated by ?

a) Counselling

b) Shirodkars cerclage suture

c) McDonalds cerclage suture

d) Abdominal cerclage

Correct Answer - A

Ans. is 'a' i.e., Counselling

Cervical incompetence treatment in INTERCONCEPTIONAL PERIOD (non pregnant uterus):

- To alleviate anxiety and to improve the psychology - couple should be counselled that even after three consecutive miscarriages, the chance of a successful pregnancy is high (70%). However, the success rate depends on the underlying etiology as well as the age of the woman.

879. In cervical incompetence, encerclage operation done are

a) Mc Donald operation

b) Shirodkar operation Purandare's operation

c) Khanna's sling operation

d) a and b

Correct Answer - D

Ans. is a and b i.e. Mc Donald operation and shirodkar operation

Friends, Cervical incompetence is an important topic. Many questions have been asked on it time and again. So I am giving all its details.

Cervical incompetence

Cervical incompetence is characterised by (cervical dilatation in the second or early third trimester with ballooning of the amniotic sac into the vagina, followed by rupture of membranes and expulsion of a usually live fetus. The usual timing is 16 to 24 weeks.

Aetiology :

- *Congenital ?*
 - Developmental weakness of cervix.
 - Associated with uterine anomalies like septate uterus.
 - Following in utero exposure to diethyl stilbestrol.
- *Acquired due to previous cervical trauma ?*

Forcible dilatation during MTP and D & C.

 - Conisation of cervix.
 - Cauterisation of cervix.

Amputation of cervix or Fothergill's operation.
- *Diagnosis :*
 - History: The typical history of painless rupture of membranes

followed by the quick delivery of a live fetus in midtrimester is very suggestive.°

- Non pregnant state: The internal os allows the passage of a No. 8 Hegar's cervical dilator or Foley's catheter filled with 1 ml water without resistance.°
- Premenstrual Hystercervicography will show the typical funneling of the internal os°.
- In Pregnancy:
 - Transvaginal ultrasound is the ideal method to follow up and detect early incompetence.
 - The normal cervical length at 14 weeks is 35 - 40 mm and the internal os diameter is less than 20 mm. A cervical length less than 30 mm and an internal os diameter more than 20 mm is suggestive of cervical incompetence.
 - Funneling of the os.°

Note: Funneling is the ultrasound finding of herniation of the fetal membranes into the upper part of the endocervical canal.

Management : *The treatment is surgical by a cervical cerclage.*

Time of operation : Cervical cerclage is usually delayed up to 12 - 14 weeks so that miscarriage due to other causes can be eliminated or it should be done atleast 2 weeks earlier than the lowest period of earlier wastage (but never earlier than 10 weeks).

Sonography should be done prior to cerclage to confirm a live fetus and to rule out anomalies.

Procedures

Mc Donald's operation

Shirodkar's operation

- It has good success rate & less blood loss.
- The most commonly performed procedure now-a-days.
- The Shirodkar operation is technically more involved & takes longer to perform.

Abdominal cerclage : Indications of transabdominal cerclage:

Women with incompetent cervix due to severe trauma to cervix such as deep laceration. extensive conization or repeated LEP for treatment of Ca in situ.

- H/O repetitive 2nd trimester loss and failed vaginal cerclages.
It is also indicated in women with 2nd trimester losses and anatomic

It is also indicated in women with 2nd trimester losses and anatomic impossibility to place a vaginal cerclage.

Removal of Stitch : The Stitch should be removed at 37 — 38 week or earlier if labour pain starts or features of abortion appear.

Contraindications

- Intra uterine infection
- Ruptured membranes
- H/o vaginal bleeding
- Severe uterine irritability
- Cervical dilatation > 4 cms

Complications

- Chorloamnionitis Rupture of membranes
- Preterm labour
- Necrosis of cervix

Rupture uterus

**880. Gold standard investigation in
diagnosing PID is:
*March 2005***

a) Anti chlamydial Ab

b) Laparoscopy

c) USG

d) Blood leucocyte count

Correct Answer - B

Ans. B: Laparoscopy

Investigations in a case of PID:

- Physical examination
- Pregnancy test (to rule out anectopic pregnancy)
- White blood cell test (to rule out appendicitis)
- Genital culture (to look for gonorrhoea and chlamydia).
- An endometrial biopsy (tissue sample removed from the endometrium)
- Sonogram (if abscesses are suspected)
- Culdocentesis (fluid sample taken from uterine sac)
- Laparoscopy are done.

Laparoscopy is considered the "gold standard" for diagnosis of PID, because it allows visualization of the pelvic organs. The procedure involves inserting a tiny, flexible lighted tube through a small incision just below the navel.

This procedure is recommended when results of the preliminary tests (physical exam, blood tests and cultures) are unclear.

**881. Mechanism of action of abortion stick
used in criminal abortion:**

AIIMS 06; AI 08

a) Necrosis of endometrium causing infection

b) Uterine contraction

c) Stimulation of uterine nerves

d) Inducing uterine relaxation

Correct Answer - B
Ans. Uterine contraction

882. Face-to-pubis delivery often occurs in :

a) Android pelvis

b) Platypelloid pelvis

c) Anthropoid pelvis

d) Gynaecoid pelvis

Correct Answer - C
Anthropoid pelvis

883. Drug of choice for cystitis ?

a) Amoxicillin

b) Chloramphenicol

c) Cotrimoxazole

d) Ciprofloxacin

Correct Answer - D

Ans. is 'd' i.e., Ciprofloxacin

Fluroquinolones form the first line of drugs to be used against cystitis.

Ciprofloxacin is a fluoroquinolone and so the most appropriate answer.

- Women with cystitis respond readily to any of several regimens. Most of the three-day regimens are usually 90-percent effective. Following are the three day regimes followed for management of cystitis:

3-day course

Amoxicillin, 500 mg three times daily

Ampicillin, 250 mg four times daily

Cephalosporin, 250 mg four times daily

Ciprofloxacin, 250 mg twice daily

Levofloxacin, 250 or 500 mg daily

Nitrofurantoin, 50 to 100 mg four times daily or 100 mg twice daily

Trimethoprim-sulfamethoxazole, 160/800 mg two times daily

884. Quickening can be felt at weeks :

a) 14 weeks

b) 15 weeks

c) 16 weeks

d) 19 weeks

Correct Answer - C
16 weeks

885. Surgery for mitral stenosis during pregnancy is ideally done at :

a) 14 weeks

b) 20 weeks

c) 28 weeks

d) 32 weeks

Correct Answer - A
14 weeks

886. All are causes of amenorrhoea EXCEPT :

a) Pituitary adenoma

b) Chronic nephritis

c) Tubercular endometritis

d) Adenomyosis

Correct Answer - D
Adenomyosis

887. Undiagnosed or undetected ectopic pregnancy is a common cause of maternal death during the first trimester. Most valuable diagnostic test in a case of suspected ectopic pregnancy is:

a) Serial (3-hCG levels)

b) Transvaginal USG

c) Progesterone measurement

d) Culdocentesis

Correct Answer - B

Transvaginal ultrasonography (TVUS) has the advantage of earlier and better localization of the pregnancy, with less pelvic discomfort because the bladder is not painfully distended.

The double-ring sign and the yolk sac must be identified to ensure that the pregnancy is intrauterine.

When an intrauterine pregnancy is not visualized on TVUS and the hCG level exceeds 1000–2000 mIU/mL, suspicion for an ectopic pregnancy should be high.

Ref: Hill M.J., DeCherney A.H. (2013). Chapter 36. Imaging in Gynecology. In A.H. DeCherney, L. Nathan, N. Laufer, A.S. Roman (Eds), CURRENT Diagnosis & Treatment: Obstetrics & Gynecology, 11e.

