

1. Which of the following artery is located in the anatomical snuffbox?

a) Ulnar artery

b) Radial artery

c) Brachial artery

d) Interosseous artery

Correct Answer - B

Anatomic snuffbox is a term used to describe a triangular skin depression on the lateral side of the wrist. Radial artery can be palpated within the snuffbox as it winds around the lateral margin of the wrist to reach the dorsum of hand.

2. Saturday night palsy is which type of nerve injury?

a) Neuropraxia

b) Axonotemesis

c) Neurotemesis

d) Complete section

Correct Answer - A

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

Seddon's classification of nerve injuries

- Seddon identified three types of injuries
- 1. Neuropraxia**
- There is contusion of the peripheral nerve which causes reversible physiological nerve conduction block. The axis cylinder (i.e., axon with its endoneurium) is preserved. Thus, there is physiological conduction block without anatomic disruption. The injury is temporary and recovery is complete. It is seen in crutchpalsy, tourniquet palsy, and Saturday night palsy.
- 2. Axonotemesis**
- There is injury to axon but endoneurium is preserved. Spontaneous recovery is expected in some cases. This is seen in closed fractures and dislocations.
- 3. Neurotemesis**
- There is *complete anatomical section of nerve*. No recovery possible. It is seen in open wound.

3. Cubital tunnel syndrome involves:
March 2013 (c, f)

a) Radial nerve

b) Ulnar nerve

c) Median nerve

d) Axillary nerve

Correct Answer - B

Ans. B i.e. Ulnar nerve

When the ulnar nerve compression occurs at the elbow, it is called "cubital tunnel syndrome."

4. Lower end of humerus ossifies from how many secondary ossification centers

a) 1

b) 2

c) 4

d) 6

Correct Answer - C

Ans. is 'c' i.e., 4

- The humerus ossifies from one primary center and 7 secondary centers
- The upper end ossifies from 3 secondary centers head (1st year) → greater tubercle (2nd year) → lesser tubercle (5th year).
- The lower end ossifies from 4 secondary centers which form 2 epiphyses.
- The center (fourth center) for medial epicondyle appears at 4-6 years, forms a separate epiphysis and fuses with shaft during 20th year.

5. Which of the following is not carried in dorsal column of spinal cord:

March 2011

a) Proprioception

b) Vibratory sense

c) Heat sensation

d) Touch

Correct Answer - C

Ans. C: Heat sensation

Lateral spinothalamic tract carries fibers of all type of pain and temperature impulses (both hot and cold)

Spinothalamic tract

- It transmits information to the thalamus about pain, temperature, itch and crude touch.
- The pathway decussates at the level of the spinal cord, rather than in the brainstem like the posterior column-medial lemniscus pathway and corticospinal tract.

Posterior column-medial lemniscus pathway/dorsal column-medial lemniscus pathway/dorsal white column-medial lemniscus system

- It is the sensory pathway responsible for transmitting fine touch, vibration and conscious proprioceptive information from the body to the cerebral cortex as well as tactile pressure, barognosis, graphesthesia, stereognosis, recognition of texture, kinesthesia and two-point discrimination.
- The name comes from the two structures that the sensation travels up: the posterior (or dorsal) columns of the spinal cord, and the medial lemniscus in the brainstem.

- Because the posterior columns are also called dorsal columns, the pathway is often called the dorsal column-medial lemniscus system, or DCML for short. (Also called posterior column-medial lemniscus or PCML pathway).
- The PCML pathway is composed of rapidly conducting, large, myelinated fibers
- The pathway is tested with the Romberg's test.
- Lesions to the posterior column-medial lemniscus pathway below the decussation of its fibers produce loss of sensation on the same side of the body as the lesion.
Above the decussation produces loss of sensation on the opposite side of the body than the lesion

6. What is the root value of long thoracic nerve?

a) C3 4 5

b) C5 6 7

c) C7 8 T1

d) C2 3 4

Correct Answer - B

Long thoracic nerve (C5–C7): It branches off the C5–C7 roots, descends posteriorly to the roots of the plexus and the axillary artery and along the lateral surface of the serratus anterior muscle, with the lateral thoracic artery, while supplying the muscle. The long thoracic nerve is one of the few nerves found superficial to the serratus anterior muscle.

Phrenic nerve (C3–C5): Courses vertically along the anterior scalene muscle between the subclavian artery and the subclavian vein en route to innervate the diaphragm. ("C3–C5, keep the diaphragm alive" is a mnemonic that is used to remember the spinal nerve levels of the phrenic nerve.)

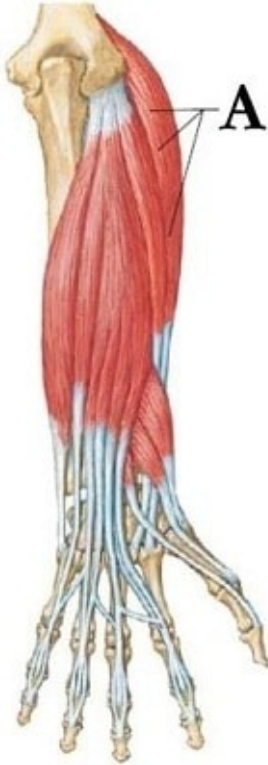
Transverse cervical nerve (C2–C3): Innervates the skin over the anterior part of the neck.

Supraclavicular nerve (C3–C4): Innervates the skin over the lower portion of the neck, upper part of the chest, and the shoulder.

Also Know:

- *Erb's palsy (brachial plexus birth injury)* is caused by a stretch injury of the brachial plexus that occurs during a difficult birth, specifically to nerve roots C5 and C6 and sometimes C7.
- *Klumpke's palsy* results from injury to the inferior trunk of the brachial plexus. The intrinsic muscles of the hand are affected and a "claw hand" may result.

7. Identify the marked muscle 'A' in the diagram:



a) Brachioradialis

b) Extensor carpi radialis longus

c) Flexor carpi radialis

d) Extensor carpi ulnaris

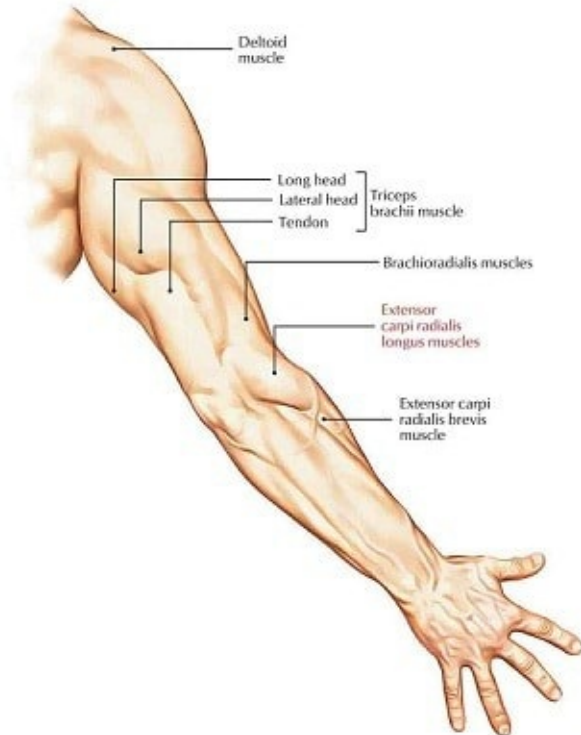
Correct Answer - B

Answer B. Extensor carpi radialis longus

- The extensor carpi radialis longus muscle emerges from the lateral epicondyle of the humerus and the distal part of the supraepicondylar rim; its tendon enters on the dorsal side of the

base of metacarpal II.

- In proximal areas, it is deep to the brachioradialis muscle.
- The wrist is expanded and abducted by the extensor carpi radialis longus muscle.



Nerve supply

- It is innervated by the radial nerve prior to the nerve splits into superficial and deep sections.

Action

- This muscle has a number of functions.
- It bends an individual's wrist in manner in which their thumb is getting moved to the inner side of forearm and radius, specifically which indicates its primary action is a radial deviation of the hand.
- It expands and supports the latter throughout grasping motions and in this manner avoids it from flexion. Furthermore, together with the other extensors of wrist

8. Cephalic vein drains into ?

a) Brachial vein

b) Subclavian vein

c) Axillary vein

d) IVC

Correct Answer - C

Ans. is `c' i.e., Axillary vein

Veins of upper limb

- Cephalic vein is the paraxial vein of upper limb (like great saphenous vein of lower limb). It begins from the lateral end of dorsal venous arch. It is accompanied by lateral cutaneous nerve of forearm and terminal part of radial nerve.
- Basilic vein is the postaxial vein of upper limb (like short saphenous vein of lower limb). It begins from the medial end of dorsal venous arch. It is accompanied by posterior branch of medial cutaneous nerve of forearm and terminal part of dorsal branch of ulnar nerve.
- Basilic vein continues as axillary vein. Cephalic vein drains into axillary vein by : (i) Draining into basilic vein through median cubital vein (greater proportion), and (ii) Directly draining into axillary vein.

9. Flexion of metacarpophalangeal joint is produced by?

a) Lumbricals

b) Dorsal interossei

c) Palmar interossei

d) All of the above

Correct Answer - D

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

Metacarpophalangeal joints

- o These are ellipsoid joints between head of metacarpals and base of proximal phalanx. Movement at MCP joints are flexion, extension, abduction and adduction.

Movement Muscles producing movements

Flexion Main muscles :- The lumbricals and the interossei.

Supportive :- Flexor digitorum profundus and superficialis.

Extension Main muscles :- Extensor digitorum.

Supportive muscles :-

Extensor indicis (for index finger), Extensor digiti minimi (for little finger)

Adduction Palmar interossei

Abduction Dorsal interossei

Important fact

- MCP joint is functionally an ellipsoid joint, but it is condylar joint structurally.

10. Root value of thoracodorsal nerve ?

a) C₅,C₆,C₇

b) C₈,T₁

c) C₆,C₇,C₈

d) T_i T₂

Correct Answer - A

Ans. is 'c' i.e., C₆C₇C₈

Branches of brachial plexus

- Branches of brachial plexus arises from different anatomical segments : -
 1. Branches of the roots
- Nerve to serratus anterior (long thoracic nerve) (C₅, C₆, C₇).
- Nerve to rhomboideus (dorsal scapular nerve) (C₅).
- 2. Branches of the trunks
- These arise only from the upper trunk which gives two branches. I.
 - Suprascapular nerve (C₅, C₆)
- Nerve to subclavius (C₅, C₆)
- 3. Branches of the cords
 1. *Branches of lateral cord*
- Lateral pectoral (C₅-C₇)
- Musculocutaneous (C₅-C₇)
- Lateral root of median (C₅-C₇)
- 2. *Branches of medial cord*
- Medial pectoral (C₈, T₁)
- Medial cutaneous nerve of arm (C₈, T₁)
- Medial cutaneous nerve of forearm (C₈, T₁).

- Ulnar (C7, C8, T₁). C7 fibres reach by a communicating branch from lateral root of median nerve.
- Medial root of median (C₈, T₁).
 - 3. Branches of posterior cord
- Upper subscapular (C₅, C6)
- Nerve to latissimus dorsi (thoracodorsal) (C6, C7, C₈)
- Lower subscapular (C₅, C6)
- Axillary (circumflex) (C₅, C6)
- Radial (C₅-C₈, T₁)

11. True about trapezius are all except ?

a) Elevates the scapula

b) Originates for C7

c) Supplied by cranial part of accessory nerve

d) Causes over-head abduction

Correct Answer - C

Ans. is 'c' i.e., Supplied by cranial part of accessory nerve

The trapezius muscle is a postural and active **movement** muscle, used to tilt and turn the head and neck, shrug, steady the shoulders, and twist the arms.

The trapezius elevates, depresses, rotates, and retracts the scapula, or shoulder blade.

Innervation of the trapezius is derived from the spinal accessory nerve.

12. Sacral ala is related to

a) Ureter

b) Parasympathetic ganglion

c) Umbilical artery

d) Iliolumbar artery

Correct Answer - D

Ans. is 'd' i.e., Iliolumbar artery,

- **Ala of sacrum** is a large triangular surface either side of **sacral** base, continuous with iliac fossa (akin to adapted and joined transverse and costal processes elsewhere spine)
- The smooth medial part of the ala of sacrum is associated with the subsequent 4 structures from medial to lateral side: 1. Sympathetic chain. 2. Lumbosacral trunk. 3. Iliolumbar artery. 4. Obturator nerve.
- The ventral ramus of L5 nerve is really tight that it grooves the ala.
- The rough lateral part of the ala provides origin to iliacus muscle anteriorly and connection to the lumbosacral ligament posteriorly.

13. Ala of sacrum is not crossed by

a) Sympathetic chain

b) Iliolumbar artery

c) Obturator nerve

d) Ureter

Correct Answer - D

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

- The smooth medial part of the ala of sacrum is associated with the subsequent 4 structures from medial to lateral side: 1. Sympathetic chain. 2. Lumbo-sacral trunk. 3. Iliolumbar artery. 4. Obturator nerve.
- The ventral ramus of L5 nerve is really tight that it grooves the ala.
- The rough lateral part of the ala provides origin to iliacus muscle anteriorly and connection to the lumbo-sacral ligament posteriorly.

14. Femoral nerve supplies all except ?

a) Pectineus

b) Sartorius

c) Vastus medialis

d) Obturator externus

Correct Answer - D

Branches of femoral nerve are :?

1. *From the main trunk* :- Nerve supply to iliacus, nerve supply to pectineus and a few vascular branches.
2. *From anterior division* :- Intermediate femoral cutaneous nerve (intermediate cutaneous nerve of thigh), medial femoral cutaneous nerve (medial cutaneous nerve of thigh) and muscular branch to sartorius.
3. *From posterior division* :- Saphenous nerve, nerve supply to quadriceps femoris (rectus femoris, vastus medialis, vastus lateralis, vastus intermedius).
4. *Articular supply* :- Hip joint is supplied by nerve to rectus femoris; knee joint is supplied by nerve to three vasti.

15. The following person is performing deep tendon reflex in a patient. Which of these is the correct statement?



a) The root value for this reflex is L 1, L2 and L3

b) Always absent in peripheral neuropathy

c) The guy is performing it in the wrong way

d) Deep tendon reflexes are always brisk in motor neuron disease

Correct Answer - C

Ans: C. The guy is performing it in the wrong way

(Ref: Ganong 25/e p229)

- This guy is performing the deep tendon reflex in the wrong way.

- The mistakes in the technique:
 - The feet of the patient should not be touching the bed.
 - The quadriceps muscle in the thigh should be exposed.
- Knee reflex:
 - (L2-L4) Slightly lift up the leg under the knee, and tap the patellar tendon with a reflex hammer.
 - There should be a reflex contraction of the quadriceps muscle (knee extension).
- **Purpose: To check the function of Quadriceps femoris** supplied by femoral nerve(L2, L3, L4)

16. Muscular ridges [trabeculae carneae] are present in

a) Left atrium

b) Left ventricle

c) Right atrium

d) Right ventricle

Correct Answer - B:D

Ans. is `b > d' i.e., Left ventricle > Right ventricle

- As Trabeculae **carneae** are present both in right and left ventricles. But they are more prominent in left ventricle
- ACCORDING TO Essentials of Anatomy; "The inflow part of each ventricle has a rough inner, surface because of presence of numerous bundles of cardiac muscle called trabeculae **carneae**".

17. Crista terminalis is present in ?

a) Left atrium

b) Left ventricle

c) Right atrium

d) Right ventricle

Correct Answer - C

Crista terminalis (divides the right atrium into anterior and posterior part) is a ridge of smooth muscle fibers extending from the SVC to valve of IVC.

It is developed from *embryonic right venous valve* and is represented on the surface by *sulcus terminalis*.

18. True about hemiazygos vein are all except

a) Pierces left crus of diaphragm

b) Drains esophageal vein

c) At T8 level drains into azygos vein

d) Formed by right lumbar azygos and right ascending lumbar veins

Correct Answer - D

Ans. is 'd' i.e., Formed by right lumbar azygos and right ascending lumbar veins

Hemiazygos vein:

- The hemiazygos vein originates from the left ascending lumbar vein, left renal vein, or both.
- The hemiazygos vein enters the thorax through the aortic hiatus. It then continues superiorly along the left anterior aspect of the vertebral bodies.
- Along its path the hemiazygos vein receives the lower four or five left intercostal veins. It also frequently receives the accessory hemiazygos vein.
- Function: The hemiazygos vein helps to drain the left mediastinum and left lower esophagus.
- The hemiazygos vein crosses from left to right at approximately the level of T9 and terminates by emptying into the azygos vein.

19. 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.

20. Base of the heart is formed mainly by:

a) Right atrium

b) Left atrium

c) Right ventricle

d) Left ventricle

Correct Answer - B

The heart has three surfaces: sternocostal (anterior), diaphragmatic (inferior), and a base (posterior).

It also has an apex, which is directed downward, forward, and to the left.

The sternocostal surface is formed mainly by the right atrium and the right ventricle.

The right border is formed by the right atrium; the left border, by the left ventricle and part of the left auricle.

The diaphragmatic surface of the heart is formed mainly by the right and left ventricles. The inferior surface of the right atrium, into which the inferior vena cava opens, also forms part of this surface.

The base of the heart, or the posterior surface, is formed mainly by the left atrium, into which open the four pulmonary veins.

21. Base of the heart is formed by ?

a) Right atrium

b) Right ventricle

c) Left atrium

d) Left ventricle

Correct Answer - A:C

Ans. is `c > a' i.e., Left atrium > Right atrium

- Base (posterior surface) is formed mainly by left atrium and partly by right atrium. It is separated from T₅ to T₈ vertebrae by pericardium
- The **apex** (the most inferior, anterior, and lateral part as the **heart** lies in situ) is located on the midclavicular line, in the fifth intercostal space. It is **formed** by the left ventricle.
- Anterior (sternocostal) surface is formed mostly by right ventricle (major) and right auricle and partly by left ventricle and left auricle.

22.

Anterosuperior sternal part of heart is made up of ?

a) Right atrium and auricle

b) Left atrium.

c) Left ventricle

d) Right ventricle

Correct Answer - D
Ans. is 'd' i.e., Right ventricle

23. Which chamber's anterior wall forms most of the sternocostal surface of the heart?

a) Left atrium

b) Left ventricle

c) Right atrium

d) Right ventricle

Correct Answer - D

The heart has three important surfaces: an anterior surface, a diaphragmatic surface, and a pulmonary surface. The anterior surface, or sternocostal surface, is mostly made up of the right ventricle. The diaphragmatic surface is mostly the left ventricle, but a little bit of the right ventricle sits on the diaphragm as well. Finally, the pulmonary surface, which is on the left, is mostly made up of the left ventricle.

24. Third coronary artery is -

a) Right coronary artery

b) Left coronary artery

c) Conus artery

d) Anterior interventricular artery

Correct Answer - C

Ans. is 'c' i.e., Conus artery

- Third coronary artery is seen only in 50% of human hearts. It is also called conus artery. The **conus artery** is a small early branch off the right coronary artery (RCA) circulation.

25. Which is not a branch of anterior division of internal iliac artery ?

a) Inferior vesical

b) Internal pudendal

c) Iliolumbar

d) Inferior gluteal

Correct Answer - C

Branches of anterior division of internal iliac artery are :

- (i) Superior vesical
- (ii) Middle rectal
- (iii) Inferior *vesical* (in males),
- (iv) Internal *pudendal*,
- (v) Vaginal (in females),
- (vi) *Uterine* (in females)
- (vii) *Obturator*
- (viii) Inferior *gluteal*.

Branches of posterior division are : (i) Iliolumbar, (ii) Lateral sacral, and (iii) Superior gluteal.

26. Internal pudendal artery is a branch of ?

a) Anterior division of internal iliac

b) Posterior division of internal iliac

c) Anterior division of external iliac

d) Posterior division of external iliac

Correct Answer - A

Ans. is 'a' i.e., Anterior division of internal iliac

Branches of anterior division of internal iliac artery are : (i) Superior vesical, (ii) Middle rectal, (iii) Inferior vesical (in males), (iv) *Internal pudendal*, (v) Vaginal (in females), (vi) *Uterine* (in females), (vii) *Obturator*, and (viii) *Inferior gluteal*.

Branches of posterior division are : (i) *Iliolumbar*, (ii) Lateral sacral, and (iii) Superior gluteal.

27. Which is derived from thoracolumbar fascia -

a) Medial arcuate ligament

b) Lateral arcuate ligament

c) Lacunar ligament

d) Cruciate ligament

Correct Answer - B

Ans. is 'b' i.e., Lateral arcuate ligament

- The **lateral arcuate ligament** (also **lateral** lumbocostal arch and external **arcuate ligament**) is a **ligament** under the diaphragm that arches across the upper part of the quadratus lumborum muscle. It is traversed by the subcostal nerve, artery and vein.
- It is derived from thoracolumbar fascia.

28. Internal spermatic fascia is derived from ?

a) External oblique muscle

b) Internal oblique muscle

c) Fascia transversalis

d) Colle's fascia

Correct Answer - C

Ans. is 'c' i.e., Fascia transversalis

Layers of the scrotum

- The scrotum is made up of the following layers from outside inwards.
 1. Skin, continuation of abdominal skin.
 2. Dartos muscle which replaces the superficial fascia. The dartos muscle is prolonged into a median vertical septum between the two halves of the scrotum.
 3. The external spermatic fascia from external oblique muscle.
 4. The cremasteric muscle and fascia from internal oblique muscle.
 5. The internal spermatic fascia from fascia transversalis

29. The toughest layer of the esophagus is the

a) Mucosa

b) Submucosa

c) Muscularis

d) Adventitia

Correct Answer - C

C i.e. Muscularis

- The **esophagus** contains four **layers**—the mucosa, submucosa, muscularis, and tunica adventitia.
- The mucosa is made up of stratified squamous epithelium containing numerous mucous glands.
- The submucosa is a thick, loose fibrous **layer** connecting the mucosa to the muscularis.
- The muscularis is composed of an inner layer, in which the fibres are circular, and an outer layer of longitudinal fibres.
- Both muscle groups are wound around and along the alimentary tract, but the inner one has a very tight spiral, so that the windings are virtually circular, whereas the outer one has a very slowly unwinding spiral that is virtually longitudinal.
- Muscularis is the *toughest layer of esophagus*; upper 1/3rd is composed of *skeletal muscle*, lower 1/3rd is composed of smooth muscle & the middle third is made up of both types of muscle.
- The tunica adventitia, is composed of loose fibrous tissue that connects the esophagus with neighbouring structures

30. Nerve supply above pectinate line is through ?

a) Inferior rectal nerve

b) Pudendal nerve

c) Autonomic nerves

d) Perineal branch of S₄

Correct Answer - C

Nerve supply of anal canal

Mucous membrane above pectinate line is supplied by autonomic nerves (sympathetic L₁ L₂ and parasympathetic: S₂ S₃ S₄) and therefore is insensitive to pain.

Part below the pectinate line is supplied by somatic nerves (inferior rectal nerve a branch of pudendal nerve) and therefore is sensitive to pain.

Thus pain sensations are carried by pudendal nerve.

31.

Right gastric nodes drain from which part of stomach

a) Fundus

b) Greater curvature

c) Lesser curvature

d) None

Correct Answer - C

Ans. is 'c' i.e., Lesser curvature

The gastric lymph nodes consist of two sets, superior and inferior.

- The Superior Gastric Glands accompany the left gastric artery and are divisible into three groups:
 1. Upper, on the stem of the artery;
 2. Lower, accompanying the descending branches of the artery along the cardiac half of the lesser curvature of the stomach, between the two layers of the lesser omentum;
 3. Paracardial outlying members of the gastric glands, disposed in a manner comparable to a chain of beads around the neck of the stomach. They receive their afferents from the stomach; their efferents pass to the celiac group of preaortic lymph nodes.
- The Inferior Gastric Glands, four to seven in number, lie between the two layers of the greater omentum along the pyloric half of the greater curvature of the stomach.

32. Gerlach valve is present in -

a) Gall bladder

b) Nasolacrimal duct

c) Pancreatic duct

d) Vermiform appendix

Correct Answer - D

Ans. is 'd' i.e., Vermiform appendix

- **Valve of Gerlach** definition is - an inconstant fold of mucous membrane resembling a **valve** at the cecal end of the vermiform appendix.

33. Normal volume of adult testis

a) 5-10 ml

b) 10-15 ml

c) 15-20 ml

d) 25-30 ml

Correct Answer - C

Ans. is 'c' i.e., 15-20 ml

"Normal adult testicular volume is 15-20 ml, calculated by the formula :

- length x width x depth x 0.52 = volume" — Grainger.

34. Length of LES is ?

a) 1-2 cm

b) 3-4 cm

c) 1-2 mm

d) 3-4 mm

Correct Answer - B

Ans. is 'b' i.e., 3-4 cm

- The **lower esophageal sphincter** (LES) is a bundle of muscles at the low end of the **esophagus**, where it meets the stomach.
- When the LES is closed, it prevents acid and stomach contents from traveling backwards from the stomach.
- The LES muscles are not under voluntary control.
- Lower esophageal sphincter is at diaphragmatic constriction.
- Normal abdominal LES length (3.1cm)
- The basal **pressure** of the LES is 10–45 mmHg.
-

35. Internal rectal venous plexus lies at ?

a) Outer anal verge

b) White line of Hilton

c) Proximal to pectinate line

d) Distal to pectinate line

Correct Answer - C

- Internal rectal venous plexus (Hemorrhoidal plexus) lies above the pectinate line.
- It lies in the submucosa of anal canal and drains mainly into superior rectal vein, but communicates freely with external rectal venous plexus.
- The internal plexus is in the form of a series of dilated pouches and veins present in the 3, 7 and 11 O'clock positions are large and constitute potential sites from primary internal piles (hemorrhoids).

36. All of the structures are included in the 'Triangle of Calot' are all, EXCEPT:

a) Portal vein

b) Cystic artery

c) Right hepatic artery

d) Lymph node of Lund

Correct Answer - A

The triangle of Calot is an important landmark whose boundaries include the common hepatic duct medially, the cystic duct laterally, and the inferior edge of the liver superiorly. **The cystic lymph node** of Lund (also known as the Calot node) is within this triangle; also here, the **cystic artery** branches off the right hepatic artery. The Calot node is the main route of lymphatic drainage of the gallbladder.