888. Most common cause of hypothyroidism in pregnancy is ?

a) Nutritional

b) Irradiation

c) Anti thyroid drugs ie iatrogenic

d) Anti TPO antibody

Correct Answer - D

Ans. is 'd' i.e., Anti TPO antibody

Hypothyroidism in pregnancy

The clinical association of hypothyroidism in pregnancy may be due to :

- First time diagnosis in pregnancy
- Hypothyroid women who either discontinue thyroid therapy or who need larger doses in pregnancy
- Hyperthyroid women on excessive amounts of antithyroid drugs
- Women with lithium or amiodarone therapy
- Primary hypothyroidism met in pregnancy is mostly related to thyroid autoimmunity (Hashimoto thyroiditis).
- Serum thyroid peroxidase antibodies (TPO-Ab) or antimicrosomal antibodies are elevated in autoimmune thyroiditis.

889. A 30 years old G3P2 with 10 weeks of amenorrhea comes with an intrauterine pregnancy with intra uterine contraceptive device in situ. On pelvic examination, the string of the IUCD was visible at the cervical os. Patient wishes to continue pregnancy. What will you do?

a) Leave IUCD and continue pregnancy

b) Terminate pregnancy because of high risk of infections

c) Continue pregnancy with use of antibiotics throughout pregnancy

d) Remove intrauterine contraceptive device

Correct Answer - D

Ans: D. Remove intrauterine contraceptive device

(Ref: Dutta 8le p618-619, 6le p540)

- Women who become pregnant with an IUCD in situ should be informed of the increased risks of second-trimester miscarriage, preterm delivery and infection if the intrauterine method is left in situ.
- Removal would reduce adverse outcomes but is associated with a small risk of miscarriage.

890. Best method to deliver arms in breech :

a) Lovset's method

b) Smellie veit

c) Pinard's

d) Any of the above

Correct Answer - A

Ans. is a i.e. Lovset's method

Friends amongst maipresentations - Breech is the most frequently asked - ***'Many question are asked on Breech. So, I am summarising all the important points you need to know about breech.'***

Breech

- Most common cause prematurity.
- *Most common type of Breech* : Frank Breech / Extended breech.
- *Incidence* : – 20% at 28 weeks
 - 5% at 34 weeks
 - 3% at term
- Commonest position – Leftsacroanterior (LSA).
- Engaging diameter of breech – Bitrochanteric (10 cm).
- Engaging diameter of shoulder – Bisacromial (12 cm).
- Engaging diameter of head – suboccipitofrontal (10 cm).
- Head is born by flexion.°
- **Diagnosis by Vaginal examination :**

Flexed Breech (MC in multipara)

Ischia' tuberosities, anus, sacrum, buttocks

Extended Breech Footling presentation (MC in primigravida)

Buttocks with genitalia are the presenting part, feet are the presenting part, feet

and feet are palpated not felt • Maximum chances of cord prolapse

Algorithm for Management of Breech

Assess maternal and fetal well being

External cephalic version

Elective cesarean section (> 38 weeks)

Done after 35 completed weeks

Indications

Ideal time 36th week

• Contraindications to ECV :

- APH
- Pre eclampsia, hypertension
- Multiple pregnancy
- Obesity
- Bad obstetric history
- Elderly primigravida
- Ruptured membranes
- Oligohydramnios
- Contracted pelvis
- Congenital abnormalities of uterus
- Significant fetal anomalies/dead fetus

- IUGR

- • Fetal weight < 1500 or > 3500 gm
- • All complicated pregnancies eg.
 - Associated with
 - APH
 - preeclampsia
 - oligohydramnios
 - Abnormal clinical pelvimetry/contracted or borderline pelvis
 - Fetal distress
- • If breech has :
 - Hyperextended head
 - Footling / Knee presentation
 - Is complete breech

Previous LSCS

891. Commonest cause of genital fistulae in India :

a) Obstructed labour

b) Operation therapy

c) Radiotherapy

d) Laparoscopic injuries

Correct Answer - A
Obstructed labour

892. Endometrial repair after menstrual bleeding is under the influence of which hormone ?

a) FSH

b) Progesterone

c) Estrogen

d) LH

Correct Answer - C

Ans. is 'c' i.e., Estrogen

- After menstruation there is proliferative phase, which is under the control of estrogen.
- Secretory phase is controlled by progesterone

893. The most common site of puerperal infection is :

a) Episiotomy wound

b) Placental site

c) Vaginal laceration

d) Cervical laceration

Correct Answer - B
Placental site

894. Common cause of death in inversion of uterus :

a) Neurogenic shock

b) Hemorrhage

c) Pulmonary embolism

d) Infection

Correct Answer - B
Hemorrhage

895. All are done in management of shoulder dystocia except :

a) Fundal pressure

b) Mc Roberts manoeuvre

c) Suprapubic pressure

d) Woods manoeuvre

Correct Answer - A

Ans. is a i.e. Fundal pressure

The term shoulder dystocia is used to define a wide range of difficulties encountered in the delivery of the shoulders.

Risk factors : *Shoulder dystocia can occur in all those conditions where fetus is too big or in case of mismanaged labour.*

- Fetal macrosomia°
- Maternal diabetes°
- Maternal obesity°
- Post term pregnancy°
- Anencephaly°

Fetal ascites°

H/o previous macrosomia°

- Midpelvic instrument delivery°

Management of shoulder dystocia

Shoulder dystocia should be managed as quickly **as** possible as interval of time from delivery of head to delivery of body is of great importance as far as survival **of** baby is concerned.

- Immediately after recognition of shoulder dystocia extra help should be called, in the form of midwifery assistance, an obstetrician, a paediatric resuscitation team and an anaesthetist.

- Maternal pushing should be discouraged, as this may lead to further impaction of the shoulder, thereby exacerbating the situation.
- Liberal episiotomy should be given to provide more space posteriorly.
- *Fundal pressure should not be employed.* As it is associated with an unacceptably high neonatal complication rate and may result in uterine rupture.
- *Moderate suprapubic pressure can be applied* by the assistant. Suprapubic pressure can be employed together with McRoberts' manoeuvre to improve success rates, because suprapubic pressure reduces the bisacromial diameter and rotates the anterior shoulder into the oblique pelvic diameter. The shoulder is then free to slip underneath the symphysis pubic with the aid of routine traction.
- *McRoberts' manoeuvre* is the single most effective intervention and should be the first manoeuvre to be performed. The McRobert's manoeuvre is flexion and abduction of the maternal hips, positioning the maternal thighs on her abdomen. It straightens the lumbo-sacral angle, rotates the maternal pelvis cephalad and is associated with an increase in uterine pressure and amplitude of contractions.
- *Advanced manoeuvres like Woods' Mallogui, r,* should be used if the McRobert's manoeuvre and suprapubic pressure fail. Woods' corkscrew manoeuvre is progressively rotating the posterior shoulder by 180°. So that the impacted anterior shoulder is released.
- Several third line methods have been described for those cases resistant to all simple measures. These include cleidotomy (bending the clavicle with a finger or surgical division), symphysiotomy (dividing the symphyseal ligament) and the Zavanelli manoeuvre. Zavanelli manoeuvre targets at replacing the head into the pelvis followed by cesarean section.
This manoeuvre should be the last resort as it is associated with high degree of neonatal deaths still births and neonatal brain damage.

Extra Edge :

Shoulder dystocia drill - *Sequence to be followed in case of shoulder dystocia.*

Note: In AI-10 the same question was repeated with option a i.e.

Fundal pressure being replaced by Mauriceau smellie viet manoeuvre. Rest of the options were same.

There in that question the answer would be Mauriceau Smellie viet manoeuvre **as it** is not used for shoulder dystocia but for delivering the after coming head of breech.

First line measures	Second line measures	Third line
<ul style="list-style-type: none">· Call for help· Liberal episiotomy	<ul style="list-style-type: none">· Delivery of posterior arm· Wood's cork screw method	<ul style="list-style-type: none">· Cleidotomy· Symphiotomy· Zavanelli manoeuvre
<ul style="list-style-type: none">· Avoid fundal pressure· Suprapubic pressure given· McRobert's manoeuvre		

Note: In AI-10 the same question was repeated with option a i.e. Fundal pressure being replaced by Mauriceau smellie viet manoeuvre. Rest of the options were same.

There in that question the answer would be Mauriceau Smellie viet manoeuvre **as it** is not used for shoulder dystocia but for delivering the after coming head of breech.

896. Staging laprotomy is usually done for ?

a) Carcinoma ovary

b) Carcinoma cervix

c) Carcinoma endometrium

d) Carcinoma fallopian tube

Correct Answer - C

Ans. is 'c' i.e., Carcinoma endometrium

Staging of Carcinoma endometrium:

- Though surgical staging is recommended, clinical staging is applicable in operable cases.
- A staging laparotomy is recommended through a midline lower abdominal incision and the peritoneal ascetic fluid on washings is collected for cytology.
- Complete abdominal exploration followed by total abdominal hysterectomy (TAH) along with bilateralsalpingo-oophorectomy (BSO) omentectomy and pelvic and para-aortic lymph node sampling remains the cornerstone in the management of early endometrial cancer

897. All are true regarding endometriosis, except :

a) Hormone dependent condition

b) Can involve lung. pleura

c) Contains clear fluid

d) Ovary is the most common site

Correct Answer - C

Ans. is c i.e. Contains clear fluid

As already explained in previous question, endometriosis is occurrence of functioning endometrial tissue (glands + stroma) outside the uterine cavity.

Whatever the initial genesis of endometriosis its further development depends mainly on estrogen (Option "a)

It can occur anywhere in body, Most common site being ovary° (Option "d").

Can also involve lungs and pleura° (Option "b").

– In endometriosis ovary contains tarry dark brown fluid (due to presence of blood pigments like hemosiderin) and cul de sac has yellow brown fluid.

Clear fluid is not seen anywhere. So, Option "c" is incorrect.

For more details about endometriosis, see answer 1

898. A 38 weeks pregnant lady delivered baby without upper limb. What can be the cause ?

a) Amniotic band

b) True knot of umbilical cord

c) Genetic abnormality

d) None

Correct Answer - A

Ans. is 'a' i.e., Amniotic band

- It is a case of limb reduction defect or congenital amputation in which there is defect in formation of a part of limb or the entire limb.
- The exact cause of congenital amputation is unknown and can result from a number of causes. However, most cases show that the first three months in a pregnancy are when most birth defects occur because that is when the organs of the fetus are beginning to form.
- One common cause is amniotic band syndrome, which occurs when the inner fetal membrane (amnion) ruptures without injury to the outer membrane (chorion).
- Fibrous bands from the ruptured amnion float in the amniotic fluid and can get entangled with the fetus, thus reducing blood supply to the developing limbs to such an extent that the limbs can become strangulated, the tissues die and are absorbed into the amniotic fluid.

899. Teratogens produce all or none effect till which day of gestation?

a) 21

b) 31

c) 41

d) 51

Correct Answer - B

Ans. is 'b' i.e., 31

- Timing of Teratogen exposure and The hazards
- Before D 31: Teratogen produces an all or none effect. The conceptus either does not survive or survives without anomalies. In early conception only few cells are there. So any damage at that phase is irreparable and is lethal.
- D 31-D 71 is the critical period for organ formation. Effects of teratogen depend on the following factors: (i) Amount of the drug reaching the fetus, (ii) Gestational age at the time of exposure, (iii) Duration of exposure.
- After D 71 development of other organs continues. Diethylstilbestrol (DES) related uterine anomalies occur with exposure around 20 weeks.
- Brain continues to develop throughout pregnancy and neonatal period. Fetal alcohol syndrome occurs in late pregnancy.

900. Best time for diagnosing fetal abnormalities by USG:
September 2009

a) 6-12 weeks of pregnancy

b) 13-19 weeks of pregnancy

c) 20-26 weeks of pregnancy

d) 27-32 weeks of pregnancy

Correct Answer - B
Ans. B: 13-19 weeks of pregnancy

901. The characteristics of caput succedaneum include all of the following except :

a) Crosses midline

b) Crosses the suture line

c) It does not disappear within 2-3 days

d) It is a diffuse edematous swelling of the soft tissues of the scalp

Correct Answer - C
It does not disappear within 2-3 days

902. Which of the following is false about elongation of cervix ?

- a) The supravaginal portion is stretched and elongated
- b) Usually associated with second and third degree prolapse of uterus
- c) It is uncommon for the gland to elongate beyond 5cms
- d) It is invariably associated with retroverted uterus

Correct Answer - C

Ans. is 'c' i.e., It is uncommon for the gland to elongate beyond 5cms

Elongation of the Cervix

- In this condition the supravaginal portion of the cervix is well supported by Mackenrodt ligaments but the vaginal portion of the cervix prolapses with the vagina so the supravaginal portion gets stretched and elongated.
- This usually happens with second degree and third degree prolapse of the uterus.
- With procidentia, the entire uterus slides with the vagina and hence the cervix retains its normal length.
- It is not uncommon for the cervix to elongate to as much as 10 cm in length.
- The cervix may show hypertrophy and congestion.
- The uterus is invariably retroverted.

903. Which enzyme deficiency is most commonly responsible for presence of long clitoris and fused vagina?

a) 21 hydroxylase

b) 11 hydroxylase

c) 3 beta hydroxy steroid dehydrogenase

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., 21 hydroxylase

- Features of long clitoris and fused vagina are suggestive of adrenogenital syndrome/ congenital adrenal hyperplasia (CAH). 21 hydroxylase deficiency is responsible for 95% cases of CAH.

904. Which of the following is true regarding breast feeding in HIV positive mother?

a) Breast feeding has no effect on mother to child transmission of infection

b) Breast feeding doubles the risk of mother to child transmission of infection

c) Breast feeding triples the risk of mother to child transmission of infection

d) Breast feeding quadruples the risk of mother to child transmission of infection

Correct Answer - B

Ans. is 'b' i.e., Breast feeding doubles the risk of mother to child transmission of infection

- Breastfeeding doubles the risk of maternal to child transmission (14% to 28%) of infection.

905. Causes of erythroderma-

a) Pityriasis alba

b) Pityriasis versicolor

c) Psoriasis

d) a and b

Correct Answer - C
C i.e. Psoriasis

906. Substance used a bleaching agent in melasma is ?

a) Hydroquinone

b) Hydroxychloroquin

c) Hydrogen peroxide

d) Benzoyl peroxide

Correct Answer - A

Ans. is'a' i.e., Hydroquinone

(Ref : IADVL textbook of dermatology 3'd /e p. 1607)

Depigmenting agents (Bleaching agents):

- Hydroquinone 2-5%
- Ascorbic acid
- Retinoids
- Liquorice extract
- Azelaic acid (10-20%)
- Kozic acid (1-4%)
- Arbutin
- Nicotinamide

907. Minor clinical feature in diagnosis of atopic dermatitis A/E

a) Dry skin

b) Pruritus

c) Morgagnian fold

d) Pitriasis alba

Correct Answer - B
B i.e. Pruritis

908. Treatment of psoriasis-

a) PUVA

b) Methotrexate

c) Systemic steroids

d) a and b

Correct Answer - D
A i.e. PUVA; B i.e. Mtx

909. Patient with gluten-sensitive enteropathy has a lifelong history of periodic crops of intensely pruritic, grouped, papular or vesicular lesions on the elbows, knees, sacrum, and shoulders. Because the vesicles are intensely pruritic, the patient routinely scratches the top off them, which relieves the pruritus. Which of the following is the most likely diagnosis?

a) Bullous pemphigoid

b) Dermatitis herpetiformis

c) Herpes simplex I

d) Pemphigus vulgaris

Correct Answer - B

The condition described is **dermatitis herpetiformis**, which is strongly associated with gluten-sensitive enteropathy (celiac sprue), and often has a life-long, intermittent course. Clinically, patients have (excoriated) groups of papules and vesicles on an erythematous base.

The lesions tend to involve the extensor surfaces of the extremities and the buttocks. Microscopically, the lesions show subepidermal papillary dermal neutrophilic abscesses, with granular deposits of IgA and C3 in dermal papillary tips. Patients may respond dramatically to dapsone therapy.