37. Ovarian artery is a branch of:

a) Renal artery

b) Internal iliac artery

c) Abdominal part of the aorta

d) External iliac artery

Correct Answer - C

- The ovarian artery arises from the abdominal part of the aorta at the level of the first lumbar vertebra. The artery is long and slender and passes downward and laterally behind the peritoneum. It crosses the external iliac artery at the pelvic inlet and enters the suspensory ligament of the ovary.
- It then passes into the broad ligament and enters the ovary by way of the mesovarium.

38. All of the following are muscles of nose except

a) Procerus

b) Compressor naris

c) Depressor septi

d) Angularisoris

Correct Answer - D

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

- Muscles of nose :- Procerus, compressor naris, dilator naris, depressor septi.
- Muscles around mouth :- Orbicularis oris, buccinator, levatorlabii superioris, levatorlabii superioris alaque nasi, zygomaticus major, levatorlabii superioris, levatorangulioris, zygomaticus minor, depressor angulioris, depressor labiiinferioris, mentalis, **risorius**.

39. Lymphatic drainage of lateral wall of nose

a) Submandibular nodes

b) Retropharyngeal nodes

c) Deep cervical nodes

d) All of the above

Correct Answer - D

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

- Lymphatic drainage of nose is BY Anterior half of nasal cavity (Both septum and lateral wall) -s Submandibular nodes
- Posterior half of nasal cavity (Both septum and lateral wall)Retropharyngeal nodes and upper deep cervical nodes.

40.

Lymphatic drainage of anterior part of nose is to?

a) Submandibular LN

b) Parotid

c) Pretracheal LN

d) Retropharyngeal LN

Correct Answer - A

Ans. is 'a' i.e., Submandibular LN

- Anterior half of nasal cavity (including anterior part of nasal septum) drains into submandibular nodes.
- Vessels from the posterior two thirds of the nasal cavity and from the ethmoid sinuses drain partly to the retropharyngeal nodes and partly to the superior deep cervical nodes.

41. The longest cranial nerve :

a) Optic

b) Abducent

c) Trigeminal

d) vagus

Correct Answer - D

D i.e., vagus

- **Vagus** (Xth) Cranial nerve has the longest and varied area of supply.
- The trigeminal (V, fifth) is the largest & thickest cranial nerve.
- The **trochlear nerve** is the smallest nerve in terms of the number of axons it contains.
- The **trochlear nerve has the greatest intracranial length.**
- The **olfactory nerve** is the shortest of the twelve cranial nerves
- **Abducent nerve** has the longest **intra-cranial INTRADURAL** course

42. Tympanic plexus is formed by-

a) Tympanic branch of glosopharyngeal nerve

b) Vagus nerve

c) Gacial nerve

d) Mandibular nerve

Correct Answer - A

A i.e. Tympanic branch of glosopharyngeal nerve

43. Parasympathetic nervous system comprises of:

a) Cranial nerves III, V VII, X and sacral nerves S1, S2, S3, S4, S5

b) Cranial nerves III, VII, IX, X and sacral nerves S2, S3, S4

c) Cranial nerves V, VII, IX, X and sacral nerves S2, S3, S4

d) Cranial nerves III, V VII, X and sacral nerves S2, S3, S4

Correct Answer - B

Ans: B. Cranial nerves III, VII, IX, X and sacral nerves S2, S3, S4

(Ref Gray's 40/ep235; Ganong 25/ep257, 24/ep2571)

- Parasympathetic flow is cranio-sacral, carried by cranial nerves III, VII, X, X & sacral nerves S2, S3, S4.

44. Suprascapular artery arises from which of the following branches of subclavian artery?

a) Internal thoracic artery

b) Thyrocervical trunk

c) Costocervical trunk

d) Dorsal scapular artery

Correct Answer - B

Suprascapular artery is a branch of the thyrocervical trunk. It supplies the supraspinatus and infraspinatus muscles and the shoulder and acromioclavicular joints.

The right subclavian artery arises from the brachiocephalic trunk and left subclavian artery originates directly from the arch of aorta.

The five main branches of subclavian artery are:

- Vertebral artery
- Internal mammary (thoracic) artery
- Thyrocervical trunk
- Costocervical trunk
- Dorsal scapular artery

45. Internal thoracic artery is a branch of ?

a) Common carotid artery

b) Brachiocephalic trunk

c) Subclavian artery

d) External carotid artery

Correct Answer - C

Internal thoracic artery

It arises from 1st part of subclavian artery and descends through anterior ends of upper six intercostal spaces lying 1.25 cm lateral to sternal margin.

It divides into two terminal branches, *musculophrenic and superior epigastric* in 6th intercostal space.

Branches of internal thoracic artery are (i) mediastinal branches, (ii) pericardial branches, (iii) sternal branches, (iv) pericardiophrenic branches, (v) anterior intercostal arteries (in upper six spaces), (vi) perforating branches, and (vii) two terminal branches, musculophrenic and superior epigastric.

46. Nerve which loops around submandibular duct?

a) Mandibular nerve

b) Lingual nerve

c) Hypoglossal nerve

d) Recurrent laryngeal nerve

Correct Answer - B

Submandibular duct

- It is 5 cm long duct and runs forwards on hyoglossus, between lingual and hypoglossal nerves.
- At the anterior border of the hyoglossus muscle it is crossed by lingual nerve which loops around it.
- *It opens into the floor of mouth, on the summit of the sublingual papilla at the side of frenulum of tongue.*

47. Which of the following is wrong regarding ophthalmic artery

a) Present in dura along with optic nerve

b) Supplies anterior ethmoidal sinus

c) Artery to retina is end artery

d) Leaves orbit through inferior orbital fissure

Correct Answer - D

Ans. is 'd' i.e., Leaves orbit through inferior orbital fissure [*Ref BDC 6thle Vol.3 p. 209*]

- Ophthalmic artery does not leave the orbit. It terminates near the medial angle of eye by dividing into supratrochlear and dorsal nasal branches.
- It lies along with optic nerve in a common dural sheath.
- It supplies anterior ethmoidal sinus by its anterior ethmoidal branch.
- Central artery to retina (branch of ophthalmic artery) is an end artery.

48. 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**

49. Superior thyroid artery originates from:

a) Internal carotid artery

b) External carotid artery

c) Facial artery

d) Maxillary artery

Correct Answer - B

Branches of the External Carotid Artery Superior thyroid artery

Ascending pharyngeal artery

Lingual artery

Facial artery

Occipital artery

Posterior auricular artery

Superficial temporal artery

Maxillary artery

50. The following statements concerning chorda tympani nerve are true except that it?

a) Carries secretomotor fibers to submandibular gland

b) Joins lingual nerve in infratemporal fossa

c) Is a branch of facial nerve

d) Contains postganglionic parasympathetic fibers

Correct Answer - D

Chorda tympani nerve contains preganglionic parasympathetic fibers, not parasympathetic fibers. It synapses in the submandibular ganglion.

51. True regarding cavity of diencephalons is

- a) Septum pellucidum forms partition
- b) Septum pellucidum cavity opens superiorly
- c) Lateral wall is lamina terminalis
- d) Inter thalamic adhesions join lateral walls

Correct Answer - D

D i.e. Inter thalamic adhesions join lateral Walls

- Lamina terminalis is a thin sheet of gray matter, which *extend between two hemisphere from rostrum of corpus callosum to top of optic chiasma forming the anterior wall of 3rd ventricle.*
- Septum pellucidum is a thin vertical sheet of (gray & white) nervous tissue, which connects *corpus callosum (rostrum, genu & front of body) to anterior column of fornix and forms partition between anterior horns of lateral ventricles (not 3rd ventricle or cavity of diencephalon).*
- Lateral wall of cavity of diencephalon (3rd ventricle) is formed by thalamus, hypothalamus, hypothalamic sulcus & subthalamus.

52. Anterior horn of lateral ventricle is closed anteriorly by -

a) Thalamus

b) Septum pellucidum

c) Lamina terminalis

d) Corpus callosum

Correct Answer - D

Anterior horn of lateral ventricle is closed anteriorly by the genu and rostrum of corpus callosum.

Lateral ventricle

Two lateral ventricles are the *cavities of cerebral hemisphere (one in each hemisphere)*. Each lateral ventricle communicates with third ventricle through *interventricular foramen of Monro*.

It is divisile into four parts :?

1) Central part (body) : It is located in the medial parts of frontal and parietal lobes. It extends from interventricular foramen (of Monro) in front to splenium of corpus callosum behind. It *has choroid plexus*. It has :-

- o Roof : Formed by corpus callosum.

i. Floor : Formed form lateral to medial by caudate nucleus (body), stria terminalis, thalamostriate vein, and lateral part of upper surface of thalamus.

i. Medial wall (partition between two lateral ventricles) : By septum pellucidum and body of fornix.

2) Anterior horn : It lies in front of interventricular foramen of Monro extending into the frontal lobe. It *has no choroid plexus*. Its bondries are :-

- Anterior : Posterior surface of genu and rostrum of corpus callosum.
- Roof : Anterior part of trunk of corpus callosum.

- *Floor* : Head of caudate nucleus and upper surface of rostrum of corpus callosum.
 - *Medial (partition)* : Septum pellucidum and column of fornix.
- 3) Posterior horn : It lies behind splenium of corpus callosum and extends into occipital lobe. It may be variable in size (*may be absent*). It *has no choroid plexus*. Its boundaries are :-
- i. *Floor and medial wall* : Bulb of posterior horn raised by forceps major and calcar avis, an elevation raised by calcarine sulcus (anterior part).
 - i. *Roof and lateral wall* : Tapetum
- 4) Inferior horn : It is *the largest horn* and extends into *temporal lobe*. It *has choroid plexus*. Its boundaries are
- i. *Roof and lateral wall* : Tapetum, tail of caudate nucleus, stria terminalis and amygdaloid body.
 - i. *Floor* : *Collateral eminence* (elevation by collateral sulcus) and hippocampus medially.

53. TRUE about corpus callosum is/are?

1. Largest commissure of the brain
2. Connect two frontal lobe
3. Unite two hemispheres
4. Superiorly related to indusium griseum
5. Co-ordinates activities of two hemispheres

a) 1,2,3 & 5

b) 1,2,3 & 4

c) 2,3,4 & 5

d) 1,2,3,4 & 5

Correct Answer - D

Corpus callosum is the largest commissure of the brain. It connects the two cerebral hemispheres. It connects all part of the cerebral cortex of the two sides, except the lower and anterior parts of the temporal lobes which are connected by the anterior commissures.

- It is approximately 10 cm long, with an anterior end approximately 4 cm from the frontal lobes and posterior end approximately 6 cm from the occipital lobe.
- The superior surface of callosal trunk is covered by a thin layer of grey matter, the indusium griseum.
- Connection that link the same, or similar area on each side are termed homotopic connections. The corpus callosum also interconnects heterogeneous cortical areas on the two sides (heterogenous connections).

Fibres of corpus callosum

1. The rostrum connects the orbital surfaces of the two frontal lobes.
2. The forceps minor is made up fibres of genu that connects the two frontal lobes.
3. The forceps major is made up of fibres of the splenium connecting the occipital lobes tapetum.

Functional significance:

The corpus callosum helps in co-ordinating activities of the two hemispheres.

54. Which of the following nerve nucleus underlies the facial colliculus?

a) Abducent

b) Vestibulocochlear

c) Facial

d) Trigeminal

Correct Answer - A

Ans. a. Abducent

'Facial colliculus is situated in the pons, It overlies the abducent nucleus. The facial nerve originates from its nucleus and goes around the abducent nerve. This is called ss neurobiotaxis- Gray's 40/ep240

55. Efferent fibers of amygdala are

a) Stria terminalis

b) Striavascularis

c) Lamina terminalis

d) Mosseyfibers

Correct Answer - A

Ans. is 'a' i.e., Stria terminalis

- Stria terminalis forms the efferent fibers of amygdaloid nucleus passing in the roof of inferior horn and floor of body of lateral ventricle.

56. Superior cerebellar peduncle contains mainly which tract ?

a) Tectocerebellar

b) Olivocerebellar

c) Vestibulo cerebellar

d) Reticulo cerebellar

Correct Answer - A

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

Superior cerebellar peduncle

- This is the major output of the brain and connects to the midbrain, via the cerebellothalamic tract (to the thalamus), and the cerebellorubral tract (to the red nucleus). It receives afferents from the locus coeruleus, and ventral spinocerebellar tract.

Middle cerebellar peduncle

- This is the largest peduncle and connects the cerebellum to the pons. It connects the contralateral pontine nucleus to the cerebellar cortex and also carries the input from the contralateral cerebral cortex. It is composed of three fasciculi including the superior, inferior and deep.

Inferior cerebellar peduncle

- This connects the spinal cord and medulla to the cerebellum. The posterior spinocerebellar tract receives proprioceptive information from the body. The cuneocerebellar tract receives proprioceptive input from the upper limb and neck. The trigeminocerebellar tract sends proprioceptive input from the face. The juxtarestiform is an efferent system here.

57. Yolk sac is derived from

a) Hypoblasts

b) Epiblasts

c) Syncytiotrophoblast

d) None

Correct Answer - A

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

- The yolk sac develops from hypoblast cells. By the end of 2nd week the lower half of primary yolk sac pinches off to form definitive yolk sac, while a second wave of hypoblast cells form inner lining of definitive yolk sac.

58.

Part of neural tube from which corpus callosum develops

a) Basal lamina

b) Alar lamina

c) Lamina terminalis

d) Basal plate

Correct Answer - C

Ans. is 'c' i.e., Lamina terminalis

- The development of the corpus callosum occurs between the 12th and 16-20th weeks of gestation.
- It begins with the genu and then continues posteriorly along the body to the splenium. The rostrum is the last part to be formed.
- Myelination of the corpus callosum occurs in the opposite direction, from the splenium forwards.
- They develop from lamina terminalis which is *cranial part of neural tube* and later lies in the anterior wall of 3rd ventricle.
- The corpus callosum, the largest of cerebral commissures, takes the form of an arch over the third ventricle.
- It connects the neocortices of both sides.

59.

Which of the following part of corpus callosum develops first

a) Dorsal part of genu

b) Ventral part of genu

c) Rostrum

d) Splenium

Correct Answer - A

Ans. is 'a' i.e., Dorsal part of genu

- During development of corpus callosum, the *dorsal part of genu* and the *body/trunk form first*. Subsequently, ventral (anterior) part of genu and then the splenium arise. Last, the rostrum develops.

60. 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"

61. Which of the following structures are not involved in development of diaphragm?

a) Somatic body wall

b) Septum transversum

c) Pleuroperitoneal membrane

d) Pleuropericardial membrane

Correct Answer - D

Ans: D. Pleuropericardial membrane

Pleuropericardial membrane:

- Supradiaphragmatic structure.
- Not involved in formation of diaphragm.

Development of Diaphragm:

- Septum transversum - Central tendon.
- Pleuroperitoneal membranes → Small intermediate muscular portione.
- Mesentery of esophagus → Crurae.
- Body wall → Peripheral muscular diaphragm.
- Cervical myotomes (muscular input).

62.

Septum transversum gives rise to which part of diaphragm ?

a) Right crus

b) Left crus

c) Central tendon

d) Peripheral costal portion

Correct Answer - C
Central tendon

63. Somites develop from-

a) Notochord

b) Intermediate mesoderm

c) Paraxial mesoderm

d) Lateral plate mesoderm

Correct Answer - C

C i.e. Paraxial mesoderm

Paraxial mesoderm form *somitomeres* which give rise to *Somites* (*metamers or primitive segments*)

Intra-embryonic mesoderm is formed by proliferation of cells in *primitive streak*. & it separates ectoderm & endoderm except in these region - Prochordal plate

- Cloacal membrane

Caudal to prochordal plate in midline as this place is occupied by notochord.

64. which level the somites initially form ?

a) Thoracic level

b) Cervical level

c) Lumbar level

d) Sacral level

Correct Answer - B

Ans. is 'b' i.e., Cervical level

- The first pair of somites develop a short distance posterior to the cranial end of the notochord, and the rest of the somites from caudally.
- "By the 20" day, the first pair of somites have formed in neck region."
Textbook of embryology
- Paraxial mesoderm differentiates into somites. By the end of 20th day, the first pair of somites have formed in neck region. After this, about 3 pairs of somites are formed per day and by the end of 5" week about 42-44 somite pairs are formed (4-occipital, 8-cervical, 12-thoracic, 5-lumbar, 5-sacral and 8-10 coccygeal). Somites are further differentiated into :-
- Dermatomyotome :- Give rise to skeletal muscles and dermis.
- Sclerotomes :- Give rise to vertebral column.

65. Which of the following statements is/are false about ostium secundum ASD -

a) Fixed splitting of 2nd heart sound

b) Narrow splitting of 2nd heart sound

c) Lt axis deviation in ECG

d) b and c

Correct Answer - D

Ans. is 'b' i.e., Narrow splitting of 2nd heart sound; 'c' i.e., Lt axis deviation in ECG

The primitive atrium is divided into left and right atria by *interatrial septum* which is formed by *fusion of septum primum and septum secundum*.

o In ASD S2 is fixed and wide split (not narrow split)

o Ostium secundum type of ASD is associated with Right axis deviation.

o Because the pressure difference between two atria is small, blood passes at a narrow pressure difference ----> No shunt murmur.

66. Superior parathyroid glands are derived from :

a) 1st branchial pouch

b) 3rd branchial pouch

c) 4th branchial pouch

d) 5th branchial pouch

Correct Answer - C
C i.e. 4th branchial pouch

67. Gene for eye morphogenesis

a) Pax-6

b) BMP-4

c) HOX-D13

d) HOX-A13

Correct Answer - A

Ans. is 'a' i.e., Pax-6

- The Pax-6 gene locus is a transcription factor for various genes and growth factors involved in eye formation. Pax-6 is a master control gene for eye morphogenesis and encodes for Paired box protein Pax-6 (also called aniridia type II protein or oculorhombin).

68. Inner ear fully developed at

a) 4 weeks

b) 10 weeks

c) 20 weeks

d) 32 weeks

Correct Answer - C

Ans. is 'c' i.e., 20 weeks

- Development of membranous internal ear is *completed by 10" weeks* and reaches its *adult size and shape by 20-22 weeks* when the cochlea is developed sufficiently.

69. Remnant of rostral neuropore is -

a) Septum transversum

b) Ligamentum teres

c) Lamina terminalis

d) Cerebellum

Correct Answer - C

Ans. is 'c' i.e., Lamina terminalis

- The cranial open end of neural tube is called as rostral (anterior) neuropore which closes on or before day 26 giving rise to lamina terminalis of brain.

70. Ventral mesogastrium gives rise to

a) Lesser omentum

b) Greater omentum

c) Falciform ligament

d) a & c

Correct Answer - D

A. i.e. Lesser omentum; C i.e. Falciform ligament

Ventral mesogastrium gives rise to Lesser omentum; *Falciform, Coronary & Triangular ligaments*Q. Mn "Lesser FACT"

71. Derivative of dorsal mesogastrium ?

a) Lesser omentum

b) Greater omentum

c) Falciform ligament

d) Triangular ligament

Correct Answer - B
Greater omentum

72. Arch of aorta develops from:

a) Right fourth aortic arch artery

b) Left third aortic arch artery

c) Left fourth aortic arch artery

d) Right third aortic arch artery

Correct Answer - C

Ans. Ans. C: Left fourth aortic arch artery

The fourth aortic arch persists on both sides, but its ultimate fate is different on the right and left sides.

- On the left it forms part of the arch of the aorta, between the left common carotid and the left subclavian arteries.
- On the right it forms the most proximal segment of the right subclavian artery, the distal part of which is formed by a portion of the right dorsal aorta and the seventh intersegmental artery

73. The kidney have the following anatomic characteristics, **EXCEPT**:

a) The right kidney relates anteriorly to the liver

b) The left kidney relates anteriorly to the pancreas

c) The kidneys lie completely within the retroperitoneal space

d) The right renal artery arises from the aorta passing anterior to the vena cava and enters the kidney at the hilus

Correct Answer - D

The kidneys lie along the vertebral column lying against the psoas major muscle extending from the first to the fourth lumbar vertebrae. They lie exclusively within the retroperitoneal space. The renal arteries arise from the aorta. The right renal artery passes behind the inferior vena cava, entering the kidney at the hilus where it divides into segmental branches. The five segmental branches give rise to the interlobar arteries, which in turn give rise to the arcuate arteries. The interlobar arteries arise from the arcuate and give off the afferent arterioles to the glomerulus.

74. Gender from external genitalia of foetus becomes clearly distinguished by -

a) 10 weeks

b) 16 weeks

c) 12 weeks

d) 20 weeks

Correct Answer - A

Ans. is 'a' i.e., 10 weeks

External genitalia are distinguishable by 10th week of fetal life.

75.

Lower part of vagina develops from:

a) Urogenital sinus

b) Mesonephric duct

c) Paramesonephric duct

d) Mesonephric tubules

Correct Answer - A

Development of vagina

- Upper 2/3' : It is derived from *Utero-Vaginal Canal*, i.e. the fused part of paramesonephric duct. Therefore, this part is mesodermal in origin.
- Lower 1/3' : It is derived from *sinovaginal bulb* which inturn is derived from *urogenital sinus*. Thus, this part is *endodermal* in origin.

76. Joint involved in movement of head from left to right.

a) Atlanto axial

b) Atlanto occipital

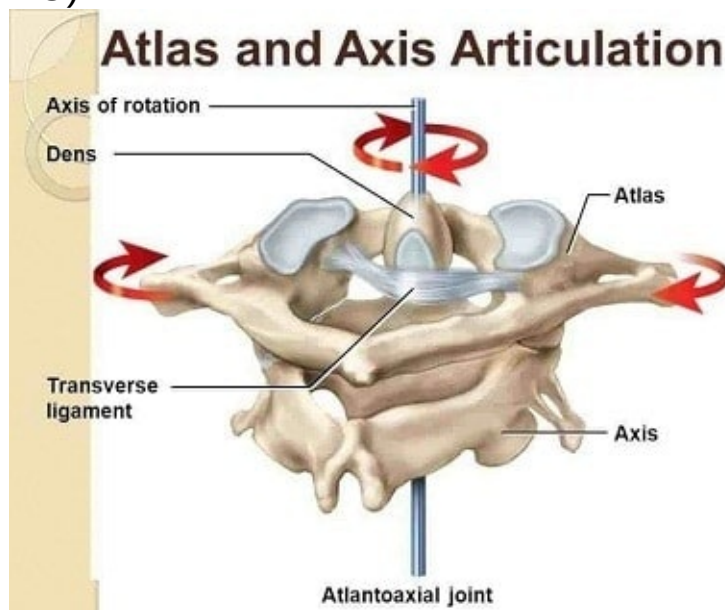
c) C2- C3 Joint

d) C3- C4 Joint

Correct Answer - A

Answer A. Atlanto axial

- Atlanto-occipital (between skull and C1) joint permit nodding of head (as when indicating approval or YES) and Atlanto-axial joint permits the head to be turned from side to side (as indicating disapproval or NO).



77. Blood supply of spinal cord is through

a) Anterior spinal artery

b) Vertebral artery

c) Deep cervical artery

d) All of the above

Correct Answer - D

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

The vertebral arteries are the main source of blood to the [spinal cord](#). However, the following arteries branch from the vertebral arteries to directly supply the spinal cord itself:

- one anterior spinal artery
- two posterior spinal arteries
- anterior and posterior radicular arteries
- arterial vasocorona (anastomose between the spinal arteries)

The anterior and two posterior spinal arteries are direct branches of the two vertebral arteries which merge rostrally to form a single artery - the basilar artery of the Circulus arteriosus ([Circle of Willis](#)). Thus, the vertebral arteries are very important, as they serve as the primary source of blood to the brain and the spinal cord.

Similarly, the radicular arteries take origin from spinal branches of the vertebral arteries and spinal branches of ascending cervical arteries, deep cervical arteries, intercostal arteries, lumbar arteries and sacral arteries.

78. Ito cells are found in:

a) Brain

b) Kidney

c) Liver

d) Lung

Correct Answer - C

Hepatic stellate cells are also known as perisinusoidal lipocytes or Ito cells and are much less numerous than hepatocytes. They play a major role in pathological processes. In response to liver damage, they become activated and predominantly myofibroblast-like. They are responsible for the replacement of toxically damaged hepatocytes with collagenous scar tissue - hepatic fibrosis, seen initially in zone 3, around central veins. This can progress to cirrhosis, where the parenchymal architecture and pattern of blood flow are destroyed, with major systemic consequences.

79. 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

80. Dorello's canal transmits in tip of temporal bone:

a) Middle meningeal artery

b) Mandibular nerve

c) Superior alveolar branch of maxillary

d) Abducent nerve

Correct Answer - D

D. i.e. Abducent nerve

Dorello canal is an opening to cavernous sinus that transmit *abducent nerve* underneath the *superior petrosal sinus*

81.

Which of the following part of corpus callosum develops first

a) Dorsal part of genu

b) Ventral part of genu

c) Rostrum

d) Splenium

Correct Answer - A

Ans. is 'a' i.e., Dorsal part of genu

- During development of corpus callosum, the dorsal part of genu and the body/trunk form first followed by ventral (anterior) part of genu and then the splenium arise. And in Last, the rostrum develops. As a rule of thumb, the corpus callosum is formed from anterior to posterior, with the exception of anterior part of genu and rostrum.

82. $\text{Na}^+ - 1\text{C}^+$ ATPase is a -

a) Extrinsic protein

b) Peripheral protein

c) Transmembrane protein

d) Intracellular proteins

Correct Answer - C

Ans. is 'c' i.e., Transmembrane protein

[Ref: Principles of medical physiology p. 512) .

- Ion pumps (including $\text{Na}^+ - \text{K}^+$ ATPase) and channels are integral (Transmembrane) proteins.