Bullous pemphigoid produces large, tense blisters.

Herpes simplex I is characterized by crops of vesicles, but is not particularly associated with gluten-sensitive enteropathy.

Pemphigus vulgaris usually shows prominent oral involvement.

Ref: DeWitt C.A., Buescher L.S., Stone S.P. (2012). Chapter 153. Cutaneous Manifestations of Internal Malignant Disease: Cutaneous Paraneoplastic Syndromes. In L.A. Goldsmith, S.I. Katz, B.A. Gilchrest, A.S. Paller, D.J. Leffell, N.A. Dallas (Eds), *Fitzpatrick's Dermatology in General Medicine*, 8e.

910. Mutation in which collagen is present in epidermolysis bullosa ?

a) II

b) IV

c) V

d) VII

Correct Answer - D

Ans. is 'd' i.e., VII

Molecular pathology of EB

- Normal basement membrane is between epidermal basal layer and dermis. This basement membrane (basal lamina) is attached to basal cells hemidesmosomes with the help of keratin containing intermediate filaments and is attached to dermis (dermal papillary layer) with the help of type VII collagen containing fibrils. Any defect in this anchoring complex leads to separation of skin; the site of separation depends on the type of defect
- 1. EB simplex → Mutation in gene coding for keratin 5 & 14 (major keratin of BMZ) and separation will be epidermal.
- 2. EB junctional → Mutation in Laminin α-3 (LAM α-3), LAM [I-3, LAM 7-2 genes. As laminin is part of basement membrane the separation will be at dermo-epidermal junction (DEJ).
- 3. EB dystrophic → Mutation in collagen VII-A1 gene. As collagen VII containing fibrils join BM to dermal papilla, separation will be in the dermis.
- Any of the above defect results in defective cohesiveness which leads to vulnerability to trauma and blisters formation. As the disease is inherited, Family history may be positive.

911. DOC for dermatitis herpetiformis is:

a) Steroids

b) Dapsone

c) PUVA

d) Antihistaminic

Correct Answer - B
B i.e. Dapsone

912. Which of the following is done for the quick diagnosis of Erythrasma ?

a) Biopsy

b) KOH examination

c) Culture and sensitivity

d) Wood's lamp examination

Correct Answer - D

Ans is'd i.e. Wood's lamp examination

(Ref. IADVL text book of dermatology 3d/e p. 236).

- Erythrasma is caused by infection by Coryneform bacteria.
- Wood's lamp examination is a commonly used test to diagnose Erythrasma.
- Lesion shows coral red fluorescence due to coproporphyrin III production by the bacteria.

913. Most malignant type of pustular psoriasis is ?

a) Palmo - planter pustolosis

b) Acrodermatitis continua

c) Pustular bacterids

d) Von Zumbusch type

Correct Answer - D

Ans. is'd'i.e., Von Zumbusch type

[Ref: Neena Khanna 3d/e p. 44]

- Von Zumbusch type of pustular psoriasis is the suddenly developing most serious type, characterized by severe systemic upset, swinging pyrexia, arthralgia and high polymorphonuclear lymphocytes.
- The skin first becomes erythrodermic and then develops sheets of sterile pustules over trunk and limbs.
- Pustules become confluent to form "lakes of pus".

914. A 36 year old male with history of psoriasis was started on systemic steroids. After stopping treatment, the patient developed pustules in a generalized distribution. Gram stain from pustule showed only pus cells. The cause is most likely to be:

a) Acute generalized exanthematous pustulosis

b) Generalized pustular psoriasis

c) Bacterial infections

d) Septicemia

Correct Answer - B

Generalized Pustular psoriasis is a rare and serious form of Psoriasis characterized by the sudden eruption of a large number of sterile pustules associated with fever.

It is usually precipitated by infections, sudden withdrawal of steroids and pregnancy.

The drug of choice is Methotrexate except in pregnancy where it is systemic steroids.

Generalized pustular psoriasis in pregnancy is called *Impetigo herpetiformis*.

Ref: Textbook of Dermatology By Rook, Volume 1, Page 19.34

915. The commonest pre-malignant condition of oral cancer is -

a) Leukoplakia

b) Aphthous ulcer

c) Lichen planus

d) Erythro-leukoplakia

Correct Answer - A

Ans. is 'a' i.e., Leukoplakia

Leukoplakia is the most common (-85%) of the premalignant lesions of the oral cavity.

916. Herald patch is caused by ?

a) Pityriasis rosacea

b) Psoriasis

c) Lichen planus

d) P.versicolor

Correct Answer - A

Ans. is 'a' i.e., Pityriasis rosacea

Pityriasis rosacea

- P. rosea is a common scaly disorder, occurring usually in children and young adults (10-35 years).
- Characterized by round/oval pink brown patches with a superficial, centrifugal scale, distributed over trunk in a Christmas tree pattern.
- The disease is thought to be viral disease, is self limiting, and subsides in 6-12 weeks.
- The exact etiology is not known, but it is considered to be a viral disease; Human Herpes virus 6 (HHV 6) and Human Herpes virus 7 (HHV 7) may play a role.

Clinical manifestations of P. rosea

- The disease starts with an upper respiratory prodrome or a mild flu.
- After 1-2 weeks, Annular erythematous plaque appears on trunk that is referred to as mother patch or herald patch. o Over the next 1-2 weeks, fresh patch appear all over the trunk, in a Christmas tree configuration or Fir tree

Configuration.

- The lesions are pinkish in white skin, hence the name rosea.
- However, on the dark Indian skin the lesions are skin coloured or brown.
- The most characteristic clue for the diagnosis is the presence of a

fine scale at the edge of the lesion referred to as centrifugal scale or collarette scales or cigarette paper scales.

- Lesions subside with hyperpigmentation.
- Trunk is involved predominantly, Sometimes (in 20% of patients) lesions occur predominantly on extremities and neck (inverse pattern).

917. Pseudo koebner's phenomenon is/are seen in:

a) Warts

b) Molluscum contagiosum

c) Lichen planus

d) a and b

Correct Answer - D

A i.e. Warts; B i.e. Molluscum contagiosum

- Koebner's (isomorphic) phenomenon is seen in *psoriasis* (characteristic), *lichen planus*, *vittiligo*, DLE & Kaposi sarcoma.
- Pseudo Koebner's (pseudo-isomorphic) phenomenon is due to auto-inoculation and is seen in *infections like plane warts, molluscum contagiosum* and eczematous lesions.

918. Target or Iris lesion seen in

a) Urticaria

b) Erythema mutiformae

c) Scabies

d) Lichen Planus

Correct Answer - B
B. i.e. Erythema multiformae

**919. Which of the following is true about erythema multiforme:
*September 2011***

- a) Triggered mainly by HIV infection
- b) Target lesions are seen
- c) Full blown prodromal symptoms
- d) Involvement of mucosa more common

Correct Answer - B

Ans. B: Target lesions are seen

Typical lesion of erythema multiforme is a target lesion, which consists of 3 concentric components 1) central dusky erythema, sometimes surmounted with a vesicle/ bulla, 2) pale edematous ring and 3) erythematous halo

"Erythema" in dermatology:

- Erythema induratum: Bazins disease
- Erythema nodosum: Multisystemic disorders e.g. sarcoidosis
- Erythema chronicum migrans: Lymes disease

**920. Erythroderma is related with all of the following except:
September 2008**

a) Lepromatous leprosy

b) Psoriasis

c) Air-borne dermatitis

d) Sulfonamides

Correct Answer - A

Ans. A: Lepromatous Leprosy

Erythroderma can arise from a variety of causes, most often as an extension of a pre-existing skin Erythroderma/exfoliative dermatitis may also be due to an adverse drug reaction.

However, in as many as 30% of all cases of erythroderma, no underlying cause can be found. erythroderma.

The most common pre-existing dermatoses to result in erythroderma include:

Dermatitis especially atopic dermatitis, contact dermatitis (allergic or irritant) and eczema) and in babies, seborrhoeic dermatitis

Psoriasis

Pityriasis rubra pilaris

Blistering diseases including pemphigus and bullous pemphigoid

Cutaneous T-cell lymphoma (Sezary syndrome)

Erythroderma may also be a symptom or sign of a systemic disease.

These may include:

- Internal malignancies e.g. carcinoma of rectum, lung, fallopian tubes, colon
- Haematological malignancies e.g. lymphoma, leukaemia

- Graft vs Host disease
- HIV infection
- Drugs such as:
 - Sulfonamides Penicillin
 - Barbiturates
 - Carbamazepine Isoniazid
 - Gold
 - Phenylbutazone

921. A 5 year old male child has multiple hyperpigmented macules over the trunk. On rubbing the lesion with the rounded end of a pen, he developed urticarial wheal, confined to the border of the lesion. The most likely diagnosis is:

a) Lichen planus

b) Fixed drug eruption

c) Urticaria pigmentosa

d) Urticarial vasculitis

Correct Answer - C

Patient is showing features of urticaria pigmentosa.

It is a condition caused by an increase in the number of dermal mast cells.

Children presents with brownish dermal papules and plaques distributed over the body.

On rubbing, these plaques become urticated (Darier's sign).

Symptoms are due to the release of histamines.

Ref: Color Handbook of Dermatology By R. Rycrof, Pages 33, 34; Field guide to clinical dermatology By David H. Frankel, 2nd Edition, Page 59

3. A Practical Guide to Pediatric Emergency Medicine: Caring for Children By N. Ewen Amieva-Wang, Page 135

922. What is the best time to give oral psoralen with UVA?

a) Half n hour before UVA

b) 1 hour before UVA

c) Half n hour after UVA

d) 1 hour after UVA

Correct Answer - B

Ans is 'b' i.e. 1 hour before UVA

[Ref: IADVL textbook of dermatology 3'd/e p. 1719]

- Psoralens (mostly 8- MOP) is given orally 1-3 hours (average 2 hours) before exposure to UVA.

923. Multinucleate giant cells are seen in Tzank smear in ?

a) Herpesgenitalis

b) Bullous pemphigoid

c) Toxic epidermal necolysis

d) Pemphigus

Correct Answer - A
Ans. is 'a' i.e., Herpes genitalis

924. Perifascicular atrophy of muscle fibres is seen in?

a) Steroid myopathy

b) Dermatomyositis

c) Inclusion body myositis

d) Nemaline myopathy

Correct Answer - B

Ans. is 'b' i.e., Dermatomyositis

- Dermatomyositis is a connective-tissue disease related to polymyositis that is characterized by inflammation of the muscles and the skin.
- It is a systemic disorder that may also affect the *joints, the esophagus, the lungs, and, less commonly, the heart.*
- On the muscle biopsy, there are two classic microscopic findings of dermatomyositis. They are : *mixed B- & T-cell perivascular inflammatory infiltrate and perifascicular muscle fiber atrophy.*
- It is associated with autoantibodies, especially *anti-Jo1 antibody.*

925. In a case of primary melanoma of 1-2mm depth, margins of excision of surrounding normal skin should be -

a) 0.5-1 cm

b) 1 cm

c) 1-2 cm

d) > 2cm

Correct Answer - C

Ans. is 'c' i.e., 1-2 cm

[Ref: Fitzpatrick Vh/e p. 1153)

926. Comedo nevus is which type of epidermal nevus ?

a) Keratinocytic

b) Verrucous

c) Inflammatory

d) Appendageal

Correct Answer - D

Ans. is 'd' i.e., Appendageal

[Ref : IADVL textbook of dermatology 3'd/e p. 175)

Types of epidermal nevus

- .. Keratinocytic r Verrucous epidermal nevus, linear epidermal nevus.
- ?. Organoid (appendageal); Nevus sebaceous, nevus comedonicus, eccrine nevi, apocrine nevi, Becket's nevus.

927. True about visceral leishmaniasis:

a) Neutropenia

b) Eosinophilia

c) Hyper gamma globulinemia

d) Skin hyperpigmentation

Correct Answer - A:D:E

Ans. (a, d, e) Neutropenia, Skin hyperpigmentation, Lymphadenopathy

Manifestations of visceral leishmaniasis

- Moderate to high grade fever with chills & rigor
- Lymphadenopathy: Lymphadenopathy is common in most endemic regions of the world except the Indian subcontinent
- Organomegaly: Splenomegaly occurs by 2nd week of illness followed by hepatomegally (moderate)
- Hyperpigmentation: Patient loose weights feel weak and the skin gradually develops dark discoloration due to hyper-pigmentation
- Hematological: Anemia, hypoalbuminemia, thrombocytopenia, leukopenia.

928. False about sweet syndrome body sensation in eye. The most probable diagnosis is

a) May be a/w high fever

b) Neutrophilia not present

c) May be a/w hematological malignancy

d) Pseudovesication

Correct Answer - B
B i.e. Neutrophilia not present

929. Which is not a complication of PUVA therapy:

a) Premature aging of skin

b) Cataracts

c) Skin cancers

d) Exfoliative

Correct Answer - D
D. i.e. Exfoliation

930. Best treatment option for Molluscum contagiosum is ?

a) Phototherapy

b) Immunosuppressives

c) Antiviral drugs

d) Electrocautery

Correct Answer - D

Ans is 'd' i.e. Electrocautery

[Ref: Venleatram Lnle p. 275; Neena Khanna 3d/e p. 236)

- Curettage, electrocautery and cryotherapy are simple and effective methods.
- Imiquimod a recently introduced immunostimulant is helpful in patients with multiple lesions and in small children.

931. First line t/t for keloid is-

a) Intralesional injection of steroid

b) Local steroid

c) Radiotherapy

d) Wide excision

Correct Answer - A

Ans. is a' i.e. Intralesional injection of steroid

- Intralesional injection of steroid (Triamcinolone acetate) is now recommended as the first line of t/t for keloids [Ref Schwartz 9/e p226 (8/e p241)]
- Intralesional injection of Triamcinolone is also the t/t of choice for intractable hypertrophic scars. Success is enhanced when it is combined with surgical excision [Ref CSDTI 3/e p1105 (11/e, p1243)]
- Other modalities of t/t used for keloids are:
 - a) Surgery**
 - surgical excision alone leads to a high recurrence rate.
 - there are fewer recurrences when surgical excision is combined with other modalities such as intralesional corticosteroid injection, topical application of silicone sheets or the use of radiation or pressure.
 - surgery is recommended for debulking large lesions.
 - b) Radiation therapy**
 - it may produce unpredictable results and has obvious potential side effects including neoplastic degeneration; and has high recurrence rate when used alone.
- .. Silicone sheet application
- ?. Pressure application
- }. Topical retinoids

932. Drugs/treatment used in scabies are

a) Crotamiton

b) Permethrin

c) Lindane

d) All

Correct Answer - D
D i.e. All

933. Tracheostomy reduces dead space by ?

a) By-passing upper airway

b) Increasing V/Q ratio

c) Reducing airflow resistance

d) By all of the above mechanisms

Correct Answer - A

Ans. is'a'i.e., By-passing upper airway

(Ref: Morgan 4tu/e p. 553)

Important effects of tracheostomy on respiratory physiology

1. Tracheostomy decreases dead space as upper airways and nasal cavity are bypassed.
2. Tracheostomy decreases ventilation/perfusion (V/Q) ratio.
3. Tracheostomy reduces the airflow resistance.

934. Which of the following is the most common method used to know depth of anaesthesia?

a) BIS

b) Oesophageal contractility

c) Depressed responses

d) Hypotension

Correct Answer - A

Ans:A. BIS

Bispectral index:

- 1st scientifically validated & commercially available monitor to check depth of anaesthesia.
 - Utilizes many parameters (EEG signals, eye blinks) to calculate depth score.
- Adequate depth:
- Score of 45-60.
- Fully awake state:
- Score of 100
- Completely silent brain: 0.