83. Muscle tone is maintained by ?

a) Golgi tendon organ

b) Renshaw cells

c) Muscle spindle

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Muscle spindle

- Sensory receptors (stretch receptors) for stretch reflex are muscle spindles.
- Stretch reflex has two principal functions :
 - 1) *To maintain muscle tone*
- Tone is a tendency of a muscle to resist being stretched.
- Muscle tone is not only important for maintaining posture but also facilitates locomotion and makes all voluntary movement smooth.
- 2) *To make muscles respond to stretch and release*
- Stretch reflex makes a muscle respond to stretch by contraction and to release by relaxation.
- both these responses, which oppose the triggering stimulus, help make voluntary movement smooth and graceful.

84. Function of a muscle spindle is:
September 2009

a) Regulates withdrawl reflex

b) Maintains muscle tone

c) Feedback device to maintain muscle length

d) Receptor for inverse stretch reflex

Correct Answer - C

Ans. C: Feedback device to maintain muscle

85. True for smooth muscle contraction is A/E

a) Catch bridge are less cycle less ATP bridges

b) Dephosphorylation causes definite relaxation

c) LC phosphatase is essential for binding

d) B & C

Correct Answer - D

B & C i.e. Dephosphorylation causes definite relaxation & LC phosphatase is essential for binding

86. Pain by massaging & liniments is relieved due to -

a) Gate control

b) Endogenous opioids

c) Inhibition of pain receptors

d) All of the above

Correct Answer - A

Ans. is 'a' i.e., Gate control

Ref: Medical physiology for UG students p. 86

- The gate control theory provides the basis for reducing pain by other tactile stimuli.
- For example, application of counterirritant balm or liniments; massage; transcutaneous electrical stimulation (TENS); stimulation of skin e.g. applying hot water bag over an area of visceral stimulation; or acuPuncture etc'

87. All or none law is obeyed by:
March 2005

a) Post synaptic potential

b) Non propagated potential

c) Action potential

d) Spike potential

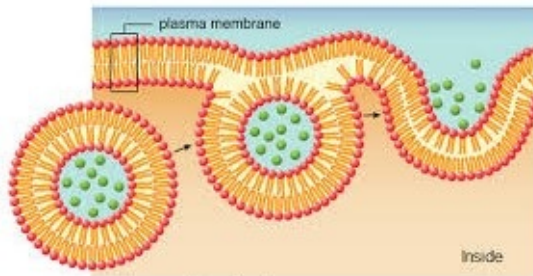
Correct Answer - C

Ans. C: Action potential

Once threshold intensity is reached, a full fledged action potential is produced.

The action potential fails to occur if the stimulus is subthreshold in magnitude and it occurs with constant amplitude and form, regardless of the strength of the stimulus if the stimulus is at or above threshold intensity. Therefore action-potential obeys all or none law

88. Which process of vesicular transport is represented in the image?



a) Exocytosis.

b) Endocytosis.

c) Vesicle transport.

d) Transcytosis.

Correct Answer - A

The process of vesicular transport as shown in the picture represents **Exocytosis**.

- **Exocytosis** - Process by which a cell transports secretory products through the cytoplasm to the plasma membrane.
- Secretory products are packaged into transport vesicles (membrane-bound spheres).
- Simple terms, "Extrusion of cell-bound vesicles" / "Expulsion of cell contents"

Mechanism:

- The inner membrane of vesicle fuses with outer plasma membrane
- Simultaneously, the cytoplasmic side of vesicle fuses with cytoplasmic side of plasma.
- Thus expelling contents.

Types:

- Secretion from the cell occurs via two pathway,

- Constitutive
- Non-constitutive

89. True about summation is?

a) Temporal summation is the application of 2 stimuli together

b) Spatial summation is the application of two stimuli one after another

c) Subthreshold stimuli are used

d) All are true

Correct Answer - C

Subthreshold stimuli are used.

Summation

- A subthreshold stimulus does not produce a response, but when more than one subthreshold stimuli are applied in response is produced.
- The application of two subthreshold stimuli may be sufficiently quickly, one by another (temporal summation) or two subthreshold stimuli together at different places (Spatial summation).
- The summation is due summation of EpsP in synapses (at post-synaptic neuron).

90. Sleep spindles and K-complexes are seen in which stage of sleep?

a) REM

b) Stage 1 NREM

c) Stage 2 NREM

d) Stage 3 NREM

Correct Answer - C

Ans. c. Stage 2 NREM

'There are two different kinds of sleep: rapid eye movement (REM) sleep and non-REM (NREM), or slow-wave sleep.

NREM sleep is divided into four stages. A person falling asleep first enters stage 1, which is characterized by low-amplitude, high-frequency EEG activity. Stage 2 is marked by the appearance of sleep spindles. These are bursts of alpha-like, 10-14 Hz, 50 uV waves. In stage 3, the pattern is one of lower frequency and increased amplitude of the EEG waves. Maximum slowing with large waves is seen in stage 4. Thus, the characteristic of deep sleep is a pattern of rhythmic slow waves, indicating marked synchronization.'

91. Orthodox sleep is -

a) REM sleep

b) NREM sleep

c) Narcolepsy

d) Alternate REM & NREM

Correct Answer - B

Ans is'b'i.e., NREM sleep

[Ry' Ganong 24e/e p. 274; principles of medical physiology p. 692]

- Orthodox sleep → Non-REM (NREM) or slow wave sleep.
- Paradoxical -+ REM (rapid eye movement) sleep

92. Arousal is most difficult in which stage of sleep -

a) Stage 1 NREM

b) Stage 2 NREM

c) Stage 3,4 NREM

d) REM

Correct Answer - C

Ans is 'c' i.e., Stage 3,4 NREM

- 'In general, the ease of arousal from sleep parallels the ordering of the sleep stages, with NEM and stage 1 being the easiest for arousal and stage 4 the most difficult.

93. CSF sugar is -

a) Half of blood sugar

b) 1/3 of blood sugar

c) 2/3 of blood sugar

d) Same as blood sugar

Correct Answer - C

Ans is 'c' i.e., 2/3 of blood sugar

[RI Ganong 24/e p. 603 6 23d/e p. 571]

- CSF / plasma glucose ratio is 0.64.

94. Rubrospinal tract influences -

a) Posture and balance

b) Voluntary activity

c) Vestibuloocular stimuli

d) All of the above

Correct Answer - B

Ans. is 'b' i.e., Voluntary activity

- Actions of extrapyramidal systems
- Reticulospinal (Rubrospinal tracts -+ voluntary and reflex (involuntary) activity).

95. True about generator potential?

a) Graded

b) All or none

c) Propagated

d) No summation

Correct Answer - A

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

Generator potential is a local potential with following features :

i) Graded in nature (not follows all or none law) :- Its magnitude depends upon the intensity of stimulus, (amount of neurotransmitter released) i.e., it increases in graded manner if the intensity of stimulus is increased. On the other hand, action potential is not-graded and is an all or none change, i.e., either all of the action potential is seen or not at all.

ii) Not-self propagated (Action potential is self propagated)

iii) Travels with decrement (Action potential travels without any decrement)

iv) May or may not followed by an effect (action potential, once developed, always has an effect).

96. Which of the following triggers muscle contraction

a) Ca binding tropomyosin

b) Ca binding troponin C

c) ATP breakdown

d) Ca binding troponin I

Correct Answer - B

B i.e. Calcium binding troponin C

- In the resting state of skeletal muscle *tropomyosin molecule lie on top of active sites of actin filaments*, so that attraction cannot occur between actin & myosin filaments to cause contraction.
Mechanism of contraction: when Ca^{2+} are released during the contraction process, the troponin complex undergoes a conformational change that in some way shifts the tropomyosin molecules into the groove between the two actin strands. This uncovers the active sites on actin thus allowing myosin to bind the actin & contraction proceed.
- In resting skeletal muscle *tropomyosin (a long filamentous protein) covers the active sites of actin filament where myosin head binds to actin*. So that the attraction cannot occur between actin and myosin filaments to cause contraction.
- Initiation of muscle contraction occurs, when Ca^{++} binds troponin CQ. Binding causes lateral displacement of tropomyosin into the groove between two actin filaments. This uncovers active sites on actin thus allowing myosin head to bind the actin and contraction proceeds.

97. Peripheral chemoreceptors respond to hypoxia using which channel?

a) Calcium channel

b) Sodium channel

c) Potassium channel

d) Chloride channel

Correct Answer - C

Ans:C. Potassium channel.

- Carotid bodies are composed of glomus cells (also called type I), which are of neuronal phenotype and contain a variety of neurotransmitters.
- Glomus cells are in functional contact with the afferent nerve endings.
- Glomus cells are initial site(s) of sensory transduction.
- Hypoxia releases transmitter(s) from glomus cells, which in turn by depolarizing the sensory nerve ending leads to an increase in sensory discharge.
- One hypothesis assumes that a K⁺-channel protein is an O₂ sensor and that hypoxia depolarizes glomus cells by inhibiting the K⁺ channel, leading to an increase in cytosolic Ca²⁺, resulting in transmitter(s) release.

98. Central Chemoreceptors are not sensitive to following changes in blood:

a) TPCO_2

b) i, PCO_2

c) TH^+

d) TPO_2

Correct Answer - A
A i.e. TPCO_2

99. Transport of Carbon monoxide (CO) is diffusion limited because:

- a) High affinity of CO for haemoglobin
- b) Alveolar membrane is less permeable to CO
- c) CO crosses epithelial barrier slowly
- d) On exposure to air there is sudden increase in partial pressure

Correct Answer - A

A i.e. High affinity of CO for haemoglobin

Transport and toxicity of carbon monoxide (CO) is limited to its diffusing capacity because hemoglobin combines with this gas so rapidly that its partial pressure never has time to build up and is essentially zero in blood. The affinity of Hb for CO is 210 greater than its affinity for O₂. So the partial pressure as low as 0.6mmHg of CO may be lethal. CO is toxic to tissue cytochromes at level that is 1000 times of lethal dose. Therefore tissue toxicity plays no role in clinical CO poisoning. It is treated by hyperbaric pure oxygen and 5% CO₂.

Carbon monoxide (CO) poisoning shifts oxyhemoglobin dissociation curve towards left (i.e. reduces amount of O₂ released in tissue). It reduces the amount of Hb that can carry O₂ and causes anemic hypoxia.

100. Compensating mechanisms involved in acclimatization to altitude :

a) Hyperventilation

b) Hypoventilation

c) Respiratory depression

d) Respiratory depression

Correct Answer - A

A i.e. Hyperventilation

Acclimatization to altitude occurs through *respiratory alkalosis produced by the hyperventilation*, which shifts the O_2 -Hb dissociation curve to left.

Ventilatory Response

- The initial ventilatory response is small as alkalosis tends to counteract effect of hypoxia. However ventilation increases over next 4 days (d/t CSF PH). After 4 days, ventilatory response begins to decline slowly but it takes years of residence at higher altitudes for it to decline to the initial levels.

- The *respiratory alkalosis* produced by hyper ventilation *shifts O_2 -Hb dissociation curve to the left*, but a concomitant *increase in RBC 2, 3, BPG* tends to *decrease the O_2 affinity of hemoglobin*

- The net effect is a small increase in P_{50} . The decrease in O_2 affinity makes more O_2 available to tissue. However the value of increase in

P_{50} is limited because when the arterial PO_2 is markedly reduced, the decreased O_2 affinity also interferes with O_2 uptake by Hb in lung.

Hyperventilation cause respiratory alkalosis d/t CO₂ washout.

101. 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.

102. 1 mole of myoglobin binds to how many moles of oxygen?

a) 1

b) 2

c) 4

d) None of the above

Correct Answer - A

Myoglobin is an iron-containing pigment found in skeletal muscle. It resembles hemoglobin but binds 1 rather than 4 mol of O₂ per mole. Its dissociation curve is a rectangular hyperbola rather than a sigmoid curve. Because its curve is to the left of the hemoglobin curve (Figure 36–5), it takes up O₂ from hemoglobin in the blood. It releases O₂ only at low PO₂ values, but the PO₂ in exercising muscle is close to zero. The myoglobin content is greatest in muscles specialized for sustained contraction. The muscle blood supply is compressed during such contractions, and myoglobin may provide O₂ when blood flow is cut off.

Ref: Ganong's Review of Medical Physiology 23rd edition, Chapter 36.

103. Thickening of pulmonary alveolar – capillary membrane is seen in :

a) Asthma

b) Bronchitis

c) Pulmonary fibrosis

d) Emphysema

Correct Answer - C

Answer is C (Pulmonary fibrosis):

Pulmonary Alveolar — capillary membrane thickening is a characteristic feature of interstitial lung disease like pulmonary fibrosis

104. During ascent of sea diving a diver developed severe knee joint pain. What can be the reason for his problem?

a) Increased O₂

b) Increases N₂O

c) Increased CO₂

d) Increased N₂

Correct Answer - D

Decompression Sickness (DCS):

- DCS is caused by the formation of bubbles from dissolved inert gas (usually nitrogen) during or after ascent (decompression) from a compressed gas dive.
- Decompression sickness occurs when the ascent is too rapid and gas bubbles form and cause damage depending on their location (eg, coronary, pulmonary, spinal or cerebral blood vessels, joints, soft tissue).
- Divers control their ascent for a given depth and time exposure using algorithms that often include periods where ascent is halted for a prescribed period at different depths to allow time for gas wash-out ("decompression stops").

Ref: Bennett M.H., Mitchell S.J. (2012). Chapter e52. Hyperbaric and Diving Medicine. In D.L. Longo, A.S. Fauci, D.L. Kasper, S.L. Hauser, J.L. Jameson, J. Loscalzo (Eds), Harrison's Principles of Internal Medicine, 18e.

105. Amount of blood in capillary pool at anytime -

a) 250 ml

b) 1000 ml

c) 2000 ml

d) 2500 ml

Correct Answer - A

Ans. is 'a' i.e., 250 ml

- Capillaries contain 5% of total blood volume, i.e., 250 ml out of 5000 ml of total blood.

106. Most important factor for maintaining intravascular fluid volume -

a) Hydrostatic pressure in capillaries

b) Osmotic pressure in capillaries

c) Hydrostatic pressure in interstitial space

d) Osmotic pressure in interstitial space

Correct Answer - B

Ans. is 'b' i.e., Osmotic pressure in capillaries

[Ref: Understanding medical physiology p. 331)

- Hydrostatic pressure in the capillaries, i.e., capillary blood pressure creates an outward driving force i.e., tries to force the fluid from the capillary to interstitial space.
- Osmotic pressure in the capillaries creates an inward driving force, i.e., tries to keep the fluid in the capillary.

107. Windkessel effect in large arteries perform what function -

a) Maintain intravascular volume

b) Provide peripheral resistance

c) Prevent fluctuation in BP

d) Exchange of respiratory gases

Correct Answer - C

Ans. is 'c' i.e., Prevent fluctuation in BP

- The elastic walls of large elastic arteries prevent abrupt changes in BP, a phenomenon called windkessel vessels.

108. Cerebral perfusion pressure is -

a) Arterial pressure minus peripheral venous pressure

b) Venous pressure minus arterial pressure

c) Arterial pressure minus intracranial pressure

d) Arterial pressure x venous pressure

Correct Answer - C

Ans. is 'c' i.e., Arterial pressure minus intracranial pressure

(Ref Principles of medical physiology p. 719.)

- Cerebral perfusion Pressure: is the difference between mean arterial pressure (MAP) and intracranial pressure.
- (ICP) or central venous pressure (CVP) whichever is greater. CPP is normally 80-100 mm Hg.

109. All are positive waves in JVP, except -

a) a

b) c

c) v

d) x

Correct Answer - D

Ans. is 'd' i.e., x [Ref: Guyton 12h/e p. 1061]

- Three visible major positive waves (a, c and v).
- Two negative waves (x and y).

110. All are effect of parasympathetic system on heart except -

a) Negative chronotropic

b) Negative inotropic

c) Negative dromotropic

d) All are seen

Correct Answer - B

Ans. is 'b' i.e., Negative inotropic [Ref: Guyton 12'h/e p. 119]

111. Blood supply of liver [ml/100g/min]

a) 1500-2000

b) 1000-1500

c) 50-60

d) 250-300

Correct Answer - C

Ans. is 'c' i.e., 50-60

[Ref: Ganong 23'd/e p. 570]

- Blood flow through various organs are as follow:-
- Total Blood Flow (blood flow to whole organ in ml/min) r Liver (1500)
> kidney (1260) > skeletal muscle (540) > Brain (750) > Skin (,162)
> Heart (250).

112. Most potent stimulus for renin release is

-

a) Sympathetic stimulation

b) Decreased NaCl in DCT

c) Prostacycline

d) Reduced renal perfusion pressure

Correct Answer - D

Ans. is 'd' i.e., Reduced renal perfusion pressure

- All the given four options are stimuli for renin release.
- But reduced renal perfusion pressure is most powerful among them.
- The most powerful stimulus for renin secretion is reduction in renal perfusion pressure.

113. Function of I cells of kidney -

a) Na⁺ reabsorption

b) Cl⁻ reabsorption

c) H⁺ secretion

d) K⁺ secretion

Correct Answer - C

Ans. is 'c' i.e., H⁺ secretion

Collecting duct has :-

1. Principal cells (P cells), which are involved in Na⁺ reabsorption and ADH stimulated water reabsorption.
2. Intercalated cells (I cells) which are concerned with acid (H.) secretion and HCO transport

114. Substance used to measure renal perfusion:
March 2007

a) Inulin

b) PAH

c) Creatinine

d) Mannitol

Correct Answer - B

Ans. B: PAH

Para-Aminohippurate (PAH) is a substance used in the measurement of renal blood flow.

It is useful in this measurement because it is primarily secreted by the renal tubules; only 20% is filtered by the glomerulus. The renal extraction ratio of PAH in a normal individual is approximately 0.92.

115. The tubuloglomerular feedback is mediated by:

- a) Sensing of Na⁺ concentration in the macula densa
- b) Sensing of Cl⁻ concentration in macula densa
- c) Sensing NaCl concentration in the macula densa
- d) Opening up of voltage gated Na⁺ channels in afferent arteriole

Correct Answer - C

C i.e. Sensing NaCl concentration in the macula densa

'To perform the function of auto regulation, the kidneys have a feed back mechanism (tubuloglomerular feed back) that links changes in sodium chloride concentration at the macula densa (tubular component) with the control of renal arteriolar resistance. (glomerular component).'

116. GFR is increased by all except?

a) Increased renal blood flow

b) Efferent arteriole constriction

c) Renal stone in ureter

d) Decreased oncotic pressure

Correct Answer - C

Ans. C. Renal stone in ureter

Ref: Ganong's Review of Medical Physiology, 2nd ed., ch -7, pg. 677-78

- $GFR = K_f [(P_{GC} - P_T) - (n_{GC} - z_T)]$
- K.: Glomerular Ultrafiltration coefficient
- P: Hydrostatic pressure,
- Π : Oncotic Pressure,
- CC: Glomerular capillaries
- T: tubule
- Increased Renal blood flow. efferent arteriole constriction : Increase GC hydrostatic pressure
- Decrease oncotic pressure in plasma : increased GFR
- Renal stones:**
- Tubular Obstruction can lead to increased hydrostatic pressure in tubule (Bowman's capsule).

117. Hormone with distant site of action acts -

a) Autocrine

b) Paracrine

c) Endocrine

d) Any of the above

Correct Answer - C

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

[Ref. Clinical physiology 3'd/e p. 712]

- Hormones are chemical mediators that control cellular functions.
- They are secreted into the blood stream by ductless endocrine glands and thereby exert widespread actions.

Hormone may have : -

- Autocrine action: - Acts on the cell from which it is secreted.
- Paracrine action : - Acts on neighboring cells, e.g., the effect of gastrin on D cells secreting somatostatin.
- Endocrine action: - Acts on cells distant to the cell from which it is secreted. Most of the hormones act by this mechanism.

118.

Proximal part of stomach is mostly used for -

a) Secretion

b) Digestion

c) Motility

d) Storage

Correct Answer - D

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

- Proximal stomach, serves primarily the function of storage.

119. Which among the following is the function of ghrelin?

a) Stimulation of appetite

b) Suppression of appetite

c) Stimulation of sleep

d) Suppression of sleep

Correct Answer - A

Ghrelin is a potent secretagogue of pituitary growth hormone (but not adrenocorticotrophic hormone, follicle-stimulating hormone, luteinizing hormone, prolactin, or thyroid-stimulating hormone). Ghrelin appears to be an orexigenic regulator of appetite (i.e., when ghrelin is elevated, appetite is stimulated, and when it is suppressed, appetite is suppressed).

Ref: Dempsey D.T. (2010). Chapter 26. Stomach. In F.C. Brunicaudi, 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.

**120. Which of the following inhibits gastric phase of gastric secretion:
March 2011**

a) Amino acids in stomach

b) Vagus effect

c) Distension of the stomach

d) Low gastric pH

Correct Answer - D

Ans. D: Low gastric pH

Food in the stomach increase gastric acid secretion by stretching the receptors in the wall of the stomach (mechanical stimulus) The fibers from the receptor enter Meissner's plexus (site of ganglion cells of vagus nerve)

Products of digestion (specially amino acids) in the stomach also stimulates gastric mucosa (chemical stimulus)

Gastric secretion

Gastric acid is produced by parietal cells (also called oxyntic cells) in the stomach. There are three phases in the secretion of gastric acid:

- The cephalic phase: Thirty percent of the total gastric acid secretions to be produced is stimulated by anticipation of eating and the smell or taste of food

The gastric phase: Sixty percent of the acid secreted is stimulated by the distention of the stomach with food. Plus, digestion produces proteins, which causes even more gastrin production

The intestinal phase: The remaining 10% of acid is secreted when chyme enters the small intestine, and is stimulated by small intestine distention.

Regulation of secretion

- Gastric acid production is regulated by both the autonomic nervous system and several hormones.
- The parasympathetic nervous system, via the vagus nerve, and the hormone gastrin stimulate the parietal cell to produce gastric acid, both directly acting on parietal cells and indirectly, through the stimulation of the secretion of the hormone histamine from enterochromaffine-like cells (ECL).
- Vasoactive intestinal peptide, cholecystokinin, and secretin all inhibit production.
- The production of gastric acid in the stomach is tightly regulated by positive regulators and negative feedback mechanisms.
- Four types of cells are involved in this process: parietal cells, G cells, D cells and enterochromaffine-like cells.
- Besides this, the endings of the vagus nerve (CN X) and the intramural nervous plexus in the digestive tract influence the secretion significantly.
- Nerve endings in the stomach secrete two stimulatory neurotransmitters: acetylcholine and gastrin-releasing peptide. Their action is both direct on parietal cells and mediated through the secretion of gastrin from G cells and histamine from enterochromaffine-like cells.
- Gastrin acts on parietal cells directly and indirectly too, by stimulating the release of histamine.
- The release of histamine is the most important positive regulation mechanism of the secretion of gastric acid in the stomach.
- Its release is stimulated by gastrin and acetylcholine and inhibited by somatostatin.

121. Which of the following statements about prolactin is correct?

a) Prolactin initiates ovulation

b) Prolactin causes milk ejection during suckling

c) Prolactin inhibits the growth of breast tissue

d) Prolactin secretion is tonically inhibited by the hypothalamus

Correct Answer - D

Unique among the pituitary hormones, prolactin secretion is tonically inhibited by the hypothalamus. Prolactin is a single-chain protein secreted by the anterior pituitary whose principal physiologic effects involve breast development and milk production. Consistent with its role in lactogenesis, prolactin secretion increases during pregnancy. Dopamine has many characteristics of the hypothalamic inhibitory factor, although it is not found in the hypothalamus.

122. 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.

123. The laboratory report shows values of gonadotropin and ovarian hormones of the blood sample taken, on day 20 of the menstrual cycle of a young woman. Whether her cycle was ovulatory or not may be validly assessed by the reported serum level of :

a) FSH

b) LH

c) Oestradiol

d) Progesterone

Correct Answer - D

D i.e. Progesterone

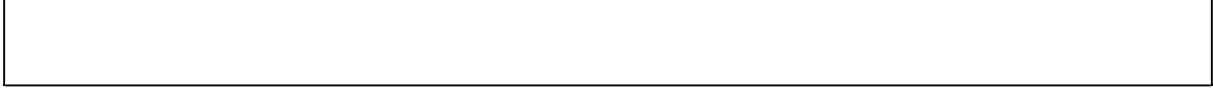
Whether the cycle is ovulatory or anovulatory can be studied by *plasma level of progesterone and LHQ.*

Plasma Progesterone

- Progesterone is secreted by *Corpus luteumQ* which is formed after ovulation
- Its concentration rises after ovulation & peaks at mid *luteal phase (around day 20)* and then declines as luteum degenerates.

Plasma LH

- LH is secreted by anterior pituitary gland LH surge causes ovulation and formation of corpus luteum.
- Its peak (*LH surge*) is reached about *24-36 hrs before ovulationQ.* - After ovulation its level start falling because of negative feedback of progesterone.



124. Which of the pairs about vasopressin receptors is incorrect:

a) V₁-smooth muscles

b) V₂-collecting ducts

c) V₃-anterior pituitary

d) V₄-CNS

Correct Answer - D

V₄-CNS [Ref: Ganong 23/e 279, 666; Journal- Clinical Science (2003) 105, (1-8) at }pebsite

<http://www.clinsci.org/cs/105/0001/cs1050001.htm>]

There are at least three kinds of vasopressin receptors: V₁ (V_{1a}), V₂ and V₃ (V_{1b}). All are G protein-coupled. The V_{1a} and V_{1b} receptors act through phosphatidylinositol hydrolysis to increase the intracellular Ca²⁺ concentration. The V₂ receptors act through G, to increase cAMP levels. These three receptors for vasopressin have unique tissue distributions.

Vasopressin receptors:	Distribution	Function
V ₁ (V _{1a}) receptors	Vascular smooth muscle cells	Vasoconstriction
	Liver	Glycogenolysis
	Area postrema in brain	Decreased cardiac output
	Brain	Neurotransmitter
	Platelets	Platelet aggregation

V2 receptors	Kidney (Collecting ducts)	Antidiuretic action
V3 (V _{1b}) receptors	Anterior pituitary	Increased ACTH secretion

125. Function of incretin is -

a) Increased heart rate

b) Increased insulin secretion

c) Increased respiratory rate

d) Stimulate erythropoiesis

Correct Answer - B

Ans. is 'b' i.e., Increased insulin secretion

[Ref: Principles of medical physiology 4n/e p. 534]

- Incretins are GI hormones which are secreted by enteroendocrine cells in response to m

126. In diseases of growth hormone cell death occurs by -

a) Aging

b) Apoptosis

c) Necrosis

d) All of the above

Correct Answer - B

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

- GH and IGF-I (somatomedin) inhibit cell death by apoptosis.
- Thus, GH deficiency will cause accelerated apoptosis.

127. Special protein for motility of sperm is -

a) Actin

b) Myosin

c) Kinesin

d) Dynein

Correct Answer - D

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

[Ref: Pathophysiology of male reproductive system p. 631]

- "Sperm motility is based on the active sliding of microtubules by axonemal dyneins".

128. Corticotrophs produce all except -

a) ACTH

b) β -endorphin

c) CLIP

d) β -enkephalin

Correct Answer - D

Ans. is'd'i.e., β -enkephalin

- Corticotrophs produce pOMC gene products.

Derivatives of pOMC are:-

1. Pituitary hormones:ACTH, MSH
2. beta-lipotropic hormone (beta-LpH)
3. gamma-lipotropic hormone (γ -LpH)
4. beta-endorphin
5. CLIP (corticotropin-like intermediate lobe peptide).

129. All are true for oxytocin EXCEPT:
March 2013

a) Polypeptide

b) Secreted by anterior pituitary

c) Causes ejection of milk

d) Secreted in both sexes

Correct Answer - B

Ans. B i.e. Secreted by anterior pituitary

Oxytocin is secreted mainly by Supraoptic and paraventricular nucleus of hypothalamus and is transported from hypothalamus to posterior pituitary. When suitable stimuli reach the posterior pituitary from hypothalamus, oxytocin is released into blood.

130. All of the following are true about blood coagulation, EXCEPT:

a) Factor X is part of both intrinsic and extrinsic pathways

b) Extrinsic pathway is activated by contact with negatively charged surfaces

c) Intrinsic pathway can be activated in vitro

d) Calcium is required in several steps of coagulation

Correct Answer - B

Contact with negatively charged surfaces activates the Intrinsic pathway of coagulation and not the Extrinsic pathway.

Intrinsic pathway is also referred to as 'contact pathway' and factor XII is also known as contact factor for its role in the initiation of coagulation on contact with negatively charged surfaces.

Extrinsic pathway is activated by tissue factor a cellular lipoprotein exposed at sites of tissue injury

Ref: Robbins pathologic basis of disease 6th edn/page 977.

131. Conversion of prekallikrein to kallikrein requires which clotting factor -

a) XIII

b) XII

c) XI

d) X

Correct Answer - B

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

[Rel Essential of medical physiology p. 612]

- Initiation of intrinsic coagulation pathway occurs when factor XII is exposed to negatively charged surface.
- This leads to activation of factor XII to XIIa.
- Factor XIIa can then hydrolyze prekallikrein to kallikrein, which in turn activates more XII to XIIa.

132. Which of the following is used to treat pain -

a) Transcutaneous nerve stimulation

b) Subcaudate tractotomy

c) Cingulotomy

d) All of the above

Correct Answer - A

Ans. is'a.i.e., Transcutaneous nerve stimulation

(Ref: Morgan 4th/e p. 389-410)

Various modalities of treatment which are tried for chronic pain:-

1. Pharmacotherapy :- The various drugs (mentioned above) are used for chronic pain syndrome. The various routes can be used:- oral, intravenous, epidural or Transcutaneous.
2. Neuro-surgical :- Anterolateral cordotomy, dorsal root entry zone lesion, selective rhizotomy, commissural myelotomy, sympathectomy mesencephalic tractotomy, cordectomy
3. Chemical neurolysis:- Glycerol, alcohol, phenol e.g. intrathecal hyperbaric phenol.
4. Other- Acupuncture, transcutaneous electric nerve stimulation, neuromodulation procedures (intracranial stimulation:- deep brain/subcortical and motor cortex stimulation) cryoablation

133. Half life of prothrombin -

a) 24 hours

b) 60 hours

c) 5 days

d) 10 days

Correct Answer - B

Ans. is 'b' i.e., 60 hours

Ref: Hematology : Clinical Principles & Applications By Bernadette
F. Rodah George A. Fritsma, Kathryt Doig, Ph.D. p. 599

134. Micturition centre is present in -

a) Lateral temporal cortex

b) Medial temporal cortex

c) Lateral frontal cortex

d) Medial frontal cortex

Correct Answer - D

Ans. is'd'i.e., Medial frontal cortex | Ref: Basic clinical neuroscience p. 2481

- Micturition centers are located in the brain-stem and cerebral cortex.
- In cerebral cortex (cortical center) : A cortical center for voluntary control of initiation and cessation of micturition is Located in the superior frontal gyrus on medial surface (medial frontal cortex).

135. Percentage of Na⁺ in 0.9% of NaCl -

a) 0.45%

b) 1.54

c) 0.9%

d) 2.84%

Correct Answer - A

Ans. is 'a' i.e., 0.45%

- Normal saline (isotonic saline)
- This question is straightforward you can solve it even if you do not know the composition of 0.9% of NaCl 0.9 % NaCl is isotonic saline.
- 0.9%NaCl means 9.0 gm of salt (NaCl) in one litre (i.e.,0.9%) > Out of which Na⁺ is half (0.45%) and Cl⁻ is half (0.45%)

136. Endorphin release causes -

a) Analgesia

b) Allodynia

c) Hyperalgesia

d) None of the above

Correct Answer - A

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

[Ref: Principles of medical physiology p' 486)

- Primary action of endorphin (p-endorphin) is to inhibit Pain'

137. Plasma membrane is freely permeable to

-

a) Glucose

b) Urea

c) Glycerol

d) Alcohol

Correct Answer - D

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

138. Lysosomal enzymes are maximally active at -

a) Acidic pH

b) Alkaline pH

c) Neutral pH

d) Has no relation with pH

Correct Answer - A

Ans. is'a'i.e., Acidic pH

[Ref: Quantitative Human physiology p. 82]

- Lysosomal enzymes of tissue cells have evolved for a physiologic function in an acidic environment".

139. Curdling of milk is caused by -

a) Rennin

b) Lipase

c) Amylase

d) Elastase

Correct Answer - A

Ans. is'a'i.e., Rennin [Ref: Concise oxford dictionary p. 1218i

- Rennin is an enzyme secreted into the stomach of unweaned mammals causing the curdling of milk.

140. Which of the following is a weak bond -

a) Covalent bond

b) Peptide bond

c) Disulphide bond

d) Hydrophobic interactions

Correct Answer - D

Ans. is 'd' i.e., Hydrophobic interactions [Ref Harper 28th/e p. 9; *Basics of molecular biology* p. 786]

- Covalent (strongest)^o > Electrostatic^s (ionic or salt linkage) > hydrogen > hydrophobic > Van de waal's (weakest)Q

141. Enzyme catalase is found in -

a) Lysosome

b) Mitochondria

c) Peroxisomes

d) Cytosol

Correct Answer - C

Ans. is 'c' i.e., Peroxisomes [Ref Ganong 24th/e p. 40; Harper 28th/e p. 597]

Mitochondria	Inner membrane :- ATP synthase, Succinate dehydrogenase Intermembrane space :- Creatine kinase, Adenyl kinase. Matrix :- Glutamate dehydrogenase, Pyruvate dehydrogenase, enzymes of TCA cycle & (3-oxidation of fatty acids)
Plasma membrane	5'-Nudeotidase, Adenyl cydase, Na+K+ ATPase
Lysosome	Acid phosphatase
Golgi Apparatus	Galactosyl transferase, Golgi mannosidase II, Sialyl transferase, GlcNAc transferase I
Endoplasmic reticulum	Glucose-6-phosphatase
Peroxisome	Catalase, Urate (uric acid) oxidase
Cytosol	Lactate dehydrogenase
Nucleus	DNA

142. Phosphorylation of which amino acid does not occur by protein kinase -

a) Asparagine

b) Threonine

c) Serine

d) Tyrosine

Correct Answer - A

Ans. is 'a' i.e., Asparagine [Ref Lehninger 4th/e p. 229]

- Protein kinase mostly add phosphoryl group to a serine, threonine, or tyrosine residues. Some protein kinase target the side chains of histidine, lysine, arginine, aspartic acid and glutamic acid.

143. P : O ratio for FAD is -

a) 3

b) 2.5

c) 1.5

d) 4

Correct Answer - C

Ans. is 'c' i.e., 1.5

- The P : O ratio is a measure of the number of high energy phosphates (i.e., number of ATP molecules) synthesized per atom of oxygen consumed or per molecule of water is produced.
- The P : O ratio for oxidation of metabolites that yield NADH is 2.5 and the ratio for those that yield FADH₂ is 1.5.

144. Substrate level phosphorylation is seen in reaction catalyzed by which enzyme of citric acid cycle?

a) Pyruvate kinase

b) Succinate thiokinase

c) Phosphoglycerate kinase

d) All of the above

Correct Answer - B
Ans. is 'b' i.e., Succinate thiokinase

145. Which of the following is high energy compound?

a) ADP

b) Glucose-6-phosphate

c) Creatine phosphate

d) Fructose-6-phosphate

Correct Answer - C

Ans. is 'c' i.e., Creatine phosphate

High energy compounds

- The energy released during oxidation of monosaccharides, fatty acids and amino acids may not be required immediately. Therefore, there must be some way of storing energy. The energy released during catabolism is captured in the form of a group of compounds known as "high-energy phosphates". The most important member of this group is ATP.
- A compound that liberates 7 Kcal/mol or more on hydrolysis is called high energy compound, or a compound that on hydrolysis undergoes a large (7 kcal/mol) decrease in free energy (ΔG) under standard condition is called high energy compound, i.e., $\Delta G < -7$ Kcal/mol. For example, ATP liberates 7.3 Kcal/mol on hydrolysis. High energy compounds are : ?
- Phosphate compounds : Nucleotides (ATP, GTP, UTP, UDP-glucose), Creatinine phosphate, arginine phosphate, 1,3-bisphosphoglycerate, Phosphoenol pyruvate, inorganic pyrophosphate, Carbamoyl phosphate^e, amino acyl adenylate (amino acyl AMP).
- Sulfur compounds : - CoA derivatives (acetyl CoA^e, Succinyl CoA,

fatty acyl CoA, HMG CoA), S-adenosyl methionine (SAM), adenosine phosphosulfate.

- A compound which liberates < 7 Kcal/mol on hydrolysis is called low energy compound, i.e., a decrease in free energy is < 7 Kcal/mol, i.e., $\Delta G < -7$ Kcal/mol. Low energy compounds are glucose-1-phosphate, fructose-6-phosphate, glucose-6-phosphate, glycerol-3-phosphate, AMP, ADPQ.

146. In ETC at which complex ATP is not formed -

a) NADH CoQ reductase

b) Succinate CoQ reductase

c) CoQ-cytochrome-C reductase

d) Cytochrome C oxidase

Correct Answer - B

Ans. is 'b' i.e., Succinate CoQ reductase [Ref Harper 29th p. 123-125 & p. 107; Chatterjea er Shinde 7th p. 134; Vasudevan 4th p. 216]

Complex I: NADH CoQ-reductase	Permit ATP formation (Site I) Act as proton pump No ATP form
Complex II: Succinate CoQ reductase	Permit ATP formation (Site II) Act as proton pump
Complex III: CoQ - cytochrome - C reductase	Permit ATP formation (Site III) Act as proton pump
Complex IV: Cytochrome C oxidase	

147. If only one terminal aldehyde group of glucose is oxidized, the product is -

a) Glucuronic acid

b) Gluconic acid

c) Glucosaccharic acid

d) Gluconalactone

Correct Answer - B

Ans. is 'b' i.e., Gluconic acid [Ref Chatterjee 8th le p. 29]

Oxidation of sugar

- When aldose sugars are oxidized they may form three different sugar acid, depending upon oxidation of aldehyde group (at C-1) or terminal alcohol group (at C-6).
- .. Aldonic acid :- Oxidation of an aldose with hypobromous acid (HOBr) oxidises only aldehyde group and convert it to carboxyl group to form aldonic acid. For example, glucose is oxidized to gluconic acid.
- 2. Saccharic acid :- Oxidation of aldoses with nitric acid convert both aldehyde and terminal primary alcohol groups to carboxyl group, formic saccharic acid. For example, glucose is oxidize to glucosaccharic acid.
- 3. Uronic acid :- When an aldose is oxidized in such a way that the terminal primary alcohol is converted is to carboxyl without oxidation of aldehyde group, a uronic acid is produce. For example, glucose is oxidized to glucuronic acid.

148. Which of the following are Enantiomers -

a) D-glucose and L-glucose

b) Glucose and galactose

c) Glucose and Mannose

d) d-glucose and 1-glucose

Correct Answer - A

Ans. is 'a' i.e., D-glucose and L-glucose [Ref Harper 29th/e p. 133-134] D and L isomers

- This type of isomerism depends on the orientation of H and OH group around the asymmetric carbon atom just adjacent to terminal primary alcohol (penultimate carbon atom), e.g., carbon atom number 5 in glucose determines whether the sugar belongs to D or L isomer.
- When OH group on this carbon atom is on the right, it belongs to D-series, when it is on left, it is the member of L-series.
- D and L isomers are mirror images of each other.
- These two forms are called enantiomers of each other. Thus, D-glucose and L-glucose are enantiomers of each other.
- Similarly D-mannose and L-mannose, and D-galactose and L-galactose are enantiomers.

All properties of the two members of an enantiomeric pairs (D-or L-series) are identical, they have same boiling point and melting point and the same solubility but they exhibit different optical activity

149. Oxidation without oxygen leads to formation of which product -

a) Pyruvate

b) Fructose

c) Lactate

d) None

Correct Answer - C

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

- Final product of glycolysis in the absence of O₂ (anaerobic glycolysis) is lactate. Anaerobic glycolysis
- It occurs in the absence of oxygen. The pyruvate is fermented (reduced) to lactate in single stage.
- The reoxidation of NADH (formed in the glyceraldehyde-3-phosphate dehydrogenase step) by respiratory chain is prevented as same NADH is utilized at lactate dehydrogenase step.
- So, there is no net production of NADH. Thus, there is net gain of 2 ATP only.
- Unlike pyruvate which is converted to acetyl CoA to enter into krebs cycle, lactate cannot be further utilized by further metabolic pathways. Thus, lactate can be regarded as dead end in glycolysis.
- Anaerobic glycolysis occurs in exercising skeletal muscle, RBCs, lens, some region of retina, renal medulla, testis and leucocytes.

150. Allosteric stimulator of glycogen synthase -

a) AMP

b) Insulin

c) Glucose-6-phosphate

d) Glucose

Correct Answer - C

Ans. is 'c' i.e., Glucose-6-phosphate [Ref Harper 29th/e p. 182 & 28th/e p.

151.

Fatty acid elongation occurs in which part of cell -

a) Cytosol

b) Mitochondria

c) Lysosome

d) Nucleus

Correct Answer - B

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

- There is one step (occurring in cytosol) in synthesis of fatty acid called elongation which involves elongation of synthesizing fatty acid chain by adding carbon atoms.
- But this is not elongation of fatty acid, it is elongation of incompletely synthesized fatty acid chain which leads to formation of a fatty acid (not elongation of fatty acid) The final product is a fatty acid and only after completion of this the product becomes fatty acid.
- Elongation of fatty acid refers to elongation of chain of already existing (or full synthesized) fatty acid. This occurs in microsomes (smooth ER) and mitochondria.

152. Barth syndrome is due to defect in -

a) Thermogenic

b) Cardiolipin

c) Ubiquinone

d) Cytochrome

Correct Answer - B

Ans. is 'b' i.e., Cardiolipin [Ref Biochemistry by Roger Mc Loed p. 27]

- Barth syndrome is an X-linked recessive disorder due to mutation in *tafazzin gene (TAZ)*.
- The mutation leads to abnormal structure or deficiency of cardiolipin, a mitochondrial structural phospholipid.
- This results in mitochondrial dysfunction

153. Glycolipids are formed in -

a) Mitochondria

b) Cytosol

c) Peroxisomes

d) Endoplasmic reticulum

Correct Answer - D

Ans. is 'd' i.e., Endoplasmic reticulum [Ref David E Metzler p. 1168]

- Like the glycoproteins, glycolipids (glycosphingolipids) are synthesized in the endoplasmic reticulum, then transported into the golgi apparatus and eventually outward to join the outer surface of plasma membrane.

154. Which apoprotein is the most important to activate lipoprotein lipase -

a) Apo-A I

b) Apo B48

c) Apo-C II

d) Apo-E

Correct Answer - C

Ans. is 'c' i.e., Apo-C II

- Major activator of lipoprotein lipase is apo-CII

155. Beta oxidation of very long chain fatty acids occurs

a) Cytoplasm

b) Endoplasmic reticulum

c) Lysosome

d) Peroxisomes

Correct Answer - D

Ans. is 'd' i.e., Peroxisomes [Ref Harper 28th /e p. 185, 195]

156. What will happens to structure of alpha-helix if L-alanine is replaced by d-alanine alternatively

a) Change in optical activity

b) Interruption of structure

c) Increased stereoisomerism

d) Increased stability

Correct Answer - B

Ans. is 'b' i.e., Interruption of structure

- D-amino acid would interrupts an α -helix made of L-amino acid.
- D-amino acid substitution in α -helix causes a local change in structure and flexibility at the substituted site, which leads to destabilization

157. Acidic property to α -carbon of amino acid is due to

a) Carboxyl group

b) Amino group

c) Hydrogen atom

d) None

Correct Answer - A

Ans. is 'a' i.e., Carboxyl group

- The acid base properties of amino acids depend on the amino and carboxyl groups attached to the α -carbon.
- The carboxyl ($-\text{COOH}$) group of an amino acid can donate proton (H^+) and behave as an acid forming a negatively charged anion (COO^-).
- Amino group ($-\text{NH}_2$) can accept proton (H^+) and behave as a base, forming positively charged cation (NH_3^+).

158. Histidine is the most important amino acid for buffering in normal conditions because

a) It regulates kidney acid-base balance

b) PKa value is higher than pH

c) PKa value is closer to pH

d) PKa value is very low

Correct Answer - C

Ans. is 'c' i.e., PKa value is closer to pH [Ref Harper 29th/e p. 20, 21 & 28th/e p. 17, 18; Vasudevan 6['] p. 22, 23]

- Maximal buffering capacity occurs at pH equal to pka of buffer.
- Therefore, to work as a best buffer at physiological pH amino acid should have pka value close to physiological pH (7.4).
- Amino acids can have buffering action due to three ionizable groups :
 1. **a-carboxyl group** :- Different amino acids have pka value of a-carboxyl group between 3.5-4. So, carboxyl group of amino acids has maximum buffering capacity between pH 3.5-4.
 2. **a-amino group** :- Different amino acids have pka value of a-amino group between 8.0-9.0. Thus, a-amino group has maximum buffering capacity between pH 8.0-9.0.
 3. **Special ionizable group (in some amino acids)**:- Among special ionizable group of amino acids, imidazole group of histidine has pka value 6.5-7.4, which is closest to physiological pH. Hence, histidine (due to imidazole group) has maximum buffering capacity at physiological pH.

159. True about transamination reaction are all except-

a) Transfer of alpha amino group from alpha amino acid to keto acid

b) Alpha ketoglutarate is the most common receptor

c) Threonine does not undergo transamination

d) Biotin is required as a coenzyme.

Correct Answer - D

Pyridoxial phosphate is a coenzyme in transamination reaction.

160. Acetylcholine is the neurotransmitter in the cholinergic neurons. What is the precursor that acetylcholine is derived from?

a) Dicholine

b) Tyrosine

c) Cholic acid

d) Choline

Correct Answer - D

The conversion of choline by CAT (choline acetyltransferase) is responsible for converting choline to acetylcholine.

Likewise, the conversion of acetylcholine back to choline is by ACh-ase (acetylcholine esterase).

CAT **ACh-ase**
Choline ----> Acetylcholine -----> Choline

161. Imidazole ring is present in

a) Tryptophan

b) Arginine

c) Histidine

d) Tyrosine

Correct Answer - C

Ans. is 'c' i.e., Histidine [Ref Lehinger 2nd ed p.80]

Some amino acids contain a special functional group in their side chain which provide some specific functions to that amino acids. These are :

- Hydroxyl group in serine and threonine → **Indole ring in tryptophan**
- Amide group in asparagine and glutamine → (3-Carboxyl in glutamic acid)
- Thioether in methionine → Imidazole in histidine
- Sulphydryl in cysteine → Phenol in tyrosine
- γ -carboxyl in glutamic acid → Pyrrolidine in proline
- **Guanidinium in arginine** → ϵ -amino in lysine

162. Edman's reagent is

a) 2-4 dinitrophenol

b) 1-fluoro-2, 4-dinitrobenzene

c) Phenyl-isocyanate

d) Cynogen bromide

Correct Answer - C

Ans. is 'c' i.e., Phenyl-isocyanate

- Determination of amino acid sequence (sequence analysis) is performed by **Edman degradation method** on automatic machines, called cyclic sequencers. **Edman's reagent is phenyl-isothiocyanate**, and forms a covalent bond to N-terminal of amino-acid. This can be identified.
- Sanger's reagent (1-fluoro-2,4-dinitrobenzene) can be used in place of Edman's reagent.

163. Creatinine is formed from -

a) Glycine

b) Lysine

c) Leucine

d) Histamine

Correct Answer - A

Creatinine and creatine are synthesized from glycine, arginine and methionine.

Synthesis of creatine and creatinine

Creatine and creatinine are not amino acids, but specialized products of amino acids. Creatine is synthesized from glycine, arginine and methionine. Synthesis start with formation of guanidoacetate from glycine and arginine in kidney. Further reactions takes place in liver and muscle.

164. Argininosuccinate is synthesized from

a) Citrulline and arginine

b) Arginine and aspartate

c) Citrulline and aspartate

d) Citrulline and fumarate

Correct Answer - C

Ans. is 'c' i.e., Citrulline and aspartate [Ref Harper's 25⁰/e p. 273]

- **Argininosuccinate** is synthesized from citrulline and aspartate in **Urea cycle**.

165. Hyperammonemia type-1 is due to deficiency of

a) Arginase

b) Arginosuccinate lyase

c) Arginosuccinate synthase

d) CPS-1

Correct Answer - D

Ans. is 'd' i.e., CPS-1 [Ref Dinesh Puri 3rd ed p. 275]

Disorders caused by genetic defects of urea cycle enzymes

- Hyperammonemia type-I Hyperammonemia type-II Citrullinemia
Argininosuccinic aciduria Arginemia
- **Defective enzyme**
Carbamoyl phosphate synthase-I Ornithine transcarbamoylase
Argininosuccinate synthase Argininosuccinate lyase Arginase
- **Products accumulated**
Ammonia Ammonia Citrulline Argininosuccinate Arginine.

166. OTC deficiency causes

a) Citrullinemia

b) Argininemia

c) Hyperammonemia type-1

d) Hyperammonemia type-2

Correct Answer - D

Ans. is 'd' i.e., Hyperammonemia type-2

- Orinithine transcarbomylase (OTC) deficiency causes hyperammonemia type-2.

167. Ammonia in brain is trapped by

a) Alanine

b) Glutamine

c) Ornithine

d) Aspartate

Correct Answer - B

Ans. is 'b' i.e., Glutamine [Ref Harper 29th ed p. 275]

- The brain is a rich source of glutamine synthase and predominantly detoxifies ammonia by synthesis of glutamine.
- Glutamate + NH₄ → Glutamine synthetase → Glutamine

168. Oxidative deamination is catalyzed by ?

a) Glutaminase

b) Glutamine synthase

c) Glutamate dehydrogenase

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., Glutamate dehydrogenase

169. Least energy producing cycle

a) Glycolysis

b) Krebs's cycle

c) HMP shunt

d) Fatty acid oxidation

Correct Answer - C

**Ans. is 'c' i.e., HMP shunt [Ref Harper 29 /e p. 200-202;
Vasudevan 6th /e p. 116]**

- HMP shunt does not produce energy.
- HMP shunt is particularly important for two purposes :-
 1. Synthesis of ribose for nucleotide and nucleic acid formation.
 2. Formation of NADPH which plays important role in several other biological processes, e.g. synthesis of fatty acids, cholesterol, steroid hormones and neurotransmitters.

170. In Ochronosis there is deficiency of which of the following enzymes?

a) Phenylalanine decarboxylase

b) Homogentisic acid oxidase

c) Alpha ketoglutarate decarboxylase

d) Glucocerebrosidase

Correct Answer - B

The defective enzyme in Ochronosis (Alkaptonuria) is homogentisic acid oxidase in tyrosine metabolism. Homogentisate gets oxidised by polyphenol oxidase to benzoquinone acetate which undergoes polymerization to form a pigment ALKAPTON. Alkapton gets deposited in connective tissues, bones and various organs resulting in condition called OCHRONOSIS.

171. Vitamin B₁ is required for which reaction

a) Transamination

b) Oxidative decarboxylation

c) Carboxylation

d) All of the above

Correct Answer - B

Ans. is 'b' i.e., Oxidative decarboxylation [Ref Harper 29th/e p. 534]

- Active form (coenzyme form) of thiamine is thiamine pyrophosphate (TPP), also called thiamine diphosphate (TDP).
- TPP acts as coenzyme for
 - .. Oxidative decarboxylation:- Pyruvate dehydrogenase, α -ketoglutarate dehydrogenase, branched-chain keto acid dehydrogenase.
 - ?. Transketolase in PPP.

172. Which of the following is not required for healing

a) Vitamin C

b) Copper

c) Methionine

d) Sodium

Correct Answer - D

Ans. is 'd' i.e., Sodium [Ref Textbook of Pathology by Krishna p. 410]

Nutrient required for proper wound healing are :

- Minerals: Iron (divalent iron), Manganese, Magnesium, copper, calcium, zinc.
- Vitamins: Ascorbic acid (vitamin C), Retinol (vitamin A), and less importantly riboflavin, pyridoxin, thiamine, tocopherol (vitamin E).
- Protein and amino acids : Methionine and cysteine are most important.