935. VAT in mechanical ventilation stands for ?

- a) Ventilator associated trauma
- b) Ventilator associated treatment
- c) Ventilator associated tracheobronchitis
- d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Ventilator associated tracheobronchitis

(Ref: Nosocomial and Ventilator-Associated Pneumonia p.14)

- VAT (Ventilator associated tracheobronchitis) & VAP (Ventilator associated pneumonia) are nosocomial lower respiratory tract infections common in patients who are on ventilator for long periods of time.

936. Best anesthesia for low forceps delivery ?

a) General anesthesia

b) Epidural block

c) Saddle block

d) Caudal block

Correct Answer - C

Ans. is'c'i.e., Saddle block

(Ref: Chestnut's Obstetric Anesthesia p. 480)

- 'A saddle block performed with the patient in sitting position with hyperbaric local anesthetic solution provides excellent anesthesia for outlet/low forceps delivery.'

937. Drug contraindicated for Bier's block-

a) Lidocaine

b) Prilocaine

c) Dibucaine

d) Bupivacaine

Correct Answer - D

Ans. is 'd' i.e., Bupivacaine

- Intravenous regional anaesthesia (IVRA) is used most often for surgery of the forearm and hand, but can also be used for distal leg and foot.
- Lidocaine without adrenaline is the DOC for this technique.
- A few clinician prefers prilocaine over lidocaine because of its higher therapeutic index - least toxic LA.
- Torniquet cuff deflation, premature release or failure of torniquet can cause release of LA into circulation and toxicity may occur --> So, cardiotoxic LAs like bupivacaine and etidocaine are contraindicated for Bier's block.

938. In epidural anaesthesia drug is injected ?

a) Outside the dura

b) Inside the duramater

c) Inside arachnoidmater

d) Inside piamater

Correct Answer - A
Ans. is 'a' i.e., Outside the dura

939. Shortest acting non depolarizing muscle relaxant is?

a) Mivacurium

b) Doxacuronium

c) Pipecurium

d) Vecuronium

Correct Answer - A

Ans. is 'a' i.e., Mivacurium

- Suxamethonium (succinylcholine) is the shortest acting skeletal muscle relaxant. o Mivacurium is the shortest acting nondepolarizing skeletal muscle relaxant.

940. Muscle relaxant not to be used in liver failure:

a) d- Tubocurare

b) Pancuronium

c) Suxamethonium

d) Decamethonium

Correct Answer - B

Among muscle relaxants metabolism in liver occurs with pancuronium (10-20%), vecuronium (20%) and biliary excretion occurs with rocuronium (40%). vecuronium (30-40%) and pancuronium (10%). So these agents should be avoided in hepatic diseases. Suxamethonium effect is prolonged in only in severe liver failure due to decreased pseudocholinesterase, so is usually acceptable in mild to moderate cases.

**941. Least blood gas partition coefficient
anesthetic agent:**

a) Desflurane

b) Nitrous oxide

c) Halothane

d) Ether

Correct Answer - A
A i.e. Desflurane

942. IV administration of which anesthetic drug is most painful among the following?

a) Methohexital

b) Ketamine

c) Propofol

d) Etomidate

Correct Answer - C

Ans: c. Propofol

943. Coronary steal phenomenon is caused by?

a) Dipyridamol

b) Verapamil

c) Diltiazem

d) Nicorandil

Correct Answer - A

Ans. is 'a' i.e., Dipyridamol

- Dipyridamol is a powerful coronary dilator; increases total coronary flow by preventing uptake and degradation of adenosine.
- It dilates resistance vessels in nonischemic zone as well
Diverts the already reduced blood flow away from ischemic zone -
Coronary steal phenomenon.
- It has no effect on larger conducting vessels (contrast nitrates which dilate larger conducting vessels and cause redistribution of blood towards ischemic zone).

944. Thumb printing is characteristic of -

a) Crohn's disease

b) Ischemic colitis

c) LGV

d) Ulcerative colitis

Correct Answer - B

Ans. is 'b' i.e., Ischemic colitis

945. Active pulmonary TB can be diagnosed on CT-scan by following finding ?

a) Tree in bud appearance

b) Honey comb appearance

c) Ground glass appearance

d) Signet ring sign

Correct Answer - A

Ans. is 'a' i.e., Tree in bud appearance

(Ref Chapman 4n/e p.142,143; Fundamentals of radiology)

- Tree-in-bud sign or pattern describes the CT appearance of multiple areas of centrilobular nodules with a linear branching pattern.
- This is a characteristic sign of active pulmonary TB.
- Other important sign of pulmonary TB on CT is lymph nodes showing peripheral rim enhancement because of necrosis.

946. All are Neurocysticercosis findings on CT scan except ?

a) Parenchymal calcification

b) Low density non enhancing lesion

c) Diffuse cerebral edema

d) High density lesions

Correct Answer - D

Ans. is 'd' i.e., High density lesion

[Ry' Walsh and Hoyt's Clinical Neuro-ophthalmology p.2872]

important findings of Neurocysticercosis on CT

- Parenchymal calcification at junction of grey and white matter
- Low density round non enhancing lesions
- Hypodense or isodense round masses with surrounding edema

947. Bird beak appearance of distal oesophagus is seen in:

a) Achalasia cardia

b) Reflux oesophagitis

c) Carcinoma oesophagus

d) Hiatus hernia

Correct Answer - A
Ans. Achalasia cardia

948. Early arterial phase enhancement CECT scan of liver indicates towards -

a) Hydatid cyst

b) HCC

c) Hepatic abscess

d) Simple hepatic cyst

Correct Answer - B

Ans. is 'b' i.e., HCC

[Rd Kumar and Chrk's Clinical Medicine p. 347)

- In HCC, the classic finding on CT imaging is hyper vascularity/enhancement in the arterial phase with washout in the portal (venous) and delayed phases.

949. Best investigation to diagnose a hydatid cyst in liver is ?

a) Ultrasound

b) CT-scan

c) MRI

d) MRCP

Correct Answer - B

Ans. is 'b' i.e., CT-scan

- For hydatid cyst
- 1st line investigation - Ultrasound
- Investigation of choice - CT-scan

950. Normal hilar shadow in X-ray chest is produced by all except

a) Pulmonary artery

b) Bronchus

c) Lower lobe veins

d) Upper lobe veins

Correct Answer - C

C i.e. Lower lobe veins

The *lower lobe pulmonary veins* do not cross the hila in their course to the left atrium and therefore do not contribute to the hilar shadow.

- The hila is formed by?
 1. Pulmonary arteries & their main branches (most imp.)Q
 2. Upper lobe pulmonary veins Q
 3. Major bronchi (contribute little)
 4. Lymph nodes (usually not seen)

951. True about Ebstein anomaly is?

a) Right ventricular dilatation

b) Right atrial dilatation

c) Left ventricular dilatation

d) Left atrial dilatation

Correct Answer - B

Ans. is 'b' i.e., Right atrial dilatation

Ebstein's anomaly

- Ebstein anomaly consists of downward displacement of an abnormal tricuspid valve into the right ventricle. o Normally tricuspid valve has three leaflets Anterior, posterior and septal.
 - Fixed end of these leaflets is attached to valve ring in tricuspid area.
 - In Ebstein anomaly, anterior leaflet is attached to valve ring as normal, but the other two leaflets (posterior and septal) are displaced downward and are attached to the wall of left ventricle.
 - The portion of right ventricle above the tricuspid valve becomes a part of right atrium —÷ *atrialized right ventricle*. Hemodynamics
 - The tricuspid valve anomaly results in obstruction of blood flow as well as regurgitation of blood from the right ventricle into the right atrium → Dilatation and hypertrophy of right atrium due to volume overload.
 - Blood flows right atrium to left atrium through patent foramen ovale or ASD → Right to left shunt and cyanosis. Clinical manifestations
1. Cyanosis → Fatigue
 2. Dysnea on exertion → Paroxysmal attacks of tachycardia Signs
 3. Cyanosis and clubbing → S₁, wider split but variable
 4. Dominant V wave on JVP. → Right ventricular S₃
 5. Systolic thrill at the left sternal border → Right atrial S₄.