173. Most important enzyme in DNA replication for chain elongation

a) Helicase

b) DNA polymerase I

c) DNA polymerase III

d) Topoisomerase III

Correct Answer - C

Ans. is 'c' i.e., DNA polymerase III Important DNA Polymerases In Prokaryotes

- **DNA polymerase I** :- Helps in gap filling and synthesis between okazaki fragments of lagging strand, and replaces ribonucleotides of RNA primer by deoxyribonucleotides. It has (i) 3' 5' exonuclease activity, (ii) 5' 3' exonuclease activity and (iii) polymerase (5' -> 3' polymerase) activity
- **DNA polymerase II**:- Helps in (i) proof reading (3' 5' exonuclease activity), and (ii) DNA repair.
- **DNA polymerase III** :- It is the main enzyme that synthesizes prokaryote DNA, i.e., synthesis of leading and lagging strand. It has (i) 5' -> 3' polymerase (or simply polymerase) activity for DNA synthesis, and (ii) 3'->5' exonuclease activity for proof reading.

In Eukaryotes

- **DNA polymerase a** :- It has primase activity (i.e. synthesizes RNA primer), and initiates DNA synthesis.
- **DNA polymerase p** :- It is a DNA repair enzyme
- **DNA polymerase y** :- Replicates mitochondrial DNA
- **DNA polymerase ?**:- Helps DNA synthesis on lagging strand, i.e. elongation of okazaki fragments on lagging strand. It also has 5'->3' exonuclease activity for proof reading.

- **DNA polymerase c** :- Helps in DNA synthesis on leading strand. It also has 5'43 'exonuclease activity for proof reading.

174. Common function of Golgi apparatus and endoplasmic reticulum

a) Protein synthesis

b) Protein degradation

c) Post-translational modification

d) Glycosylation

Correct Answer - C:D

Ans. is 'd > c' i.e., Glycosylation > Post-translational modification [Ref Harper 29th p. 984]

- Golgi apparatus and ER are involved in glycosylation process.
- Glycosylation is a type of post-translational modification

175. Example of postranslational modification is

a) Methylation

b) Oxidation

c) Phosphorylation

d) Splicing

Correct Answer - C

Ans. is 'c' i.e., Phosphorylation [Ref Harper 29th/e p. 380-391]

Important post-translational modifications are :

- Trimming
- Covalent modification : Phosphorylation, glycosylation hydroxylation, γ -Carboxylation of clotting factor by vitamin K.
- Protein folding and Protein degradation

176. Normal role of Micro RNA is:

a) Gene Regulation

b) RNA splicing

c) Initiation of Translation

d) DNA conformational change

Correct Answer - A

A i.e. Gene Regulation

- *Micro-RNA (mi-RNA) is transcribed by RNA polymerase HQ as primary mi-RNA (pri-mi-RNA). It is processed by 2 endoribonucleases of RNase III family:*
 1. Drosha (with DGCR8, in nucleus to precursor mi-RNA or pre-mi-RNA) and
 2. Dicer (with TRBP in cytoplasm to nearly mature mi-RNA or small interfering RNAs = si -RNAs or small temporal RNAs = st RNAs paired with a short RNA complement)
- RNA helicase removes the complement and mature mi- RNA is incorporated into protein complexes to form RNA induce silencing complex (RISC).

By this process of gene silencing by RNA interference (Nobel prize 2006 given to Andrew Fire & Craig mello) mi- RNA, st?

RNA and si - RNA play a important role in gene regulation by inhibition of gene expression (& so translational process)Q

177. RNA polymerase is

a) DNA dependent RNA polymerase

b) RNA dependent DNA polymerase

c) DNA dependent DNA polymerase

d) RNA dependent RNA polymerase

Correct Answer - A

Ans. is 'a' i.e., DNA dependent RNA polymerase [Ref Harper 29th ed p. 386]

- The major enzyme involved in transcription (i.e. synthesis of DNA to RNA) is RNA polymerase.
- It is DNA dependent RNA polymerase.
- DNA dependent DNA polymerase DNA polymerase (In DNA replication)
- DNA dependent RNA polymerase - RNA polymerase (In transcription)
- RNA dependent DNA polymerase -> Reverse transcriptase (In reverse transcription)

178. RNA dependent DNA polymerase is

a) DNA polymerase

b) RNA polymerase

c) Reverse transcriptase

d) Phosphokinase

Correct Answer - C

Ans. is 'c' i.e., Reverse transcriptase

- Reverse transcriptase is an RNA dependent DNA polymerase that produces ds DNA from RNA template. It moves along the template in 3' 5' direction, synthesizing DNA is 5' -> 3' direction.
- It is seen in retro viruses (e.g. HIV).

179. Chromosomal instability syndrome is

a) Fanconi syndrome

b) Ataxia Telangectasia

c) Bloom syndrome

d) All of the above

Correct Answer - D

Ans. is 'd' i.e., All of the above [Ref Talwar G P p. 855]

- Chromosomal instability syndromes are a group of disorders characterized by chromosomal instability and breakage.

There are :

1. Xeroderma pigmentosa

3. Fanconi syndrome

2. Bloom syndrome

4. Ataxia telangectasia

180. Most important tool used in genetic engineering

a) Genes

b) Enzymes

c) Ribozymes

d) Peptidyl-transferase

Correct Answer - B

Ans. is 'b' i.e., Enzymes [Ref Satyanarayan p. 579]

- Genetic engineering simply means manipulation of genetic material to achieve the desired goal in a predetermined way.
- Most important molecular tools in genetic engineering are enzymes used in recombinant DNA technology. (also called genetic engineering).
- Most important of these enzymes is restriction endonuclease.

181. DNA labelling is done by using

a) Tc-99

b) P-32

c) I-131

d) Co-60

Correct Answer - B

Ans. is 'b' i.e., P-32 [Ref Principles & Techniques of practical Biochemistry p. 115]

- The simplest form of labelling DNA is by 5'- or 3'- end labelling.
- 5`-end - labelling involves a phosphate transfer or exchange reaction where the 5' - phosphate of the DNA to be used as the probe is removed and in its place a labelled phosphate, usually P³² is added.
- In 3'-end-labelling, labelled dNTP (ATP or biotin-labelled dNTP) is added to 3' end of DNA by enzyme terminal transferase.

182. Free radical scavenger is

a) Peroxidase

b) Catalase

c) Dehydrogenase

d) All of the above

Correct Answer - B

Ans. is 'b' i.e., Catalase [Ref Robbin's 9th /e p. 48-49]

- Antioxidant enzymes are catalase, superoxide desmutase and glutathione peroxidase.
- These enzyme together act as free radical scavenging system.

183. Earliest symptom of Tay sach disease

a) Exaggerated startle response

b) Bone deformation

c) Hepatomegaly

d) Excessive bleeding

Correct Answer - A

Ans. is 'a' i.e., Exaggerated startle response [Ref Illustrated medical biochemistry p. 330]

Tay-Sach disease

- Clinical symptoms are usually evident in the first year of life
- Initial signs are not dramatic and present as enfeeblement, spasticity and slow development.
- An exaggerated startle response to sound may be the most significant early sign of which a parent is aware.
- Other features are mental retardation, deterioration of vision and early death.

184. Reversible change from one cell type to other is known as -

a) Hyperplasia

b) Hypertrophy

c) Metaplasia

d) Dysplasia

Correct Answer - C

Ans. is 'c' i.e., Metaplasia [Ref: Robbins's 9th/e p. 376, 6th ed p 10]

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

185. Old age pigment is -

a) Hemosiderin

b) Melanin

c) Lipofuscin

d) Bilirubin

Correct Answer - C

Ans. is 'c' i.e., Lipofuscin [Ref Robbin's 9th/e p. 64 & 8thie p. 36]

- It is an insoluble pigment, also known as lipochrome and wear or tear or aging pigment. Lipofuscin is not injurious to the cell or its functions.
- Refer to APPENDIX-90 in volume-3 of this book

186. Hemosiderin contains -

a) Calcium

b) Iron

c) Magnesium

d) None

Correct Answer - B

Ans. is 'b' i.e., Iron [Ref: Iron Metabolism p. 94]

Hemosiderin

- It is hemoglobin derived, golden yellow to brown, granular or crystalline pigment in which form iron is stored in cells.
- When there is local or systemic excess of iron, ferritin forms hemosiderin granules. Thus hemosiderin pigment represents aggregates of ferritin micelles. Under normal conditions small amounts of hemosiderin can be seen in the mononuclear
- phagocytes of the bone marrow, spleen and liver, all actively engaged in red cell breakdown.

187. Gaseous necrosis is seen in -

a) CMV infection

b) Staphylococcal infection

c) Treponemal infection

d) HSV infection

Correct Answer - C

Ans. is 'c' i.e., Treponemal infection [Ref Robbin's 9th ed p. 43; Anderson's 10th ed p. 375]

- Caseous necrosis is a feature of syphilis which is caused by treponemal infection.

Gaseous necrosis

- It is a variant of coagulative necrosis. It is most commonly encountered when cell death is attributable to certain organisms
- e.g., mycobacterium tuberculosis (TB), syphilis and fungi (Histoplasma, Coccidioidomycosis).

188. Brown atrophy is due to accumulation of:

a) Melanin

b) Hemosiderin

c) Hematin

d) Lipofuscin

Correct Answer - D

Lipofuscin REF: Pathology by Edward F. Goljan page 7

The combination of an atrophic heart and lipofuscin accumulation is referred to as brown atrophy. Lipofuscin is a "wear and tear" pigment that commonly deposits within hepatocytes, splenocytes, and myocardial cells

189. Cells which remain in Go phase -

a) Permanent cells

b) Labile cells

c) Intermitotic cells

d) Quiscent cells

Correct Answer - D

Ans. is 'd' i.e., Quiscent cells

Types of cells

based on their proliferative and regenerative capacity, cells are divided into :?

1) Labile cells (continuously dividing cells) or intermitotic cells

- These cells have capacity to proliferate and regenerate throughout the life.
- They always remain in cell cycle and have very short Go-phase (quiescent phase).

2) Stable or quiescent or reversible postmitotic cells

- They have limited capacity to proliferate and regenerate.
- They remain in Go phase of cell cycle but can enter in G1 phase when stimulated i.e., they usually remain quiescent, but proliferate in response to stimuli.

3) Permanent or nondividing or irreversible postmitotic cells

- They cannot divide and regenerate. These cells are nondividing and have left the cell cycle, i.e., they do not belong to any phase of cell cycle.

190. Stem cells are -

a) Labile

b) Stable

c) Permanent

d) None

Correct Answer - A

Ans. is 'a' i.e., Laible [Ref Rubin's p. 64]

- Bone marrow stem cells are labile cells, i.e. Continuous dividing cells.
- Under appropriate conditions, tissues composed of labile cells regenerate after injury, provided that enough stem cells remain.

191. Characteristic of exudative fluid is -

- a) Low protein content
- b) Specific gravity < 1.012
- c) Normal vascular permeability
- d) Cellular debris

Correct Answer - D

Ans. is 'd' i.e., Cellular debris

Types of edema fluid

In edema, the fluid accumulated in interstitial fluid may be either a transudate or an exudate.

- **Exudate** is an inflammatory fluid that contains high protein content, cellular debris, and specific gravity >1.020. It occurs due to increased vascular permeability.
- **Transudate** contains low protein (mostly albumin) with specific gravity < 1.012.
- It is an ultrafiltrate of plasma that results from hydrostatic or osmotic imbalance between intravascular and extravascular compartments despite normal vascular permeability

192. Most important change to occur in irreversible cell injury -

a) Decreased basophilia

b) Pyknosis

c) Accumulation of myelin figures

d) Membrane damage

Correct Answer - D

Ans is 'd' i.e. Membrane damage [Ref Robbins's illustrated 9thle p. 45-47 & 8th/e p. 19]

- Membrane damage is the central pathogenic process in irreversible injury.

193. True about adult autologous stem cell transplant are all except -

a) Used in the treatment of leukemia

b) Stem cells are collected directly from the bone marrow

c) G-CSF is given to expand the number of stem cells

d) It allows high dose of chemotherapy

Correct Answer - B

Ans. is 'b' i.e., Stem cells are collected directly from the bone marrow

Autologous stem cell transplant

- An autologous transplant uses the person's own stem cells. These cells are collected in advance and returned at a later stage.
- They are used to replace stem cells that have been damaged by high doses of chemotherapy, used to treat the person's underlying disease.
- It is an OPD procedure..
- In most cases, stem cells are collected directly from the bloodstream.
- Granulocyte Colony Stimulating Factor (G-CSF) is used to expand the number of stem cells in the marrow and cause them to spill out into the circulating blood.
- Autologous transplants are used to treat a number of different blood cancers - leukaemias lymphomas and myeloma, and certain solid tumours - breast cancer, testicular cancer, osteosarcoma and others.
- Autologous transplants allow the use of high dose chemotherapy and sometimes radiotherapy (k/a condition therapy).
- After the transplant blood counts drop dramatically in the week

following your conditioning therapy.

- Exposing the patient to the risk of infections and bleeding. Antibiotics and other drugs are commonly prescribed to help prevent or treat infections during this time, and platelet transfusions is also given to reduce your risk of bleeding.

194. White infarct is seen in -

a) Lung

b) Intestine

c) Liver

d) Ovary

Correct Answer - C

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

1) Red infarcts (haemorrhagic infarcts) :- It occurs in *ovary (venous occlusion due to torsion)*, lung (loose tissue) and *small intestine*. It has *well defined hemorrhagic red margins* which later become brown.

2) Pale infarct/white infarct (anemic infarct) :- It occurs in solid organs like *heart, spleen, liver, kidney, and brain*. It has *ill defined pale margins*.

195. Diapedesis is -

- a) Immigration of leucocytes through the basement membrane
- b) Immigration of the leucocytes through the vessel wall to the site of inflammation
- c) Aggregation of platelets at the site of bleeding
- d) Auto digestion of the cells.

Correct Answer - B

Ans. is 'b' i.e., Immigration of the leucocytes through the vessel wall to the site of inflammation

- o Diapedesis is the process of transmigration of leukocytes across the endothelium. The most important molecule responsible for diapedesis is called *PECAM-1 (Platelet endothelial cell adhesion molecule) or CD-31.*

196. IL-1 produces:

a) Tlymphocyte activation

b) Delayed wound healing

c) Increased pain perception

d) Decreased PMN release from bone marrow

Correct Answer - A

Answer is A (T lymphocyte activation)

IL-1 in response to injury increases T lymphocyte activation.

It is secreted by phagocytes. It also increases PMN release from bone marrow and its actions include :

- Promotes wound healing.
- Diminishes pain perception.
- Increases body temperature.

197. Centre of tubercular granuloma is formed by -

a) T-lymphocytes

b) B-lymphocytes

c) Langhan's giant cells

d) Necrotic zone

Correct Answer - D

Ans. is 'd' i.e., Necrotic zone [Ref Bobbin's pathology p. 29]

Tubercular granuloma

- Tubercular granuloma contains mostly blood-derived macrophages, epithelioid cells (differentiated macrophages) and multinucleated giant cells (also known as Langhans giant cells), surrounded by T-lymphocytes.
- Caseous granulomas are typical of tuberculosis. These structures are formed by epithelioid macrophages surrounding a central cellular necrotic region with a rim of lymphocytes of the T- and B-cell types.

198. To which of the following family of chemical mediators of inflammation, the Lipoxins belong:

a) Kinin system

b) Cytokines

c) Chemokines

d) Arachidonic acid metabolites

Correct Answer - D

They are derived from arachidonic acid and manufactured in leukocytes by the 15-lipoxygenase pathway.

They are characterized by the presence of three or four conjugated double bonds.

Leukocytes produce two types of lipoxins, lipoxin A 4 (LXA4) and lipoxin B 4 (LXB4).

Eicosanoids: are named so reflecting their origin from the 20-carbon (eicosa-) polyunsaturated fatty acid arachidonic acid (arachidonate) and the 20-carbon derivatives of linoleic and linolenic acids.

There are then three main enzymatic pathways for eicosanoid formation, involving cyclooxygenases (COXs), lipoxygenases (LOs) and enzymes of the cytochrome P-450 family.

- **Cyclooxygenase (COX) Pathway:** The COX pathway (two isoforms denoted COX-1 and COX-2) produces the prostaglandins PGG₂ and PGH₂, which are subsequently converted into further prostaglandins, prostacyclin and thromboxanes (TXs).
- **Lipoxygenase pathway:** The leukotrienes and lipoxins are a group of eicosanoid derivatives formed through the lipoxygenase pathway. They are characterized by the presence of three or four conjugated double bonds, respectively.
- **Cytochrome P450 (CYP) Pathway:** Third eicosanoid pathway cytochrome P450 (CYP) system consists of two main branches: ω -hydroxylases convert arachidonic acid to hydroxyeicosatetraenoic acids (HETEs) and epoxygenases convert it to epoxyeicosatrienoic acids (EETs).

Enzymatic Pathways	Eicosanoid
Cyclooxygenases	Prostaglandins

	Prostacyclin, Thromboxanes
Lipoxygenases	5-HETE, 12-HETE, 15-HETE, Lipoxins, Leukotrienes
CYP monooxygenases	12-HETE, EETs, DHTs

Ref: The Eicosanoids, edited by Peter Curtis-Prior, page 341.

199. Macrophage chemotactic factor is -

a) High molecular weight

b) Chymotrypsin sensitive

c) Heat labile

d) Are antigenically similar to C3

Correct Answer - B

Ans is 'b' i.e., Chymotrypsin sensitive (*Ref Immunology p. 278*)

- Macrophage chemotactic factor properties has Low molecular weight (12000), has a isoelectric points of 10.1 & 5.6, and is sensitive to treatment by chymotrypsin while resistant to RNase and neuraminidase.
- It is heat stable and antigenically different from C3 & C5.

200. The process of phagocytosis was discovered by:

a) Virchow

b) Metchnikoff

c) Koch

d) None of the above

Correct Answer - B

In the 1880s the **Russian biologist Elie Metchnikoff** discovered the process of **phagocytosis** by observing the ingestion of rose thorns by amebocytes of starfish larvae and of bacteria by mammalian leukocytes.

Ref: Robbins 8th edition, Chapter 2.

201. Endogenous chemoattractants are all except ?

a) C5a

b) Integrins

c) LTB4

d) 11, 8

Correct Answer - B
Ans. is 'b' i.e., Integrins

202. Function of IL-4 is -

a) Inhibiting IL-1

b) Chemotaxis

c) Vasodilatation

d) Inhibiting macrophages

Correct Answer - A

Ans is 'a' i.e. Inhibiting IL-1 [Ref Principles of Cancer Biotherapy p.1731

- "In monocytes, IL-4 inhibits IL-1, TNF-alpha and IL-6." - Principles of Cancer Biotherapy p.173.

203. Blood loss in class III hemorrhagic shock

-

a) < 750 ml

b) 750 - 1500 ml

c) 1500-2000 ml

d) > 2000 ml

Correct Answer - C

Ans. is 'c' i.e., 1500-2000 ml [Ref: Textbook of clinical pathology p. 522]

204. Serotonin is secreted by:

a) Thyroid

b) Adrenal cortex

c) Adrenal medulla

d) Argentaffin cells

Correct Answer - D

Serotonin is a vasoconstricting hormone, produced in the brain and GI tract. In the GI tract it is produced normally by enterochromaffin cells (argentaffin cells). The principal function is to regulate smooth muscle contraction and peristalsis.

Serotonin: also called 5-hydroxytryptamine, is a chemical substance that is derived from the amino acid tryptophan.

Principally found stored in three main cell types;

- (a) Serotonergic neurons in the CNS and in the intestinal myenteric plexus,
- (b) Enterochromaffin cells in the mucosa of the gastrointestinal tract and
- (c) Blood platelets

Synthesis:

Serotonergic neurons and enterochromaffin cells can synthesize serotonin from its precursor amino acid L-tryptophan, whereas platelets rely upon uptake of serotonin for their stores. The biochemical pathway for serotonin synthesis initially involves the conversion of L-tryptophan to 5-hydroxytryptophan by the enzyme **L-tryptophan hydroxylase**. This enzyme provides the rate limiting step for serotonin synthesis.

Metabolism of serotonin is carried out primarily by the enzyme monoamine oxidase (MAO), The action of MAO converts serotonin to 5-hydroxyindole acetaldehyde which in turn is readily metabolized by aldehyde dehydrogenase to produce 5-hydroxyindole acetic acid as the major excreted metabolite of serotonin.

Carcinoid syndrome: are neuroendocrine tumours (NETs) of predominantly enterochromaffin cell origin (Kulchitsky cells). Carcinoid syndrome is made up of a constellation of symptoms which are caused by the release of a variety of substances (serotonin, histamine, and substance P, among others) by the carcinoid tumor. It may cause tryptophan deficiency and causes decrease in niacin synthesis leading to pellagra.

Ref: Principles of medical physiology, By Sabyasachi Sicar, Page 641.

205. HLA associated with psoriasis ?

a) HLA-B27

b) HLA-DR4

c) HLA-CW6

d) HLA-B8

Correct Answer - A

ans. is 'a' i.e., HLA B27 [Ref: Various books]

"HLA B27 is also associated with GPP (generalized pustular psoriasis)"

`A link has been found between acute generalized pustular psoriasis and HLA B27."

**206. HLA associated with rhaumatoid arthritis
?**

a) HLA-B27

b) HLA-DR4

c) HLA-CW6

d) HLA-B8

Correct Answer - B
Ans. is 'b' i.e., HLA-DR4

207. Serum sickness is:

a) Type 1 hypersensitivity reaction

b) Type 2 hypersensitivity reaction

c) Type 3 hypersensitivity reaction

d) Type 4 hypersensitivity reaction

Correct Answer - C

Ans: C. Type 3 hypersensitivity reaction

(Ref: Robbins 9/e p207)

- Serum sickness is the prototype of a systemic immune complex disease or type III hypersensitivity reaction.
Immune Complex—Mediated (Type III) Hypersensitivity:
- Acute serum sickness is the prototype of a systemic immune complex disease; it was once a frequent sequela to the administration of large amounts of foreign serum (e.g., serum from immunized horses used for protection against diphtheria).

208. Anti RO [SSA] antibodies are seen in -

a) Subacute cutaneous lupus

b) Myasthenia gravis

c) Systemic sclerosis

d) Mixed connective tissue disorder

Correct Answer - A

Ans. is 'a' i.e., Subacute cutaneous lupus [Ref Robbin 's 9th/e p. 218-218 & 8th/e p. 215]

- Anti-RNP SS-A (Ro), SS-B (La) are seen in neonatal lupus with congenital heart block and in subacute cutaneous lupus.
- These antibodies are associated with decreased risk of lupus nephritis.

209. True about NK cells are all of the following except:
March 2005

a) Mediates type IV hypersensitivity

b) Kill viruses

c) They are large granular lymphocytes

d) Releases small cytoplasmic granules of proteins called perforin and granzyme

Correct Answer - A

Ans. A: Mediates type IV hypersensitivity

NK cells are a type of cytotoxic lymphocyte that constitute a major component of the innate immune system. NK cells play a major role in the rejection of tumors and cells infected by viruses.

They kill cells by releasing small cytoplasmic granules of proteins called perforin and granzyme that cause the target cell to die by apoptosis.

NK cells are defined as large granular lymphocytes (LGL) and constitute the third kind of cells differentiated from the common lymphoid progenitor generating B and T lymphocytes.

They do not express T-cell antigen receptors (TCR) or Pan T marker CD3 or surface immunoglobulins (Ig) B cell receptors but they usually express the surface markers CD16 and CD56 in humans.

Up to 80% of NK cells also express CD8.

They were named "natural killers" because of the initial notion that they do not require activation in order to kill cells that are missing "self" markers of major histocompatibility complex (MHC) class I. Type IV (cell mediated immunity) is mediated by T-cells.

210. Antigen involved in post transplant rejection -

a) HLA - Antigen

b) Nuclear antigen

c) Polysaccharide

d) DHA

Correct Answer - A

Ans. is 'a' i.e., HLA - antigen [Ref Robbin's 5⁰/e p. 231-232 & 8th/e p. 226, 227]

- For rejection of graft, there must be some antigen that is recognized as foreign and the most important antigen is HLA antigen of grafted tissue.

211. Surface Immunoglobulin is found in which cell ?

a) T-cell

b) B-cell

c) NK cell

d) Plasma cells

Correct Answer - B

Ans is b' i.e. B-cell [Ref Robbin's 9thle p. 191 & 8thle p. 187]

- B cells recognize antigen via the B-cell antigen receptor complex.
- Ig M and Ig D, present on the surface of all naïve B cells, constitute the antigen binding component of B-cell receptor complex.
- After antigenic stimulation, B cells form plasma cells that secrete immunoglobulin.

212. HLA 2 is linked with -

a) Graft rejection

b) Graft versus host disease

c) Killing of viral infected cells

d) Susceptibility to autoimmune diseases

Correct Answer - B

Ans. is 'b' i.e., Graft versus host disease [Ref Harrison 18th/e p. 2668-2670 et' 17^h/e p. 2023; Robbin's 9th/e p. 194 & 8^h/e p. 192]

- MHC class I is responsible for graft rejection and cell mediated cytolysis of viral infected or tumor cells.
- MHC-II is responsible for graft versus host response and mixed leukocyte reaction
- MHC-III is involved in susceptibility to autoimmune diseases like SLE.

213. Microcytotoxicity is used for -

a) Tissue typing

b) Drug allergy

c) Infection susceptibility

d) Substance toxicity

Correct Answer - A

Ans. is 'a' i.e., Tissue typing [Ref Internet]

- A micro-cytotoxicity assay, utilizes serum with known anti-HLA antibodies that recognize particular HLA loci (HLA-A, HLA-B, HLA-C, HLA-DP, HLA-DQ, HLA-DR) in order to match genetically similar individuals in hopes of performing a tissue transplantation.
- In this technique a donor's blood cells are MHC typed by mixing them with serum containing the anti-HLA antibodies.
- If the antibodies recognize their epitope on the MHC then complement activation occurs and the cell will be osmotically lysed.
- Another technique of tissue typing, "mixed leukocyte reaction", is performed by culturing lymphocytes from the donor together with those from the recipient.
- It tests cell mediated response against the tumor cells.

214. Degenerated neurofilaments seen in patients with Alzheimer's disease are:

a) Hirano bodies

b) Lipofuscin granules

c) Neurofibrillary tangles

d) Amyloid plaques

Correct Answer - C
Neurofibrillary tangles

215. Defective chromosome associated with De-George syndrome is -

a) 7

b) 15

c) 17

d) 22

Correct Answer - D

Ans. is 'd' i.e., 22 [Ref Robbin's 9th p. 163 & 8th/e p. 162]

- This syndrome encompasses a spectrum of disorders that result from a small deletion of *band q 11.2 on long arm of chromosome 22*.

Clinical features are considered to represent two different disorders :-

1) Di George syndrome

- These patients have thymic hypoplasia with resultant T-cell immunodeficiency.
- Other features include parathyroid hypoplasia (causing hypocalcemia), cardiac malformations & facial anomalies.
- TBX-1 gene (a T-box transcription factor) is most closely associated with this syndrome.
- The target of TBX-1 include PAX 9, a gene that controls the development of the palate, parathyroid and thymus.

2) Veto cardio facial syndrome

- This syndrome is characterized by facial dysmorphism (prominent nose, retrognathia), cleft palate, cardiovascular anomalies, and learning disabilities.

216. Mutation in p53 gene is associated with which malignancy ?

a) Endometrial carcinoma

b) Retinoblastoma

c) Colorectal carcinoma

d) Prostate cancer

Correct Answer - C

Ans. is 'c' i.e., Colorectal carcinoma [Ref Robbin's 9th/e p. 814 & 8th/e p. 825]

- P53 mutations associated with breast, colorectal, liver, lung, and ovarian cancer.

217. Rb gene is located on which chromosome?

a) 6

b) 9

c) 13

d) 21

Correct Answer - C

Ans. is 'c' i.e.,13 [Ref Robbin's 9thVe p. 290]

- Retinoblastoma gene (RB gene) is located on 14 band on the long arm of chromosome 13 (13q14). RB gene is a tumor suppressor gene.
- Retinoblastoma develops when both the normal alleles of the RB genes are inactive or altered. It is typical example of Knudson's two hit hypothesis.

218. Non sense mutation is seen in -

a) AIHA

b) Thalassemia

c) Sickle cell anemia

d) Hemophilia

Correct Answer - B

Ans. is 'b' i.e., Thalassemia [Ref Robbin's ^{9th}-e p 141 & 8th/e p. 141-142]

- Nonsense mutation is seen in beta-thalassemia, cystic fibrosis, Duchenne muscular dystrophy and Hurler syndrome.

219. Gene not associated with Diabetes malitus -

a) PPARy

b) KCNJ11

c) CTLA4

d) PDGF-R

Correct Answer - D

Ans is 'd' i.e. PDGF-R [Ref Various books & internet]

- PDGF-R gene is associated with glioma.

Gene	locus
HLA-DQB1/IDDM1	6p21.3
INS (insulin)	11p15. 5
CTLA4 (cytotoxic T lymphocyte-associated 4)	2q31-35

220. Microscopic picture of seminoma Testis -

a) Sheets of lymphocytes in homogenous background

b) Glandular with papillary outgrowth

c) Dermoid elements

d) Hyperchromatic nuclei in eosinophilic cytoplasm

Correct Answer - A

Ans. is 'a' i.e., Sheets of lymphocytes in homogenous background

221. PTEN gene mutation is seen in -

a) Ovarian carcinoma

b) Li - Fraumani syndrome

c) Endometrial carcinoma

d) MEN2A

Correct Answer - C

Ans is 'c' i.e. Endometrial carcinoma [Ref: Robbin's 9th/e p. 298 & 8th le p. 287]

- PTEN is a tumor suppressor gene which is implicated in the causation of endometrial and prostate carcinoma
- About other options**
- Ovarian carcinoma - BRCA2
 - Li - Fraumani syndrome - p53
 - MEN2A - RET.

222. Carcinoma with no or minimal metastasis -

a) Squamous cell carcinoma

b) Basal cell carcinoma

c) Melanoma

d) Leydig's cell carcinoma

Correct Answer - B

Ans. is 'b' i.e., Basal cell carcinoma [Ref Atlas of Diagnostic Oncology p.452]

- "Basal cell carcinoma can be locally destructive, but only exceptional reports of cases with metastatic behavior exist in literature."

223. N-MYC amplification is associated with which tumor?

a) Burkitt lymphoma

b) Squamous cell carcinoma lung

c) Astrocytoma

d) Neuroblastoma

Correct Answer - D
Ans. is 'd i.e., Neuroblastoma

224. Epithelioid hemangioendothelioma of nose is

a) Carcinoma

b) Sarcoma

c) Carcinosarcoma

d) Hamartoma

Correct Answer - B

Ans. is 'B' i.e., Sarcoma

- Soft tissue sarcoma arise from mesenchyme, like muscles (myoma), endothelial cells (endothelioma) and cartilage (chondroma)
- Epithelioid hemangioendothelioma (EHE) is a soft tissue sarcoma.
- It arises from distinct type of endothelial cells which exhibit epithelioid morphology.

225. Most common carcinoma is associated with IVC metastasis

a) Small cell carcinoma lung

b) Gastric adenocarcinoma

c) Renal cell carcinoma

d) Papillary carcinoma thyroid

Correct Answer - C

Ans is 'c' i.e. Renal cell carcinoma [Ref Current Therapy in Vascular and Endovascular Surgery p. 948]

- The one of the striking characteristics of RCC is to invade renal vein and metastasize into IVC.

Through blood

- Renal cell carcinoma
- Pheochromocytoma
- Adrenocortical carcinoma
- Uterine sarcomas (Lemmyomatosis, endometrial stromal cell sarcoma)
- Germ cell tumors (embryonal, teratocarcinoma)

Direct invasion

- Retroperitoneal soft tissue tumors (hposarcoma, leipmyosarcoma, malignant fibrous histiosarcoma)
- Hepatic tumors (cholangiocarcinoma, HCC)
- Pancreaticodudenal tumor.

226. Not a specific tumor marker is -

a) CD 99

b) HMB 45

c) β - globulin

d) CEA

Correct Answer - D

Ans is 'd' i.e., CEA [Ref Chandrasoma Taylor 3rded. 298-296; Robbin's 8th/e p. 327]

- Carcinoembryonic antigen (CEA) is used as tumor marker for colorectal cancer (major use), lung cancer, breast cancer and ovarian cancer.
- It is also increased in non-neoplastic conditions like alcoholic cirrhosis, hepatitis, IBD (CD, UC), smoking and pancreatitis.
- CEA lacks sensitivity as well as specificity, hence cannot be used to confirm the diagnosis.

About other options

- CD 99 - specific marker for Ewing's sarcoma
- HMB 45 - specific marker for malignant melanoma
- β - globulin - specific marker for multiple myeloma

227. Substance playing a role in tumor metastasis cascade is

a) Collagenase IV

b) TNF-alpha

c) CD99

d) NM23

Correct Answer - A

Ans is 'a' i.e. Collagenase IV

Various steps of metastasis and molecules involved

1. Detachment of tumor cells - Down regulation of expression of either E-cadherins or catenins
2. Attachment to ECM (including basement membrane) - Tumor cells express integrins that helps in the attachment.
3. Degradation of ECM - proteolytic enzymes (most important proteases are metalloproteinases (MMPs) including collagenase IV).
4. Vascular dissemination and homing of tumor cells - Among adhesion molecule CD44 is of particular interest.

228. Marker for pancreatic non-functional neuro-endocrine tumor [PNET] is

a) Chromogranin-A

b) CD100

c) CEA

d) PSA

Correct Answer - A

Ans is 'a' i.e. Chromogranin-A [Ref Neuroendocrine Tumors p. 33]

- Chromogranin-A (CgA) is a glycoprotein used commonly as a tumor marker in histopathology but also has elevated circulating levels in patients with both functional and non-functional PNETs.
- Other markers for PNETs - pancreatic polypeptide (PPP), pancreastatin, and neuron-specific enolase (NSE).

229. Molecular study is important in the management of which malignancy?

a) Multiple myeloma

b) Renal cell carcinoma

c) Seminoma

d) Basal cell carcinoma

Correct Answer - A

Ans. is 'a' i.e., Multiple myeloma [Ref: Hemostatic Disorders p. 26]

Molecular study is useful in the following cancers

- Multiple myeloma
- Prostate cancer
- Myelodysplastic/myeloproliferative disorders
- Soft tissue sarcoma
- Neuroblastoma
- Systemic mastocytosis
- Ovarian epithelial/fallopian tube/primary peritoneal cancers
- Thyroid cancer

230. BRACI is not associated with

a) Ovarian carcinoma

b) Breast carcinoma

c) Endometrial carcinoma

d) Fallopian tube cancer

Correct Answer - C

Ans is 'c' i.e. Endometrial carcinoma [Ref Robbin's 9th/e p. 298 & 8th/e p. 287]

- BRCA-1 or BRCA-2 are commonly associated with - Carcinomas of ovary and breast.
- Less commonly BRCA-2 is also associated with 4 Carcinomas of colon, prostate and pancreas.

231. Fibrinoid necrosis with neutrophilic infiltration is seen in ?

a) PAN

b) Giant cell arteritis

c) Takayasu arteritis

d) Wegener's granulomatosis

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

232. Antishkow's cells are seen in

a) Rheumatic heart disease

b) Rheumatic arthritis

c) Bacterial endocarditis

d) Marantic endocarditis

Correct Answer - A

Ans. is 'a' i.e., Rheumatic heart disease [Ref Robbin's 9th le p. 558 & 8th/e p. 565]

- Anitschkow (or Anichkov or caterpillar) cells are often cells associated with rheumatic heart disease.
- Anitschkow cells are enlarged macrophages found within granulomas (called Aschoff bodies) associated with the disease.
- Aschoff bodies (Aschoff nodules) are characteristic inflammatory lesions of acute rheumatic fever found in any of the three layers of heart, but mostly seen in myocardium (myocarditis).
- They consist of foci of collagen surrounded by following cells : Lymphocytes (especially T-cells), plasma cells, aschoff giant cells, antischkow cells, histiocytes and fibroblasts. Neutrophils (polymorphonuclear cells) are characteristically absent.

233. Factor IX deficiency results in increased

a) PT [Prothrombin Time]

b) PTT [Partial thromboplastin time]

c) BT [Bleeding Time]

d) TT [Thrombin time]

Correct Answer - B

Ans. is 'B' i.e., PTT (Partial thromboplastin time) [Ref: Robbin's 9th/e p. 118; Harrison's 17th/e p. 363,364; Ganong 23rd/e p. 533; Harsh Mohan 6th/e p 330]

- Partial thromboplastin time (PTT) :It tests the intrinsic and common coagulation pathways. So, a prolonged PTT can
- results from deficiency of factor V, VIII (factor VIIIc, Von willebrand factor), IX, X, XI, XII, prothrombin or fibrinogen.
- Prothrombin time (PT) :It tests the extrinsic and common coagulation pathways. So, a prolonged PT can results from deficiency of factor V, VII, X, prothrombin or fibrinogen.
- Thus in common coagulation pathway defect both PT and PTT are elevated.
- Activated clotting time (clotting time) :It also tests the intrinsic and common coagulation system. So it is prolonged in deficiency of same factors as for prolonged PTT

234. Leiden mutation is

a) Non sense mutation

b) Mis-sense mutation

c) Frame shift mutation

d) Tri nucleotide repeat mutation

Correct Answer - B

Ans. is 'b' i.e., Mis-sense mutation [Ref Disorders of Thrombosis and Hemostasis p.289]

- Factor V Leiden (FVL) mutation is a mis-sense type of point mutation in the gene for clotting factor V. As a missense substitution of base G to base A, it changes the protein's amino acid from arginine to glutamine.
- It has autosomal dominant inheritance and is the most common cause of inherited thrombophilia.
- Factor V is one of the essential clotting factors in the coagulation cascade.
- FVL mutation causes activated protein C resistance, hence leading to the hypercoagulable state.
- It is associated with increased risk of DVT & recurrent miscarriages

235. Blood group antigens chemically are

a) Carbohydrate

b) Glycoprotein

c) Phospholipids

d) Polysaccharide

Correct Answer - B

Ans is 'b' i.e., Glycoprotein [Ref Harrison 18th/e p. 951]

- The ABO antigens are determined to be glycoproteins and glycolipids.

236. A 15 year old girl presented with weakness for 2 months. On examination she had pallor and icterus. Spleen was palpable. Lab examination findings are increased MCV, reduced MCHC, reticulocystosis. Osmotic fragility test is positive and Coomb's test is negative. Diagnosis is

a) Iron deficiency anemia

b) AIHA

c) G-6-PD deficiency anemia

d) Hereditary spherocytosis

Correct Answer - D

Ans is 'd' i.e. Hereditary spherocytosis

- Icterus, pallor, palpable spleen, reticulocystosis all are indicating towards hemolytic anemia.
- In AIHA Coomb's test is positive .
- In G-6-PD deficiency osmotic fragility is not affected.
- All the findings in the case positive in Hereditary spherocytosis.
- Iron deficiency anemia shows reduced MCV and MCHC. Osmotic fragility is reduced in case of iron deficiency

237. Increase in MCHC is associated with

a) Iron deficiency anemia

b) Megaloblastic anemia

c) Anemia of chronic disease

d) Hereditary spherocytosis

Correct Answer - D

Ans is 'd' i.e. Hereditary spherocytosis [Ref Robbin's 9th 1e p. 633 & 8th/e p. 643]

- Mean cell hemoglobin concentration (MCHC) is the average concentration of hemoglobin in a given volume of packed red blood cells, expressed in grams per deciliter. Normal value is 33-37 gm/dl
- MCHC is increased in hereditary spherocytosis, not because of increased hemoglobin, but due to decrease volume of spherocytes.
- MCHC is decreased in microcytic hypochromic anemia(iron deficiency anemia & anemia of chronic disease).
- MCHC remains normal in megaloblastic anemia.

238. DIC is common in which AML -

a) Nonocytic (**M₅**)

b) Promyelo cytic (**M₃**)

c) Erythrocytic (**M₆**)

d) Megakaryocytic (**M₇**)

Correct Answer - B

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

- Tumor cells in acute promyelocytic leukemia (M₃) release procoagulant and fibrinolytic factors that cause disseminated intravascular coagulation (DIC).

239. ALL -L3 resembles

a) Mantle cell lymphoma

b) MDS

c) Burkitt's lymphoma

d) AML

Correct Answer - C

Ans. is 'c' i.e., Burkitt's lymphoma [Ref O.P. Ghai 6th le p. 562; Robbin's 7th/e p. 677]

- Acute lymphoblastic leukemia (ALL) encompasses a group of neoplasms composed of immature, precursor B (Pre-B) or T (Pre-T) lymphocytes referred to as lymphoblast.
- Cellular classification :- French-American-British (FAB) system divides ALL into three morphological subtypes :?
 1. L1 lymphoblasts : It is most common type and has better prognosis. Cells have scanty cytoplasm and inconspicuous nuclei.
 2. L2 lymphoblasts : Cells are large and more pleomorphic in size with abundant cytoplasm and prominent nucleus.
 3. L3 lymphoblasts : It is least common type. It is identical to Burkitt's lymphoma, i.e. Mature B-cells.

240. Owl' eye nucleus is seen in which type of lymphoma?

a) Non- Hodgkin's lymphoma

b) Hodgkin's lymphoma

c) Burkitt's lymphoma

d) Cutaneous T-cell lymphoma

Correct Answer - B

Ans is 'b' i.e., Hodgkin's lymphoma [Ref Robbin's 9¹'M p. 607 & 8th/e p. 617]

- "Owl's eye" appearance of entire nucleus is seen in Reed-Sternberg cells.
- Reed-Sternberg cells are giant cells with multinucleated or have a bibbed nucleus with prominent eosinophilic inclusion-like nucleoli (thus resembling an "owl's eye" appearance). These are positive for CD 15 and CD 30, and also PAX-5 (B-cell transcription factor).
- Hodgkin's disease is characterized by presence of Reed-sternberg cells (Classical Reed-sternberg cells) and its variants.
- They can also be found in reactive lymphadenopathy (such as infectious mononucleosis immunoblasts which are RS like in appearance], carbamazepine associated lymphadenopathy) and very rarely in other types of non-Hodgkin lymphomas. Anaplastic large cell lymphoma may also show RS like cells.

241. Pancoast tumor is

a) Superior sulcus tumor

b) Inferior sulcus tumor

c) Median sulcus tumor

d) None of the above

Correct Answer - A

Ans. is 'a' i.e., Superior sulcus tumor [Ref Clinical Scenarios in Surgical Oncology p. 39]

- It is a *tumor of the pulmonary apex* typically found in conjunction *with a smoking history*. It is situated at the top end of either the right or left lung.
- Most Pancoast tumors are non-small cell cancers i.e. squamous cell carcinomas (SCCs) or adenocarcinomas.

242. Feature of shock lung is

a) Diffuse alveolar damage

b) Usual interstitial pneumonitis

c) Organizing pneumonia

d) Bronchiolitis

Correct Answer - A

Diffuse alveolar damage [*Ret Harrison 17⁶/e p. 1680-1681;*
Robbin's 7^{1h}/e p. 715] Repeat from May 2008

243. Classic form of Alport syndrome is inherited as:

a) X-linked

b) Autosomal recessive

c) Autosomal dominant

d) Sporadic

Correct Answer - A

Classic Alport syndrome is inherited as an X-linked disorder.

Reference:

Harrisons Principles of Internal Medicine, 18th Edition, Page 3213

244. Ballooning degeneration of hepatocytes is characteristically seen in:

a) Acute hepatitis

b) Chronic hepatitis

c) Cirrhosis

d) All of the above

Correct Answer - A

With acute hepatitis hepatocyte injury takes the form of diffuse swelling (“ballooning degeneration”), so the cytoplasm looks empty and contains only scattered eosinophilic remnants of cytoplasmic organelles.

Ref: Robbins 8th edition Chapter 18.

245. Hurthle cells seen in ?

a) Papillary carcinoma

b) Hashimoto Thyroiditis

c) Granulomatous thyroiditis

d) Thyroglossal cyst

Correct Answer - B

Ans. is 'b' i.e., Hashimoto Thyroiditis

Pathological features of Hashimoto's thyroiditis

1. Gross features

- *Diffuse symmetrically enlarged thyroid*
- Although the gland is symmetrically enlarged, the accentuation of lobulations may make the gland appear lobular on gross examination.
- *Capsule is intact*
- Cut surface is pale, yellow firm and lobulated.

2. Microscopic features

- *Atrophy of thyroid follicles (atrophic follicles)*
- *Extensive lymphoplasmocytic infiltrate with abundant small lymphocytes and plasma cells with destruction of follicles.*
- *Oncocytic metaplasia (Hurthle cell metaplasia)* → The surviving follicular epithelial cells are commonly transformed into large cells with abundant pink cytoplasm and are known as *Hurthle cells*.
- *Oncocytic metaplasia (Hurthle cell metaplasia)* is also known "*oxyphilic change*" in epithelial cells and is considered the *hallmark of Hashimoto's thyroiditis*.
- Varying degree of fibrosis and foci of squamous metaplasia within atrophic follicles.
- Interstitial connective tissue is increased and may be abundant.

246.

In pheochromocytoma, not a part the rule of 10 is

a) 10% are bilateral

b) 10% are malignant

c) 10% are extra adrenal

d) 10% are symptomatic

Correct Answer - D

Ans is 'd' i.e. 10% are symptomatic [Ref Robbin's 9th/e p. 1134 & 8th/e p. 524-525]

- Pheochromocytomas usually subscribe to a convenient "rule of 10" or "10% tumor"; i.e. 10% of pheochromocytomas are :-
 1. Bilateral
 2. Extra-adrenal
 3. Familial
 4. Malignant
 5. Multiple
 6. Occur in children

247. Sipple syndrome is also known as:-

a) MEN 1

b) MEN 2a

c) MEN 2b

d) None of the Above

Correct Answer - B

Answer is B (MEN 2a):

Sipple syndrome refers to MEN Type-IIA

248. Not associated with arrhenblastoma

a) CD56

b) Call Exner bodies

c) Sex cord stromal tumor

d) Muscularising tumor

Correct Answer - B

Ans. is 'b' i.e., Call Exner bodies [Ref Robbin's 9th/e p. 1032 et' 8th le p. 1050]

- Call-Exner bodies are seen in Granulosa-theca cell tumors (granulosa cell tumors).
- An arrhenoblastoma is a rare *muscularizing ovarian tumor*, which primarily secretes the male sex hormone, testosterone, and rarely the female sex hormone, estrogen. It is a member of the *sex cord-stromal tumor* group. Arrhenoblastomas are generally benign.
- Blood level of hormone (including testosterone, DHEA, CD56, and progesterone levels) are high.

249. Which skin tumor is k/a "Turban tumor" ?

a) Basal cell carcinoma

b) Squamous cell carcinoma

c) Cutaneous cylindroma

d) Dermatofibroma

Correct Answer - C

Ans. is 'c' i.e., Cutaneous cylindroma [Ref Tumors of skin p. 55]

- In dermatologic pathology, a dermal cylindroma, also dermal eccrine cylindroma) and (less specifically) cylindroma, is a benign adnexal tumor, which occurs on the scalp and forehead.
- Multiple cylindromas may grow together in a "hat-like" configuration, sometimes referred to as a turban tumor.

250. Cells seen in cutaneous T cell lymphoma are called

a) Councilman bodies

b) Barr bodies

c) Sezary cells

d) Dohle bodies

Correct Answer - C

Ans is 'c' i.e. Sezary cells

[Ref Pathology and Genetics of Tumours of Haematopoietic and Lymphoid Tissues p. 219]

- Sezary cells (pleomorphic abnormal T cell with the characteristic cerebriform nuclei) are characteristic feature of Sezary syndrome (late stage of cutaneous T cell lymphoma).

251. True about hypertrophic scar

a) No genetic predisposition

b) More common in blood group A

c) No HLA association

d) Predominantly collagen type 4

Correct Answer - B

Ans is 'b' i.e. More common in blood group A [Ref IADVL text book of dermatology 3rdie p. 1179-80]

Etiology of hypertrophic scars

- They follow damage to deep dermis
- Autosomal dominant with incomplete inheritance.
- Associated with HLA B14, B21, Bw16, Bw35, DR5 & DQw3.
- They are more common in people with 'A' blood group.

Pathophysiology

- High level of production of collagen, elastin, fibronectin, proteoglycan & hyaluronic acid by fibroblast.
- Collagen produced is predominantly type I.
- There is increased level of TGF- β 1, P2, activin A, IFN- α & γ , plasminogen activator inhibitor 1(PAI1) & low level of urokinase
- IL-6 plays a key role in keloid formation.

252. Most common site of rhabdomyosarcoma is?

a) Orbit

b) Nasopharynx

c) Extremities

d) Hypopharynx

Correct Answer - A

Orbit REF: Sabiston 18th ed chapter 71

The most common primary sites for RMS are the head and neck (parameningeal, orbit, pharyngeal), the genitourinary tract, and the extremities

Rhabdomyosarcoma is the most frequent soft tissue sarcoma in the pediatric population and is the most common sarcoma occurring in the head and neck. Excluding the orbit, the most common site in the head and neck is the nasopharynx.

253. Clara cells are seen in -

a) Alveoli

b) Bronchus

c) Trachea

d) Bronchiole

Correct Answer - D

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

Clara cells are small dome shaped cells present in terminal bronchiole

o They secrete a protein that lines the small air passages.

254. Cell membrane is damaged by

a) Hydroxyl ion

b) Hydroxyl radical

c) Nitric oxidase

d) Superoxide anion

Correct Answer - B:D

Ans. is `b > d' i.e., Hydroxyl radical > Superoxide anion

- Both hydroxyl radical and superoxide anion are free radicals and can cause membrane damage.
- But, hydroxyl radical is the most reactive and damaging free radical.
- "The hydroxyl radical is the most reactive and damaging reactive oxygen species" — Clinical biochemistry
- "The hydroxy radical is involved in free radical associated membrane damage".

**255. All have high first pass metabolism
except ?**

a) Lidocaine

b) Propranolol

c) Theophylline

d) Morphine

Correct Answer - C
Ans. is 'c' i.e., Theophylline

256. Most common phase-2 reaction

a) Glucuronide conjugation

b) Acetylation

c) Methylation

d) Sulfate conjugation

Correct Answer - A

Ans. is'a'i.e., Glucuronide conjugation

Ref: KDT Vh/e p. 24

- Most important metabolizing reaction, overall

257. Glaucoma drug which is β -1 selective β -blocker is ?

a) Timolol

b) Labetolol

c) Carteolol

d) Betaxolol

Correct Answer - D

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

o Among the given options, only betaxolol is β -1 selective.

258. Beta blocker with d isomer responsible for beta blocker action is ?

a) Nebivolol

b) Timolol

c) Esmolol

d) Propranolol

Correct Answer - A

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

Nebivolol is a novel beta-blocker with a greater degree of selectivity for beta₁-adrenergic receptors than other agents in this class and a nitric oxide (NO)-potentiating, vasodilatory effect that is unique among beta-blockers currently available to clinicians. Nebivolol is a racemic mixture with beta-blocker activity residing in the d-isomer; in contrast, l-nebivolol is far more potent in facilitating NO release.

Note :

- Beta blockers with 1 isomer having beta blocking activity are :?
- Propranolol, atenolol, metoprolol, esmolol, timolol

259. Muscarinic receptors on blood vessel endothelium cause

a) Vasodilatation through acetylcholine

b) Vasodilatation through NO

c) Vasoconstriction through acetylcholine

d) Vasoconstriction through endothelium

Correct Answer - B

Ans. is 'b' i.e., Vasodilatation through NO

[Ref; KDT 7/e p. 103]

- No direct cholinergic supply is present in blood vessels.
- But cholinergic receptor (M, types) are present on blood vessels endothelium.
- Stimulation of these receptors causes release of EDRF (NO) from endothelium resulting in vasodilatation.