S_i normal

- Systolic murmur due to regurgitation at tricuspid valve.
- Delayed diastolic murmur due to obstruction at tricuspid valve like tricuspid stenosis.
- Both systolic and diastolic murmur produced at the tricuspid valve have scratchy character like pericardial friction rub.

952. Investigation of choice for evaluating a renal mass is ?

a) Plain X-ray

b) CT scan

c) IVP

d) Renal scintigraphy

Correct Answer - B

Ans. is'b'i.e., CT scan

(Ref: Grainger &/e p.881)

- "Computed Tomography is still the investigation of for evaluating and characterizing solid renal masse

953. Radioactive isotope of which of the following is used in bone scans:
September 2009, 2010

a) Phosphorous

b) Iodine

c) Technetium

d) Gallium

Correct Answer - C

Ans. C: Technetium

Bone scan/ nuclear medicine technique:

The patient is injected with a small amount of radioactive material such as 600 MBq of technetium-99m-MDP and then scanned with a gamma camera, a device sensitive to the radiation emitted by the injected material.

Two-dimensional projections of scintigraphy may be enough, but in order to view small lesions (less than 1 cm) especially in the spine, single photon emission computed tomography (SPECT) imaging technique may be required. About half of the radioactive material is localized by the bones. The more active the bone turnover, the more radioactive material will be seen.

Not all tumors are easily seen on the bone scan.

Some lesions, especially lytic (destructive) ones, require positron emission tomography (PET) for visualization.

954. "Head at risk" sign is seen in ?

a) Perthes disease

b) Ewing's sarcoma

c) Osteomyelitis

d) Paget's disease

Correct Answer - A

Ans. is'a'i.e., Perthes disease

(Ref: Pediatric Orthopedic Deformities p.326)

- "Head at risk sign is a radiological prognostic sign for Perthes disease (also k/a Legg-Calves- Perthes disease or Coxa Plana
- or Idiopathic avascular necrosis of femoral head).

955. The principle used in radiotherapy is:

a) Cytoplasmic coagulation

b) Ionising the molecules

c) DNA damage

d) Low dose causes tissue necrosis

Correct Answer - C
Ans. DNA damage

956. Not a radiosensitizing drug ?

a) 5-Fu

b) BUDR

c) Cyclophosphamide

d) Hydroxyrea

Correct Answer - C

Ans. is'c'i.e., Cyclophosphamide

- IRef. Cancer nursing: Principles & practice p. 256
- Cisplatin and 5-FU - Most common radiosensitive drugs.

957. Mini mental status is :

a) Method to investigate common psychiatric problem

b) 30 point programme to evaluate cognitive function

c) To evaluate schizophrenia

d) Instrument to measure delirium

Correct Answer - B

B i.e. 30 point programme to evaluate cognitive function

958. Steroid can be used in the treatment of -

a) ADHD

b) Autism

c) OCD

d) All of the above

Correct Answer - B

Ans. is'b'i.e., Autism

- The exact mechanism of steroid response in epilepsy and ASD (autistic spectrum disorders) is still not fully understood.
- There is belief that anti-inflammatory effects are mechanism of steroid action in these conditions! - Autism and its Medical Management
- Also autism has known to be associated with lymphoproliferative disorders k/a ALPS (Autism secondary to lymphoproliferative syndrome).
- Steroids have a role to play in this disorder because of anti-inflammatory property.

959. Most common hallucination in delirium are ?

a) Auditory

b) Visual

c) Olfactory

d) Tactile

Correct Answer - B

Ans. is 'b' i.e., Visual

(Ref: Niraj Ahuja &/e p. 2Q, Essential of clinical psychiatry 4h/e p. 319)

- Visual hallucinations are most common in delirium.
- Auditory hallucinations are common in schizophrenia.

960. Depression is associated with which of the following neurological condition ?

a) Cerebro-vascular disorder

b) Multiple sclerosis

c) Epilepsy

d) None of the above

Correct Answer - A

Ans. is 'a' i.e. Cerebro-vascular disorder

[Ref: Oxford Textbook of Stroke and Cerebrovascular Disease p. 2461]

important causes of depression

- General medical/neurological/endocrine disorders: - Cerebrovascular disorders, CNS infection, Parkinson's disease, Dementia (Alzheimer's disease), Hyperthyroidism, Hypothyroidism, Cushing's disease or Addison's disease, Hypopituitarism, Acromegaly, Hyperparathyroidism, Hypoparathyroidism, Postpartum period, Menses related disorders, Cancer, Tuberculosis

961. A 8 year old child after a tonsillectomy sees a bear in her room . She screams in fright. A nurse who rushes in switches on the light, finds a rug wrapped on a armchair. She pacifies the child what the child experienced was a:

a) Delusion

b) Illusion

c) Hallucination

d) None of the above

Correct Answer - B

B i.e. Illusion

1. Illusion is sensory stimulation given a *false interpretation i.e it is a false perception (misinterpretation /bizarre interpretation/misperception) of external stimuli*. Eg. misinterpreting cord for snake or rug for bear.
2. Most likely to occur *when clarity of sensory stimulation is reduced (e.g at night or eyes bandaged)*, when attention is not focused or mind is *under the sway of an emotionally determined ideational set (eg. anxious, frightened, vigilance for intruder)*, or when the *level of consciousness is reduced (as in delirium)*, or all working together. For example a frightened anxious elderly in night (or with both eyes bandaged d/ t surgery) who is vigilant for intruders is more likely to misperceive fluttering curtain as intruder or bush as a man.
3. Illusions may also occur in hysteria, depression, schizophrenia or an emotions of great force (eg abandonment or erotic yearning).

- i. Illusions may be *visual*, *auditory* (eg slamming door misinterpreted as a report of a pistol), *tactile* (eg skin sensation thought to be caused by vermin), *gustatory* (eg. position detected in taste of food), *kinesthetic* (eg flying) or *visceral* (eg. abdominal pain thought to be caused by ground glass).

962. All are mechanism of defence except:

a) Repression

b) Transference

c) Projection

d) Anticipation

Correct Answer - B
B i.e. Transference

963. Which of the following is the most effective treatment modality for Post-Traumatic Stress Disorder (PTSD)?

a) Cognitive behavioral therapy

b) Eye movement desensitization and reprocessing

c) Hypnosis

d) Rational and emotive therapy

Correct Answer - A

Ans. a. Cognitive behavioral therapy

Post Traumatic Stress Disorder (PTSD)

- It is an intense, prolonged and sometimes protracted or delayed response to exceptionally intense stressful eventse.

Etiology:

- Events involving actual or threatened serious injury or death of the person or other
- Natural disasters, man made calamities and serious physical assault or rape

Predisposing Factors for PTSD

Female gender^Q Previous history of neuroticism trauma

Lower intelligence and mood and anxiety disorder^Q
lack of support^Q disorder^Q

Neurobiological Factors:

- Monoamine neurotransmitters and HPA axis mediate defensive response to stressful events
- Small hippocampus leads to dysfunctional and inadequate memory

processing while increased noradrenergic activity of amygdala, increases arousal and facilitates automatic recall and encoding of traumatic events.

Clinical Presentation:

- May begin very soon after stressors or after an interval of days (usually), months (occasionally) or rarely more than 6 months.
- Symptoms must be present for at least 1 month, until then it is called acute stress disorder.
- Must leads to significant distress or impaired social functioning.
- Flash backs, nightmares and intrusive images collectively known, as painful re-experiencing symptoms along with avoidance, emotional numbing and fairly constant hyper arousal are most characteristic feature.

Treatment:

- Structured psychotherapy is more effective than drug treatments.
- Counseling is TOC for short term PTSDQ
- Cognitive behaviour therapy is TOC for severe long standing PTSDQ
- Drug treatment: Antidepressants and benzodiazepines (in low doses for short periods) are useful in treatment, if anxiety and/or depression are important components of the clinical picture.

Rational and
Emotive
Therapy

It is a specialized type of CBT, proved to be useful for PTSD.

Eye
movement
desensitization
and
reprocessing
(EMDR)

Relatively new treatment, found to reduce the symptoms of PTSD.

EMDR involves making side-to-side eye movements, usually by following the movement of therapist's finger, while recalling the traumatic

964. Oddities of speech, mannerism and clothing with magical thinking is seen in which type of personality disorder

a) Schizoid

b) Paranoid

c) Schizotype

d) Border line

Correct Answer - C
C i.e. Schizotype

965. A 24 year girl named Heena is often flamboyantly dressed and goes out on dates frequently. Although she changed boyfriend almost monthly, but she used to plan her marriage and future with each of them with equal enthusiasm and optimism.

She would often make stories to seek attention. She would feel uncomfortable at big parties leave them midway.

Heena made promises to other people that were impossible to keep but seemed to be aimed at winning their approval; when she broke the promise, she usually made up a story designed to elicit sympathy and compassion. Diagnosis is ?

a) Borderline personality disorder

b) Histrionic personality disorder

c) Dependent personality disorder

d) Antisocial personality disorder

Correct Answer - B

Ans. is 'b' i.e. Histrionic personality disorder

- Points indicating towards diagnosis of Histrionic personality disorder are
- She is often flamboyantly dressed and makes stories - to impress others and seek attention.
- She changes boyfriend almost every month but still remains enthusiastic means about each of them indicates that- she is emotionally labile.
- Leaves big parties midway - she is not comfortable where she is not the centre of attention. Makes false promises to win approval.

966. What is produced by the supersensitivity of Dopamine receptors ?

a) Dyskinesia

b) Hyperphagia

c) Hyperpathia

d) Hypomania

Correct Answer - A

Ans. is 'a' i.e., Dyskinesia

(Ref: Pathophysiology, pharmacology and biochemistry of dyskinesia p. 195)

- Increased neostriatal dopamine receptor density and dopaminergic supersensitivity in the neuroendocrine system are associated with the development of tardive dyskinesia.

967. Following are the major symptoms of obsessive compulsive disorders ?

a) Contamination

b) Pathological doubts

c) Intrusive thoughts

d) All the above

Correct Answer - D

Ans. is'd'i.e., All the above

[RI Kaplan & Saddock's |tr/e p. 605)

OCD has four major symptom patterns :-

Contamination : -

- Contamination is the most common pattern of an obsession followed by washing (washer)

Pathological doubts : -

- Doubts is the second most common pattern of an obsession, followed by a compulsive checking (checkers).

Intrusive thoughts (Pure obsessions) : -

- In this third most common pattern, there are intrusive obsessional thoughts without a compulsion.
- Such obsessions are usually r4re titious thoughts of a sexual or aggressive act that is reprehensible to the patient.

Symmetry: -

- This is the fourth most common pattern in which there is an obsession for symmetry or precision, which can lead to compulsion of slowness.
- Patients can literally take hours to shave their faces or to eat a meal.

968. Amotivational syndrome is seen with:
Maharashtra 10; NEET 13

a) Heroin

b) Cannabis

c) Cocaine

d) Clonidine

Correct Answer - B
Ans. Cannabis

969. Fear of strangers -

a) Algophobia

b) Xenophobia

c) Mysophobia

d) Thanatophobia

Correct Answer - B

Ans. is'b'i.e., Xenophobia

- Fear of strangers is xenophobia

970. Delirium is distinguished from dementia by the presence of:

a) Impaired judgment

b) Impaired memory

c) Clouding of consciousness

d) Thought disorder

Correct Answer - C

The hallmark of delirium is fluctuation in level of consciousness.

Periods of lucency may be interspersed with periods of marked unresponsiveness. Another distinguishing feature is that the onset of delirium usually occurs within hours or days, whereas the onset of dementia may be insidious throughout a period of weeks to months.

Ref: Johnston B., Yaffe K. (2008). Chapter 27. Dementia & Delirium. In M.D. Feldman, J.F. Christensen (Eds), *Behavioral Medicine: A Guide for Clinical Practice*, 3e.

971. A 30 year old lady do sudden onset breathlessness, anxiety, palpitation & feeling of impending doom. Physical examination is normal. What is the diagnosis

a) Panic attack

b) Anxiety disorder

c) Conversion disorder

d) Acute psychosis

Correct Answer - A

Panic attack [Ref Harrison 17/e p. 2710; Niraj Ahuja 6/e p. 96; Kaplan Saddock 10/e p. 590]

DSM-IV Criteria for a Panic Attack

- *A panic attack is a period of intense fear or discomfort, developing abruptly and peaking within 10 minutes, and requiring at least four of the following :-*
- *Chest pain or discomfort*
- *Chills or hot .fushes*
- *Derealization (feeling of unreality) or depersonalization (being detached from oneself)*
- *Fear of losing control*
- *Feeling of choking*
- *Nausea or abdominal distress*
- *Palpitations or tachycardia°*
- *Paresthesias*
- *Sensations of shortness of breath° or smothering*

- Sense of impending doom°.
- Sweating
- Trembling or shaking

972. The neurotransmitter that is associated with suicidal tendencies is:

a) Serotonin

b) GABA

c) Nor-epinephrine

d) Acetylcholine

Correct Answer - A
A i.e. Serotonin

973. A Chronic alcoholic blames the family environment as a cause of his alcoholism. This is phenomenon of

a) Projection

b) Denial

c) Rationalization

d) Sublimation

Correct Answer - C
C i.e. Rationalization

974. Sexual perversion in which one has desire to see other person/wife having sex with others ?

a) Sadism

b) Exhibitionism

c) Voyeurism

d) Fetishism

Correct Answer - C

Ans is 'c' i.e. Voyeurism

[|Ref Niraj Ahuja @ /e p. 133, 134]

- Watching sexual activity of other people or the body parts of members of opposite sex is k/a Voyeurism

975. Female patient with loss of interest in sex is known as:
September 2006

a) Vaginismus

b) Impotency

c) Sterility

d) Frigidity

Correct Answer - D

Ans. D: Frigidity

Vaginismus is spasmodic contraction of the vagina due to hyperaesthesia

Frigidity is the inability to initiate or maintain the sexual arousal pattern in the female.

Impotency is the inability of a person to perform sexual intercourse

Sterility is the inability to produce children

976. A 70 year old patient presented with the following skin lesions. Immunomicroscopy of the lesions showed IgG at the basement membrane. What is the most possible diagnosis?



a) Bullous Pemphigoid

b) Pemphigus Vulgaris

c) Dermatitis Herpetiformis

d) Epidermolysis Bullosa

Correct Answer - A

Ans:A.)Bullous Pemphigoid.

BULLOUS PEMPHIGOID

Bullous pemphigoid is a chronic, inflammatory, subepidermal, blistering disease.

Distinguishing Features of three main Bullous Disease:

	Age	Site of blisters	General health	Blisters in mouth	Nature of blisters	Circulating antibodies	Fixed antibodies	Treatment
Pemphigus	Middle age	Trunk, flexures and scalp	Poor	Common	Superficial and flaccid	IgG to intercellular adhesion proteins	IgG in intercellular space	Steroids Immunosuppressives
Bullous pemphigoid	Old	Often flexural	Good	Rare	Tense and blood-filled	IgG to basement membrane region	IgG at basement membrane	Steroids Immunosuppressives
Dermatitis herpetiformis	Primarily adults	Elbows, knees, upper back, buttocks	Itchy	Rare	Small, excoriated and grouped	IgG to endomysium and transglutaminase	IgA granular deposits in papillary dermis	Gluten-free diet Dapsone Sulfapyridine

977. The given image shows a patient suffering from Psoriasis. This type of psoriasis is characterised by:



a) hyperkeratotic lesions

b) rough and scaly skin

c) Both of the above

d) None of the above

Correct Answer - A

Rupoid psoriasis is a morphological subtype of plaque psoriasis with hyperkeratotic lesions that resemble a limpet shell. Rupoid psoriasis is a cone shaped or limpet-like type of plaque psoriasis. This form of plaque psoriasis is characterized by hyperkeratotic lesions.

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