260. Drug used for Urinary incontinence [like Oxybutynin] in Neurogenic Bladder acts on which cholinergic receptors:

a) M1

b) M2

c) M3

d) M4

Correct Answer - C

Ans: C. M3

- Cholinergic system stimulates detrusor and relaxes the trigone) → Increased micturation (M3 receptor).
- Selective M3 blockers:**
- Oxybutynin, Darifenacin, Solifenacin, Tolterodine):
 - Blocks M3 receptors in urinary bladder - Used in urinary incontinence.

261. Which of the following is beta-blocker antagonist

a) Glucagon

b) Neostigmine

c) Amibenonium

d) All of the above

Correct Answer - A

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

- Glucagon is used in beta-blocker poisoning to combat bradycardia produced by b-blockers. Glucagon acts by increasing C-GMP in myocardium, in effect bypassing p-receptors)
- Action is independent of beta receptors.

262. Digitalis produces which of the following changes in ECG ?

a) Tall T waves

b) ST segment elevation

c) Prolonged QT interval

d) Prolonged PR interval

Correct Answer - D

Ans. is 'd' i.e., Prolonged PR interval

There are some characteristic ECG changes by digitalis use, some of which occur at therapeutic concentration and some occurs at toxic level :

At therapeutic level

- Prolongation of PR interval
- Scooping of ST segment → Also known as *digitalis wave* or *dig sag* there is down sloping ST depression (initially)
- Shortening of QT interval
- Decreased T wave amplitude/or T wave inversion

At toxic level: Above changes are amplified

- Prolongation of PR interval → conduction block may occur
- T wave inversion
- ST depression
- QT interval shortens further
- Increased automaticity → Arrhythmias

263. Which drug directly stimulates contraction of cardiac muscle

a) Digitalis

b) ACE inhibitors

c) Nesiritide

d) Losartan

Correct Answer - A

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

[Ref: KDT 7/e p. 512]

- Cardiac glycosides (digitalis) act directly on the heart to increase the force of contraction.

264. Which of the following diuretics acts on nephron through interstitium

a) Thiazide

b) Furosemide

c) Acetazolamide

d) Spironolactone

Correct Answer - D

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

(Ref: KDT Vh/e p. 587)

- Spironolactone is mineralocorticoid (aldosterone) antagonist. It opposes the action of Aldosterone without requiring access to the tubular lumen.
- Spironolactone (as well as aldosterone) act from the interstitial side.

265. Mexiletine is an oral active congener of

a) Dopamine

b) Lidocaine

c) Dobutamine

d) levodopa

Correct Answer - B

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

Ref: Clinical pharmacology 3'd/e p. 501; KDT Vhle p. 531

- Mexiletine is an orally active congener of lidocaine.
- It is a local anaesthetic and an orally active antiarrhythmic; chemically and pharmacologically similar to lidocaine.

266. Drug effective in Tardive dyskinesia

a) Central anticholinergic

b) Dantroline

c) Succinylcholine

d) Terabenazine

Correct Answer - D

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

[Ref: Clinical Pharmacology Ip. 108; www.ncbi.nlm.nih.gov]

- There is currently no satisfactory treatment for tardive dyskinesia other than discontinuation of drug.
- Tetrabenazine (TBZ) is currently considered as a first line and most effective medication for treatment of persistent and disabling tardive dyskinesia.
- Reserpine is an alternative to tetrabenazine.

267. Droperidol is used as

a) Antipsychotic

b) Antiemetic

c) Neurolept analgesia

d) All of the above

Correct Answer - D

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

[Ref Clinical Pharmacology 3'd/ep. 633]

- Droperidol is D2 antagonist which is used as : -
- Typical antipsychotic (neuroleptic)
- Antiemetic
- Neuroleptanalgesia (along with fentanyl)

268. Drug of choice for generalized anxiety ?

a) 3-blocker

b) Alprazolam

c) Buspirone

d) Phenytoin

Correct Answer - B

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

Treatment of generalized anxiety

- *Benzodiazepines are the drug of choice.* Drugs in this group are diazepam, Lorazepam, Alprazolam, Oxazepam, chlordiazepoxide.
- Other drugs used are buspirone; TCA (amprtiptyline, imipramine, clomipramine, desipramine); SSRIs (Fluoxetine, Sertaline, Paroxetine, Citalopram); SNRIs (Venlafaxine), 13-blockers.
- Anticonvulsants with GABAergic properties may also be effective against anxiety, e.g., Gabapentin, Oxcarbazepine, Tiagabine, pregabalin, and Valproate (divalporex).

**269. DOC for drug (phenothiazine) induced parkinsonism:
*March 2013***

a) Levodopa

b) Benserazide

c) Benzhexol

d) Selegiline

Correct Answer - C

Ans. C i.e. Benzhexol

Trihexyphenidyl/Benzhexol

- It is used for the symptomatic treatment of Parkinson's disease in mono- and combination therapy.
- It is active in postencephalitic, arteriosclerotic, and idiopathic forms.
- The drug is also commonly used to treat extrapyramidal side effects occurring during antipsychotic treatment.
- It reduces the frequency and duration of oculogyric crises as well as of dyskinesic movements and spastic contractions.
- Excessive salivation may also respond.
- Trihexyphenidyl may improve psychotic depression and mental inertia frequently associated with Parkinson's disease and symptomatic problems caused by antipsychotic treatment.
- The drug cannot cure Parkinson's disease, but may provide substantial alleviation of symptoms.
- To increase therapeutic activity trihexyphenidyl is often given concomitantly with levodopa, other antimuscarinic or antihistaminic (e.g. diphenhydramine) agents.

270. Vigabatrine is drug of choice for

a) Febrile seizures

b) Myoclonic epilepsy

c) Infantile spasm

d) Partial seizures

Correct Answer - C

Ans. is'c'i.e., Infantile spasm

Ref: Harrison 18n/e p. 3262, 3266

- Vigabatrin is DOC for infantile spasm.

271. Terlipressin is preferred over vasopressine for esophageal varices because of

a) Faster acting

b) Not metabolized

c) Less side effects

d) More potent

Correct Answer - C

Ans. is 'c' i.e., less side effects

[Ref: KDT 7h/e p. 597]

Terlipresin is preferred over vasopressin because : -

- Fewer adverse effects
- Greater convenience in use

272. Lactation is suppressed by

a) Metaclopramide

b) Opioids

c) Apomorphine

d) Haloperidol

Correct Answer - C

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

Ref : Clinical Pharmacology 3'd/e p. 799

Important drugs inhibiting lactation are : -

- Dopamine
- Bromocriptine
- Cabergoline
- Apomorphine

273. Incretin like function is seen in ?

a) Exenatide

b) Miglital

c) Poiglitazone

d) Repaglinide

Correct Answer - A

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

- Exenatide is a synthetic glucagon-like peptide - 1 (GLP-1) analogue.
- GLP-1 is an important incretin that is released from gut in response to oral glucose.
 - But GLP-1 can not be used clinically as it is degraded rapidly by enzyme dipeptidyl peptidase → (DPP-4).
- Exenatide is resistant to DPP-4.
- It acts similar to GLP-1 → Enhancement of postprandial insulin release, suppression of glucagon release and appetite as well as slowing of gastric emptying.
- It is given by subcutaneous route & used in type 2 DM
- Nausea is most important side effect.

274. Mechanism of action of allopurinol: *September 2005*

- a) Inhibits the synthesis of uric acid
- b) Inhibits tubular resorption of uric acid
- c) Antinflammatory action
- d) Increases phagocytosis of urate crystals

Correct Answer - A

Ans. A: Inhibits the synthesis of uric acid

Allopurinol is a structural isomer of hypoxanthine (a naturally occurring purine in the body) and is an enzyme inhibitor, inhibiting xanthine oxidase.

Xanthine oxidase is responsible for the successive oxidation of hypoxanthine and xanthine resulting in the production of uric acid, the product of human purine metabolism.

In addition to blocking uric acid production, inhibition of xanthine oxidase causes an increase in hypoxanthine and xanthine, which are converted to closely related purine ribotides adenosine and guanosine monophosphates.

Increased levels of these ribotides cause feedback inhibition of amidophosphoribosyl transferase, the first and rate-limiting enzyme of purine biosynthesis.

Allopurinol therefore decreases both uric acid formation and purine synthesis.

275. Drug used for bleeding GI varices

a) Demeclocycline

b) Desmopressin

c) Terlipressin

d) Leuprolide

Correct Answer - C

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

- Terlipressin (analogue vasopressin) is considered the vasoactive agent of choice for acute variceal bleeding.
- Other drugs used are somatostatin and its analogue octreotide.

276. Which hypolipidemic drug acts primarily by decreasing VLDL -

a) Fibrates

b) Nicotinic acid

c) Statins

d) Cholestyramine

Correct Answer - A

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

Ref: KDT 6h/e p. 614; Harrison 18th/e ch. 356

- Fibrates (e.g. clofibrate) activate lipoprotein lipase, therefore, enhance lipolysis of triglycerides in VLDL.
- Statins and nicotinic acid also decrease VLDL but it is not their main mechanism of action.

277. True about iron administration

a) Iron-sorbitol-citric acid is given IV

b) Iron-dextran binds to transferrin

c) Iron-dextran is not excreted

d) Iron-dextran has low molecular weight

Correct Answer - C

Ans. is 'c' i.e., Iron-dextran is not excreted.

Ref: KDT 11th/e p. 572

278. PPIs are use used in

a) ZE syndrome

b) NSAIDs induced peptic ulcer

c) Gastroesophageal reflux

d) All of the above

Correct Answer - D

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

[Ry' KDT Vh/e p. 652]

- PPI are the DOC for peptic ulcer (gastric or duodenal), GERD, ZE syndrome, prevention of aspiration pneumonia and NSAID induced gastric / duodenal ulcers. Note - PGEI analogue (Misoprostol) is specific drug for prevention and treatment of NSAID induced ulcer, but DOC is PPI.

279. Use of anticoagulant is

a) Venous thrombosis

b) Arterial thrombosis

c) Vitamin K toxicity

d) Heart failure

Correct Answer - A

Ans. is'a'i.e., Venous thrombosis

Ref : Katzung /e p. 599; I\$hle p. 554

Prophylaxis for venous thrombus:

- Heparin (unfractionated, LMW, or fondaparinux) and oral anticoagulants (warfarin).

280. True about proton-pump inhibitor omeprazole is

a) CYP 2C19 predicts efficacy

b) Not bind to plasma protein

c) Oral bioavailability is 80%

d) All of the above

Correct Answer - A

Ans. is'a'i.e., CYP 2C19 predict efficacy

lRef: Pharmacogenomics in Therapeutics p. 206

- CYP 2C19 is the principal enzyme that metabolizes omeprazole to inactive metabolite.
- The efficacy of drug is influenced by the CYP 2C19 genotype.

281. Time dependent killing is shown by

a) Aminoglycosides

b) Fluoroquinolones

c) Linezolid

d) All of the above

Correct Answer - C

Ans. 'c'i.e., Linezolid.

Some, antimicrobial drugs have time dependent effect while others have concentration dependent effects :

- Time dependent affect - Action depends on length of time concentration remains above MIC, linezolid, tetracycline, and streptogramin.
- Concentration dependent effect e.g. for macrolides beta-Lactam, clindamycin,

282. Anti-fungal drug Nikkomycin acts by

a) Inhibit ergosterole synthesis

b) Inhibit cell wall synthesis

c) Inhibit nucleic acid synthesis

d) Interferes with mitosis

Correct Answer - B

Ans.e.B., Inhibit cell wall synthesis

Antifungal drugs act by -

- Altering membrane permeability > polyenes, Azoles, Allylamines.
- Interferes with mitosis (disrupts microtubules) > Griseofulvin.
- Inhibit cell wall synthesis > Caspofungin, Nikkomycin.
- Inhibit nucleic acid synthesis (inhibit thymidylate synthase) > Flucytosine (5-FU).

283. All of the following drugs act on cell membrane, except-

a) Nystatin

b) Griseofulvin

c) Amphotericin B

d) Polymyxin B

Correct Answer - B

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

Griseofulvin acts by interfering in mitosis, however it does not cause metaphase arrest like the typical mitotic inhibitors (colchicine, vinca alkaloids). It does not certainly act on the membrane.

284. Clinically significant drug interaction occurs between pyridoxine and all the following drugs except -

a) Isoniazid

b) Cyclosporine

c) Levadopa

d) Hydralazine

Correct Answer - B

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

Drug interactions of pyridoxine

o *Isoniazid* produces a pyridoxine deficiency state.

o *Hydralazine*, *cycloserine* and *penicillamine* also interfere with pyridoxine utilization and action.

- *Oral contraceptives* reduce pyridoxal phosphate level in some women.
- Pyridoxine, by promoting formation of dopamine from *levodopa* in peripheral tissues, reduces its availability in brain.
 - o 4-deoxypyridoxine is a pyridoxine (antagonist).

285. Drug of choice for exo-erythrocytic stage of malaria is ?

a) Chloroquine

b) Primaquine

c) Proguanil

d) Mefloquine

Correct Answer - B
Ans. is 'b' i.e., Primaquine

286. Treatment given to entamoeba cyst carriers is?

a) Metronidazole

b) Diloxanide furoate

c) Paromomycin

d) Nitzoxzanide

Correct Answer - C

Paromomycin REF: Harrison's 18th ed chapter 209

Asymptomatic individuals with documented *E. histolytica* infection should be treated because of the risks of developing amebic colitis or amebic liver abscess in the future and of transmitting the infection to others.

Paromomycin or iodoquinol should be used in these cases.

287. Drug used for kala-azar

a) Diloxanide furoate

b) Metronidazole

c) Paromomycin

d) Spiramycin

Correct Answer - C

Ans. is 'c' i.e., Paromomycin [Ref Harrison 18thVe ch. 212]

- Drugs used for kala-azar
- Parenteral : Amphotericin-B (iv), Paromomycin (im), sodium stibogluconate (iv or im).
- Oral : Miltefosine

288. Which of the following group of antibiotics possess additional anti-inflammatory and immunomodulatory activities ?

a) **Tacrolimus**

b) Polypeptide antibiotics

c) Fluoroquinolones

d) Macrolides

Correct Answer - A

Tacrolimus is a macrolide antibiotic, it acts by inhibiting cytokine production. It possess anti-inflammatory and immunomodulatory activities.

Mechanism: Tacrolimus binds to FKBP 12 and forms a complex. This then binds to calcineurin and inhibits calcineurin phosphates activity. Because of this it cannot dephosphorylate NFATc, and prevents its migration into nucleus and activation of cytokines.

Ref: Immunopharmacology By Manzoor M. Khan, Pages 91-3

289. Paclitaxal acts on which phase of cell cycle

a) G1

b) S

c) G2

d) M

Correct Answer - D

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

- Paclitaxel is M phase specific inhibition.

290. Which of the following anti-cancer drug is not anti-inflammatory or immunosuppressive

a) Methotrexate

b) Azathioprine

c) L-Asparaginase

d) Cyclophosphamide

Correct Answer - C

Ans. is 'c' i.e., L-Asparaginase

[Ry' Medical pharmacology at Glance p. 96]

- Three anticancer drugs have bone-marrow sparing effect, i.e., they do not cause bone marrow suppression: - Vincristine, Bleomycin & L-asparaginase.

291. Cetuximab and rituximab are ?

a) Humanized monoclonal antibodies

b) Murine monoclonal antibodies

c) Chimeric monoclonal antibodies

d) Antinuclear antibodies

Correct Answer - C

Ans. is 'c' i.e., Chimeric monoclonal antibodies

292. Alemtuzumab is antibody against

a) CD-20

b) VEGF

c) EGFR

d) CD-52

Correct Answer - D
Ans. is'd'i.e., CD-52

293. The drug which releases NO

a) Hydralazine

b) Aminophylline

c) Amrinone

d) Sildenafil

Correct Answer - A

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

Ref:GoodmanGilmanITthlep'863, 249, 825

- NO donors, which release NO are used to elicit smooth muscle relaxation.
- Eg: Organic nitrates (nitroglycerine), Organic nitrites (Isoamyl nitrite), Sodium nitroprusside, Nebivolol & Hydralazine

294. Drug used for trabeculectomy

a) Mitomycin-C

b) Azathioprine

c) Cituximab

d) Ketoralac

Correct Answer - A

Ans. is'a'i.e., Mitomycin-C

Ref : Clinical Ophthalmology H/e p. J33.

- The main reason of failure of trabeculectomy surgery is scarring and closure of drainage site.
- Antimetabolites prevent scarring and can be used to increase the success rate of trabeculectomy.
- The most commonly used antimetabolites are mitomycin-C and S-fluorouracil.

295. Which of the following is an ionophore -

a) Carboxin

b) 2, 4 dinitrophenol

c) Atractiloside

d) Valinomycin

Correct Answer - D

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

Ionophores

- Ionophores are *ion carrier molecules*. These are lipid soluble (lipophilic) compounds that increase the permeability of lipid bilayers to certain ions. These are two types of ionophores.
- .. Mobile ion carriers : - These molecules are capable by binding and carrying specific cations (other than *Fr*) through mitochondrial membrane. Oxidative phosphorylation can be prevented by certain ionophores, e.g., Valinomycin. They differ from uncouplers in that they promote the transport of *cations* other than H^+ through the membrane and abolish the membrane potential and proton gradient (pH gradient) across the membrane and phosphorylation is therefore completely inhibited, i.e., ATP synthesis is inhibited.
- 2. Acetaldehyde dehydrogenase dehydrogenase "
v:shapes="_x0000_s1028">*Channel formers* : - These ionophores form the channels allowing ions to pass through, e.g., *gramicidine*, *nigricine*.

296. Priapism occurs in:
AIIMS 06; 13

a) Snake bite

b) Rati poisoning

c) Cantharide poisoning

d) Arsenic poisoning

Correct Answer - C
Ans. Cantharide poisoning

297. Drug of choice for central diabetes insipidus

a) Vasopressin

b) Desmopressin

c) Lypressin

d) Presselin

Correct Answer - B

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

[Rel: KDT Vh/e p. 596 & 6h/e p. 576, 577; Katzung I|th/e p. 658]

- Desmopressin (intranasal) is the DbC for central DI.

298. Indian evidence act 113 A is related to -

a) Cruelty by husband or his relatives

b) Dowry death

c) Admissibility of electronic records

d) Opinions of experts

Correct Answer - A

Ans. is 'a' i.e. Cruelty by husband or his relatives [Ref Internet]

- **IEA sec 113A** -Presumption as to abetment of suicide by a married woman.-When the question is whether the commission of suicide by a woman had been abetted by her husband or any relative of her husband and it is shown that she had committed suicide within a period of seven years from the date of her marriage and that her husband or such relative of her husband had subjected her to cruelty, the Court may presume, having regard to all the other circumstances of the case, that such suicide had been abetted by her husband or by such relative of her husband." Explanation.-For the purposes of this section, "cruelty" shall have the same meaning as in section 498A of the Indian Penal Code (45 of 1860).]
- **IEA sec 113B** - Presumption as to dowry death.-When the question is whether a person has committed the dowry death of a woman and it is shown that soon before her death such woman has been subjected by such person to cruelty or harassment for, or in connection with, any demand for dowry, the Court shall presume that such person had caused the dowry death. Explanation.-For the purposes of this section, "dowry death" shall have the same meaning as in section 304B, of the Indian Penal Code, (45 of 1860).

299.

Section for expert witness under IEA is -

a) 45

b) 32

c) 154

d) 65B

Correct Answer - A

Ans. is 'a' i.e. 45 [Ref Internet]

- IEA sec 45 - Opinions of experts.-When the Court has to form an opinion upon a point of foreign law or of science or art, or as to identity of handwriting [or finger impressions], the opinions upon that point of persons specially skilled in such foreign law, science or art, [or in questions as to identity of handwriting] [or finger impressions] are relevant facts. Such persons are called experts.
- IEA sec 65B - Admissibility of electronic records
- LEA sec 32 - Cases in which statement of relevant fact by person who is dead or cannot be found, etc ., is relevant
- IEA sec 154 - Question by party to his own witness.

300. Lucid interval is seen in ?

a) Extradural hemorrhage

b) Subdural hemorrhage

c) Intracranial hemorrhage

d) Ans. is 'a' i.e., Extradural hemorrhage

Correct Answer - A

Ans. is 'a' i.e., Extradural hemorrhage

301. Death of a patient due to an unintentional act by doctor, staff or hospital is :

a) Therapeutic misadventure

b) Vicarious liability

c) Therapeutic privilege

d) Diminished liability

Correct Answer - A
A i.e. Therapeutic misadventure

302. Mc naughten's rule refers to :

a) Person is not responsible if he is not of a sound mind

b) Person is held responsible even if he is not of sound mind

c) Person is always held responsible

d) Any of the above

Correct Answer - A

A i.e. Person is not responsible if he is not of a sound mind

303. 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.

304. Finger printing technique was first used for criminal cases by -

a) Sir Francis Galton

b) Sir William Herschelle

c) Sir Edward Henry

d) Dr Henry P. DeForrest

Correct Answer - C

Ans. is 'c' i.e. Sir Edward Henry [Ref Internet]

- Finger prints were discovered by an ICS officer Sir William Herschelle (1958). But study was systemized by Sir Francis Galton (1892) and was further improvized by Sir Edward Henery.
- In 1901 there was introduction of fingerprints for criminal identification in England and Wales, using Galton's observations and revised by **Sir Edward Richard Henry**.
- Thus began the Henry Classification System, used even today in all English speaking countries.
- First systematic use of fingerprints in the U.S. by the New York Civil Service Commission for testing. Dr. Henry **P.** DeForrest pioneers U.S. fingerprinting.

305. Bertillon system is for -

a) Anthropometry

b) Dactylography

c) Dentition

d) Nuclear sexing

Correct Answer - A

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

Bertillon system is **anthropometry**.

306. Faded tattoo mark can be visualized by -

a) Ultraviolet rays

b) Spectrophotometer

c) Ordinary light

d) X-ray

Correct Answer - A

Ans. is 'a' i.e., Ultraviolet rays [Ref Principles of Forensic Medicine and Toxicology by Rajesh Bardale, p. 71]

Latent tattoo marks (faded marks) can be visualized by:-

- Use of ultraviolet light
- Infrared photography
- Rubbing the part and examining under magnifying glass
- If tattoo marks are obscured by decomposition they can be visualized by treating with 3% H₂O₂.
- Tattoo marks can be developed by treating the skin by 0.5% caustic potash.
- Histopathology of local lymph nodes for pigment.

307. The period of mixed dentition is between the ages of :

a) 2-5 years

b) 6-11 years

c) 12-14 years

d) 15-17 years

Correct Answer - B
B i.e. 6-11

308. Pelvis alone helps in -

a) 95% sex determination

b) 90% sex determination

c) 75% sex determination

d) 50% sex determination

Correct Answer - A

Ans. is 'a' i.e. 95% sex determination [Ref Reddy 30⁵/e p. 59]

According to Krogman, the degree of accuracy in sexing adult skeletal remains is :-

- **Pelvis plus skull → 98 %**
- **Long bones alone → 80 %**
- **Entire skeleton 100%**
- **Pelvis alone 95 %**
- **Skull alone 90 %**

309. Harvard criteria are for -

a) Brain death

b) Brain stem death

c) Small obturator foramen

d) None of the above

Correct Answer - A

Ans. is 'a' i.e. Brain death [Ref: Various books & internet]

Harvard criteria Brain of death

It is a set of 4 conditions as set by the Harvard School of Medicine for diagnosis of irreversible coma or brain death.

They are:

1. Unreceptivity and unresponsiveness
2. Lack of movements or breathing
3. Absent reflexes
4. Flat electroencephalogram (confirmatory)

These conditions also are to be met:

- Body temperature ≥ 32 C
- Not under the influence of CNS depressants

310. Increase in temperature during first 2 hours after death is due to -

a) Massive hemorrhage

b) Cyanide poisoning

c) Organophosphorus poisoning

d) Septicemia

Correct Answer - D

Ans. is 'd' i.e., septicemia [Ref Reddy 30th/e p. 139,140; S.K. Singhal 21thie p. 92]

Postmortem calorificity is seen in :?

1. Due to disturbed heat regulation : Sun-stroke (heat stroke), pontine hemorrhage.
2. Due to heat production by muscular activity : Tetanus, strychnine poisoning, asphyxial death.
3. Acute bacterial or viral infections : Pneumonia, septicemia, liver abscess, peritonitis, typhoid, nephritis, meningitis, cholera etc.
- Very high atmosphere temperature.

311. Antemortem and postmortem wounds could be differentiated by all, except:

a) Everted margins

b) Blood clots in surrounding tissue

c) Swollen edges

d) Sharp edges

Correct Answer - D

D i.e. Sharp edges

Antemortem wound shows *gaping, everted and swollen edges with vital reactions of inflammation, infection & healing*. It bleeds freely and shows *extensive, deep and firmly adherent clotting (staining) of surrounding tissue which can't be washed away*.

312. Suspended animation is seen in following except?

a) Sun stroke

b) Cerebral concussion

c) Cholera

d) Delerium tremens

Correct Answer - D

Ans. is 'd' i.e., Delirium tremens

Suspended animation may be seen in electrocution, drowning, cholera, after anesthesia, shock, sunstroke, cerebral concussion, narcotic poisoning, new born infants and yogis/voluntary.

313. Function of sodium borate in embalming fluid is

a) Anticoagulant

b) Preservative

c) Buffer

d) Vehicle

Correct Answer - C
Buffer

314. Brain is presented for study in -

a) 10% formalin

b) 20% formalin

c) 30% formalin

d) 40% formalin

Correct Answer - A

Ans. is 'a' i.e. 10% formalin [Ref Reddy 30thie p. 97]

- 10% formalin is used as preservative for histopathological examination of tissue but not used for poisoning or chemical analysis.

315. Time since death can be known by all of the following except -

a) Cadaveric spasm

b) Algor mortis

c) Rigor mortis

d) Livor mortis

Correct Answer - A

Ans. is 'a' i.e. Cadaveric spasm [Ref Reddy 30thie p. 148-149]

- Cadaveric spasm can tell about the mode of death but not about time since death.
- All other options can indicate about time since death. Algor mortis is the most important indicator of time since death.

316. Primary impact injury is most common in

a) Head

b) Chest

c) Abdomen

d) Leg

Correct Answer - D

D i.e. Leg

In pedestrian injuries, *legs are most commonly involved* (85%) followed by *head* (50 -80%) > *arms* > *pelvis* > *chest or abdomen* > *neck & spine*.

Most common type of primary impact injury is *bumper injuries of legs* d/t vehicle hitting from front.

317. Brush burn is due to

a) Friction injury

b) Firearm injury

c) Electrical injury

d) Graze abrasion

Correct Answer - D

D i.e. Graze abrasion

Abrasion

- It is a destruction of the skin, which involves the superficial layers of the epidermis only. They are of 4 types :
- *Scratches*- its a abrasion with length but no significant width or a a very superficial incision.
- *Grazes*-most common. They occur when there is movement between the skin and some rough surface in contact with it. A violent lateral graze, due to rubbing of skin (as in dragging) is known as brush burn (Gravel rash). Friction burn (Scuff or brush abrasion) occur due to tangential contact with a smooth surface or when the skin is covered by clothing. It is an extensive superficial, reddened excoriated area without bleeding and with little or no linear mark.
- *Pressure or friction abrasion*- they are caused by crushing of the superficial layers of the epidermis and are associated with a bruise of the surrounding area.
- *Impact or contact abrasion*- they are caused by impact with a rough object, when the force is applied at or near a right angle to the skin surface.
- *Patterned abrasion*- impact abrasion and pressure abrasion reproduce the pattern of the object causing it and are called Patterned abrasion.

318. Crocodile flesh burn -

a) Explosive injury

b) Lightning injury

c) Electrical injury

d) Gunshot injury

Correct Answer - C

Ans. is 'c' i.e. Electric injury [Ref S.K. Singhal 4thle p. 204]

High voltage current may cause burns over a large area of skin (around entry wound) Crocodile skin lesion.

319. True about Lacerated wound is?

a) Clean cut wound

b) Regular margin

c) Irregular margin

d) Tapered margins

Correct Answer - C

Irregular margin

REF: Textbook of Forensic Medicine and Toxicology by Nagesh Kumar Rao Page 182

Features of laceration:

- Margins-irregular, with pieces of tissue attached, called as tissue tags or bridges
- Bruising seen around the margins
- Hair bulbs crushed
- Depth of wound is variable with foreign bodies
- Laceration of viscera produces fatal bleeding
- In skin laceration one of the margin overhangs the other giving sign of direction of the force involved
- On healing produces permanent scar

320. Seat belt injury involves -

a) Spleen

b) Mesentry

c) Femoral artery

d) Abdominal aorta

Correct Answer - B

Ans. is 'b' i.e., Mesentry [Ref Reddy 29th/e p. 255]

- Sudden break will cause acute flexion of body over the lap strap of seat belt.
- This kind of injury can give rise to 'seat belt syndrome' which includes small intestine avulsions, intestinal, omental and mesenteric lacerations and intestinal contusions and perforations.

321. Bullet marking indicates -

a) Type of weapon

b) Type of wound

c) Range of firing

d) Severity of tissue damage

Correct Answer - A

Ans. is 'a' i.e., Type of weapon [Ref Reddy 31st/e p. 217; Parikh 6th/e p. 4.37-39; Apurwa Nandy 2nd/e p. 48]

The kind of firearm weapon which fired the shot can be determined by ?

1. Size, shape, composition and primary or secondary marking of bullet.
2. Appearance of wound.

322. The "knot" in judicial hanging is placed at:

a) The back of the neck

b) The side of the neck

c) Below the chin

d) Choice of hangman

Correct Answer - B

The side of the neck

[Ref Reddy 30thle p. 315]

Placement of knot beneath the chin (*submental position*) is thought to be most effective, ensuring a quicker death. However some prefer side of neck (left sub aural i.e. below angle of jaw) knot.

323. Hanging in which body is fully suspended & feet are not touching the ground -

a) Partial hanging

b) Complete hanging

c) Homicidal hanging

d) Suicidal hanging

Correct Answer - B

Ans. is 'b' i.e., Complete hanging [Ref Parikh Ole p. 3.41-3.46]

- Complete hanging: Body is fully suspended and no part of body touches the ground. Constricting force is weight of body.
- Incomplete (partial) hanging : 'There is partial suspension and some body part (usually lower) is touching the ground. Constricting force is weight of the head (5-6 kg).

324. Excessive sexual desire in female

a) Nymphomania

b) Satyriasis

c) Frigidity

d) Fetishism

Correct Answer - A

Ans. is 'a' i.e. Nymphomania [Ref Concise Textbook Of Forensic Medicine & Toxicology by Sharma p. 130]

- Nymphomania is excessive sexual desire in female where she enjoys having multiple sexual partners or desires excessive sexual activity.

**325. Death due to suffocation are all,
except:
AI 08**

a) Smothering

b) Choking

c) Throttling

d) Gagging

Correct Answer - C

Ans. Throttling

- Suffocation is a form of asphyxia caused by mechanical obstruction to the passage of air into the respiratory tract by means other than constriction of neck or drowning.
- It includes smothering, gagging, choking, *burking*, *traumatic asphyxia* and *cafe coronary*.

326. Following are the features of chronic arsenic poisoning except ?

a) Emaciation

b) Conjunctivitis running nose

c) Black pigmentation of skin

d) Sensory motor polyneuropathy

Correct Answer - C

Ans. is 'c' i.e., Black pigmentation of skin

There is patchy brown (not black) pigmentation of skin.

Chronic arsenic poisoning has four stages :

1. First stage (nutritional and gastrointestinal disturbances) : The *earliest sign is gradual emaciation*. There is loss of appetite, nausea and intermittent vomiting and diarrhea.
2. Second stage (catarrhal changes) : It resembles common cold, i.e. conjunctivitis, running nose and eyes, coughing etc.
3. Third stage (skin rash) : There is classical 'rain drop pigmentation', i.e. patchy brown pigmentation of skin. At initial stages, there is a *vesicular eruption* which may resemble nettle rash. Hyperkeratosis of palms and soles occur. There are white transverse bands crossing the nails, known as Mee's line, and indicate periods of arrested growth due to interference with normal metabolism. There is alopecia and exfoliative dermatitis.
4. Fourth stage (nervous disturbances) : There is sensory and motor (i.e. mixed) polyneuropathy, with painful paresthesia of hands and feet and muscle tenderness.

327. In a case of chronic arsenic poisoning all of the following samples are sent for laboratory examination, EXCEPT:

a) Nail clippings

b) Hair samples

c) Bone biopsy

d) Blood sample

Correct Answer - D

Arsenic is present in blood only during acute poisoning.

In chronic poisoning arsenic gets deposited in the bone, keratin tissues, hair, nail and skin for many years.

In the bone arsenic replaces phosphorous and remains for many years.

Arsenic appear in the hair and nails within hours of ingestion.

Neutron activation analysis and atomic absorption spectroscopy helps to estimate concentration of arsenic in hair, nails, bone etc.

Ref: The Essentials of Forensic Medicine and Toxicology By Dr KS Narayan Reddy, Page 475

328. Triad of alopecia, neuropathy and diarrhea results from which poisoning

a) Thallium

b) Dhatura

c) Opium

d) Mercury

Correct Answer - A

Ans. is 'a' i.e. thallium [Ref Internet]

The classic symptoms of acute thallium toxicity are:

- Severe stomach pain, nausea, vomiting, and diarrhea within 3-4 hours of exposure
- Painful and rapidly progressing peripheral neuropathies (numbness, tingling and pain, especially on the soles and palms) about 2-5 days after exposure.
- Sudden hair loss that progresses to widespread alopecia about 2-3 weeks after exposure.
- Signs and symptoms of chronic poisoning include tiredness, headaches, depression, hallucinations, psychosis, dementia, poor appetite, leg pains, hair loss and disturbances of vision.

329. St Anthony fire disease is

a) Opioid poisoning

b) Cannabis poisoning

c) Ergot poisoning

d) Dhatura poisoning

Correct Answer - C

Ans. is 'c' i.e. Ergot poisoning [Ref Internet]

- In cases of ergot poisoning (also known as ergototoxicosis or traditionally, Saint anthony's fire) alkaloids accumulate in the system due to the consumption of contaminated grain products.

330. Alkyl organophosphate is

a) Parathion

b) Follidol

c) Diazinon

d) Malathion

Correct Answer - D

Ans. is 'd' i.e., Malathion [Ref Parikh ele p. 10.41-10.44; Reddy03 th; _e p 476-478; Essentials offorensic medicine-981]

- Alkyl phosphatase :Malathione, HETP (hexa ethyl tetra phosphate), TEPP (tetra ethyl pyrophosphate or tetron), OMPA (octa methyl pyrophosphate), dimefox, isopestox, demeton, trichlorfon, dipterex.
- Aryl phosphatase :Parathion, Follidol,or nitrostigmine or killphos or ekato), paraoxon, Diazinon (diazion or TIK 20), methyl-parathion (metacide), chlorthion.

331. Characteristic postmortem finding of carbolic acid poisoning is

a) Greenish stomach

b) Yellow charred stomach

c) Brown Leathery stomach

d) Black charred stomach

Correct Answer - C

Ans. is 'c' i.e., Brown leathery stomach [Ref Parikh 6th/e p. 8.35-8.36; Reddy 30th/e p. 489]

- Carbolic acid causes corrosion of lips, mouth and tongue, with burning of chin and cheeks. Vomiting may not take place owing to the anaesthetic action on stomach.
- The burnt areas are white in colour which later becomes grey, green or brown.
- In postmortem examination, stomach looks brownish and leathery.

332. Antidote for arsenic poisoning is

a) Ferric oxide

b) Aluminium oxide

c) Magnesium oxide

d) Nickel oxide

Correct Answer - A

Ans. is 'a' i.e. Ferric oxide [Ref Parikh 6th/e p. 9.9-9.11; Reddy 30th/e p. 493-494; Essentials offorensic medicine-812]

- Treatment of arsenic poisoning includes stomach wash and use of freshly precipitated hydrated ferric oxide as an antidote (which forms ferric arsenite a harmless salt).

333. Burtonian line is seen due to the exposure of?

a) Arsenic

b) Silicon

c) Mercury

d) Lead

Correct Answer - D

A stippled blue line called **Burtonian line** is seen on the gums in 50-70% of cases of lead poisoning.

It appears due to the subepithelial deposits of granules at the junction with teeth, only near dirty or carious teeth, within a week of exposure, especially on upper jaw.

It is due to the formation of lead sulphide by the action of hydrogen sulphide formed by the decomposition of tooth.

Ref: The Essentials of Forensic Medicine and Toxicology 29th Ed
Page 488.

334. Culture media for transport of stools in suspected case of shigellosis -

a) Deoxycholate medium

b) Blood agar

c) Nutrient broth

d) Buffered glycerol saline

Correct Answer - D

Ans. is 'd' i.e., Buffered glycerol saline

Streptococcus
pyogenes

Pike's medium

Neisseria

Stuart's medium, Amies medium

For stool
specimen

Buffered glycerol saline, Cary-Blair, Stuart
medium

Salmonella,
Shigella

Sach's buffered glycerol saline

V cholerae

VR medium, Cary-Blair medium,
Autoclaved sea water

Bordetella

Modified Stuart's, Mischulow's charcol agar

335. Autoclaving is done at what temperature for 15 minutes:

March 2010

a) 118 degree C

b) 121 degree C

c) 126 degree C

d) 134 degree C

Correct Answer - B
Ans. B: 121 degree C

336. True about hand hygiene -

a) Betadine can cause irritation

b) Alcohol based preparation are used

c) Hot water is best

d) Gluteraldehyde is used

Correct Answer - B

Ans. is 'b' i.e., Alcohol based preparation are used [Ref Greenwood 16th/e p. 81]

- Povidone iodine is the best skin disinfectant
- Povidone iodine (Betadine) is less irritant and cause less staining.
- Aqueous and alcohol-based povidone iodine preparations are widely used in skin disinfection including preoperative preparation of the skin.
- Commonly used skin disinfectants for hand washing are
- Povidone iodine (Betadine) 4 Best
- Chlorhexidine
- Isopropyl alcohol

337. Glutraldehyde is used to sterilize -

a) Endoscopes

b) Corrugated rubber anaesthetic tube

c) Plastic endotracheal tubes

d) All of the above

Correct Answer - D

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

Glutraldehyde is used for -

1. Cystoscopes and bronchoscopes
2. Plastic endotracheal tubes
3. Corrugated rubber anaesthetic tubes
4. Polythene tubing Face masks
5. Endoscopes

338. Gamma irradiation used for all of the following except?

a) Syringes

b) Catgut suture

c) Grafts

d) Endoscope

Correct Answer - D
Ans. is 'd' i.e., Endoscope

339. Catalase positive coagulase negative beta hemolytic bacteria -

a) Strep pyogens

b) Staph aureus

c) Coagulase negative staph

d) Enterococci

Correct Answer - C

Ans. is 'c' i.e., Coagulase negative staph

- The examiner himself has given the answer by writing coagulase negative in option 'c'.
- Staphylococci are catalase positive.

340. True about staphylococcus aureus -

a) Micro aerophilic

b) Produce lemon yellow colonies

c) Grows with 10% NaCl

d) All are true

Correct Answer - C

Ans. is 'c' i.e., Grows with 10% NaCl [Ref: Ananthanarayan 9th le p. 199-202]S

- staphylococcus is facultative anaerobe. Optimum pH for growth is 7.4 - 7.6 and optimum temperature is 37°C.
- Staph aureus produces golden yellow pigment, which is maximum at 22°C.
- Most of the staphylococcus species grow in the presence of 10% NaCl.
- On nutrient agar slope there is characteristic Oil paint appearance. For primary isolation, sheep blood agar is recommended. Human blood should not be used as it may contain antibodies or other inhibitors
- Staph aureus → Golden yellow colonies
- Staph epidermidis (also called staph albus) → White colonies
- Staph citreus → Lemon yellow colonies

341. Griffith typing is done for -

a) Staphylococcus

b) Streptococcus

c) Meningococcus

d) Gonococcus

Correct Answer - B

Ans. is 'b' i.e., Streptococcus [Ref: Ananthanarayan 9th/e p. 209, 210]

- Hemolytic streptococci were classified by lancefield serological classification into groups based on nature of 'C' carbohydrate antigen on the cell wall.
- These are known as Lancefield groups, twenty of which have been identified so far and named A to V (without I and J).
- Group 'A' strep. are further subdivided into types based on the protein (M, T and R) antigens present on the cell surface (Griffith typing). About 80 types of str. pyogenes have been recognized.

342. Naegler's reaction is due to:

a) Coagulase

b) Hyaluronidase

c) Lecithinase

d) None of the above

Correct Answer - C
Ans. is. 'c' i. e. Lecithinase

343. What genetic peculiarity is there in pathogenic/ toxigenic strain of corynebacterium diphtheriae but not in nonpathogenic [non-toxigenic] strain -

a) Presence of R-factor

b) Presence of [tox-]gene

c) Integrated temperate phage

d) Presence of MDR gene

Correct Answer - C

Ans. is 'c' i.e., Integrated temperate phage [Ref: See above explanation]

- The toxigenicity of the diphtheria bacilli depends on the presence in it of corynephages (tox +). Nontoxigenic strains may be rendered toxigenic by infecting them with beta phage or some other larger phage.
- This is known as lysogenic conversion or phage conversion.

344. A patient presented to you with fever, headache, rash and eschar. You suspect rickettsial disease. Which of the following is the LEAST likely disease in this case?

a) Indian tick typhus

b) Rickettsial pox

c) Scrub typhus

d) Endemic typhus

Correct Answer - D

Rash is seen in

- 1) Epidemic typhus
- 2) Endemic typhus
- 3) Scrub typhus
- 4) Rocky Mountain spotted fever
- 5) Indian tick typhus

Lymphadenopathy is seen in

- 1) Scrub typhus
- 2) Rickettsial pox

Eschar is seen in

- 1) Scrub typhus
- 2) Rickettsialpox
- 3) Indian tick typhus

Ref: Park, Edition 21, Page 274-276

345. Thick pus of streptococci is converted thin by enzyme -

a) DNAase

b) Streptokinase

c) RNAase

d) C5a peptidase

Correct Answer - A

Ans. is 'a' i.e., DNAase [Ref Vasantha kumari p. 194]

- Deoxyribonuclease (DNAase) of streptococcus is also called as streptodornase.
- They cause depolymerization of DNA. **They liquefy highly viscous DNA that accumulates in thick pus.**
- This is responsible for the thin serous character of streptococcal exudates.

346. Sereny test is positive in -

a) Entero-invasive E.coli [EICE]

b) Entero-pathogenic E.coli [EPEC]

c) Entero-toxigenic E.coli [ETEC]

d) Entero-aggregative E.coli [EAEC]

Correct Answer - A

Ans. is 'a' i.e., Entero-invasive E. coli

- Sereny test is done for EIEC and shigella.
- In this test, instillation of a suspension of freshly isolated ETEC or shigella into the eyes of guinea pigs leads to mucopurulent conjunctivitis and severe keratitis.

347. Most important serotype of E coli causing hemolytic uremic syndrome -

a) O 157: H7 of EHEC

b) O 107: H7 of EIEC

c) O 157: H7 of ETEC

d) O 109: H7 of EAEC

Correct Answer - A

348. True about Bacillus anthracis ?

a) Zoonotic disease

b) Man to man transmission possible

c) Agent for bioterrorism

d) a and c

Correct Answer - D

Ans. is 'a' i.e., Zoonotic disease; 'c' i.e., Agent for bioterrorism

. Anthrax is a zoonosis. It is primarily a disease of herbivorous - goats, sheep, cattle, horses etc.

. Human become infected incidentally by contact with infected animals or their products.

. B. anthracis is among the category A pathogens (ie the highest priority pathogens) for bioterrorism.

. Antibiotic therapy is effective in humans, and ciprofloxacin is recommended for the treatment - (Jawetz 23rd/e 204). For prophylaxis ciprofloxacin or doxycycline should be given.

. M' Fadyean's reaction is characteristic of anthrax bacillus. it is non motile bacteria.

- Bacillus anthracis is '**gram positive**' '**non-motile**' **bacilli** arranged singly, in pairs or in short chains.
- It is **capsulated**, having **polypeptide** capsule.
- It is **spore forming** bacteria. **Spores are formed in culture or in soil but never in animal body during life**. Spores are **central or subterminal, elliptical or oval** in shape. Oxygen is required for sporulation. Spore formation is inhibited by CaCl₂.

349. Most serious form of Rickettsial disease -

a) Scrub typhus

b) Q-fever

c) Trench fever

d) Rocky mountain spotted fever

Correct Answer - D

Ans. is 'd' i.e., Rocky mountain spotted fever [Ref: With text]

- "Among the Rickettsial diseases, Rocky mountain spotted fever is the most common and the most serious"
- The microbial challenge "*Rickettsia rickettsii* (causative agent of RMSF) is the most virulent Rickettsia" — Clinical microbiology

350. Levinthal Coles Lillie bodies are seen in -

a) WV

b) Psittacosis

c) Kala Azar

d) Chicken pox

Correct Answer - B

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

. In psittacosis infected cells, including alveolar macrophages from patients, and mouse brain, yolk sac and cell cultures shows inclusion bodies
Levinthal - Cole - Lillie (LCL) bodies.

351. HP body is seen in

a) Chlamydia trachomatis

b) Chlamydia psittaci

c) Chlamydia pneumoniae

d) Mycoplasma hominis

Correct Answer - A

Ans. is 'a' i.e., Chlamydia trachomatis [Ref: Ananthanarayan 9th/e p. 421)

HP bodies are seen in :-

- Chlamydia trachomatis - Halberstaedter Prowazek (HP) body
- Molluscum contagiosum - Henderson paterson (HP) bodies.

352. Halophilic vibrio which causes wound infection at sea coast is

a) *Vibrio vulnificus*

b) *Vibrio parahaemolyticus*

c) *Vibrio mimicus*

d) *Vibrio cholerae*

Correct Answer - A

Ans. is 'a' i.e., *Vibrio vulnificus* [Ref Harrison 19thie p. 1065]

- ***Vibrio vulnificus* is an opportunistic pathogen (Halophilic vibrio) that is primarily associated with wound and ear infections and occasionally eye infections.**

353. What is drug of choice in dysentery due to shigella?

a) Doxycycline

b) Ciprofloxacin

c) Tetracycline

d) No antibiotic is recommended

Correct Answer - B

The drug of choice for shigella is ciprofloxacin.
Shigella is usually resistant to ampicillin and cotrimoxazole.

Ref: Park 21st edition, page 204.

354. The Weil-Felix reaction is:

a) Precipitation

b) Agglutination

c) CFT

d) Immunoassay

Correct Answer - B
Agglutination

355. All of the following are correct regarding Legionella except -

a) Legionella can be grown on complex media

b) Legionella pneumophila serogroup 1 is the most common serogroup isolated from humans

c) Legionella are communicable from infected patients to others

d) Legionella pneumophila is not effectively killed by polymorphonuclear leukocytes

Correct Answer - C

Ans. is 'c' i.e., Legionella are communicable from infected patients to others

. The source of legionella is water. Man of man transmission does not occur.

LEGIONELLA

Morphology

- . Gram negative
- . Coccobacilli
- . Non capsulated
- . Motile by polar or subpolar flagella.
- . Best visualized by direct fluorescent antibody (DFA)

Culture

- . Strict aerobe
- . *Has fastidious requirements and grow on complex media such as buffered charcol, yeast extract (BCYE) agar.*

Transmission

- . The nature habitats for L. pneumophila are aquatic bodies, including lakes and streams.
- . The legionellae survive and multiply inside freeliving amebae

and other protozoa.

. Mode of transmissions :

1) *Aerosolization* - Inhalation of aerosols produced by cooling towers, air conditioners and shower heads which act as disseminators.

2) *Aspiration* - *Is the predominant mode of transmission -*

3) *Direct instillation in to the lung*

- . The source of legionella is water
- . No animal reservoir exists
- . No carrier state is established
- . Man to man transmission does not occur.

About option d

. *Because of its intracellular location legionella is not effectively killed by the polymorphs and humoral antibodies.*

. Cell mediated immunity is the primary mechanism of host defense against legionella.

About option b

. At least 14 serogroups of *L. pneumophila* have been identified.

. *L. pneumophila* serogroup 1 (SG 1) accounts nearly all severe infections.

. *L. pneumophila* serogroup 6 is more commonly involved in hospital - acquired legionnaire's disease.

356. Cell fusion of HIV with target cell is done by

a) gp 120

b) gp 41

c) p24

d) p 18

Correct Answer - B

Ans. is 'b' i.e., gp 41 [Ref Harrison 19th/e p. 1215-1221; Ananthanarayan 9th/e p. 574, 575]

- gp 120 → Binding of HIV to CD4 antigen on T-cell.
- gp 41 → Fusion of HIV to target cell (T-cell)
- The HIV envelop contains two glycoproteins, surface gp120 that is noncovalently attached to transmembrane protein, gp41.
- The initial step in infection is the binding of gp120 envelop glycoprotein to CD4 molecules.
- This binding leads to a conformational change that result in the formation of a new recognition site on gp120 for the coreceptor CCR5 or CXCR4.
- The next step involves conformational changes in gp41.
- These changes results in the insertion of fusion peptide at the tip of gp41 into the cell membrane of target cell (CD4 T-cells or macrophages).
- After fusion, the virus core containing the HIV genome enters the cytoplasm of the cell.

357. Which of the following is a lentivirus

a) HIV

b) HBV

c) HCV

d) Rabies virus

Correct Answer - A

Ans. is 'a' i.e., HIV [Ref Harrison 19thie p. 1215-1221;

Anenthnarayan 9th le p. 574, 575]

- The etiologic agent of AIDS is HIV, which belongs to the family of human retroviruses (Retroviridae) and the subfamily of lentiviruses.
- HIV is also known as Human T cell lymphotropic virus HI (HTLV-III) or Lymphadenopathy associated virus (LAV).

358. Most common genital infection in HIV infected patient

a) Chlamydia

b) Herpes

c) Syphilis

d) Candida

Correct Answer - B

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

- 'Herpes simplex (in the developed world) and chancroid (in Africa) are the most common cause of genital ulceration in HIV infected patients.' - An Atlas of differential diagnosis in HIV disease' by Lipman, Gluck and Johnson 1st (1995) p. 30

359. EBV action in nasopharynx is through?

a) CD 3

b) Cd 4

c) CD 8

d) CD 21

Correct Answer - D

Ans. is 'd' i.e., CD 21

Epstein - Barr Virus (EBV)

- Belongs to Herpes viruses family.
- Infection is most common in early childhood, with a second peak during late adolescence.
- *Infectious mononucleosis (IM) is usually a disease of young adults.*
- EBV is transmitted by saliva (oral secretions) of infected person.
- Intimate oral contact, as in *kissing* is the predominant mode of transmission causes kissing disease.
- The virus enter the pharyngeal epithelial cells and B cells through (CR 2 / or CD21) receptors.
- *Memory B Cells are the reservoir of EBV.*

360. Acute hemorrhagic conjunctivitis is caused by ?

a) Enterovirus 70

b) Adenovirus

c) Poliovirus

d) Hepadnavirus

Correct Answer - A

Ans. is 'a' i.e., Enterovirus 70

Acute hemorrhagic **conjunctivitis** (AHC) may be caused by adenoviruses, but two **enteroviruses**, **enterovirus 70** and coxsackie A24 variant, are the major causes.

361. All are true about Norwalk virus except -

a) Belongs to calciviridae

b) Cultivated in cell culture

c) Causes gastroenteritis

d) Is a RNA virus

Correct Answer - B

Ans. is 'b' i.e., Cultivated in cell culture [Ref Medical microbiology by Patrick p. 473]

- "Most calciviruses and astroviruses can be grown in cell culture, but the Norwalk viruses cannot"
- Norwalk virus belongs to family calciviridae (RNA viruses) and genus Noroviruses.
- Norwalk virus causes outbreak of gastroenteritis from a common source of contamination (water, shellfish, salad).

362. Incubation period for *Nector americanus*

-

a) 1 week

b) 2 weeks

c) 3 weeks

d) 5-6 weeks

Correct Answer - D

Ans. is 'd' i.e., 5-6 weeks

- Following penetration, *N-americanus* migrates to the lung within about 10 days.
- After 3-5 weeks, it passes through the GIT and attaches to the intestinal mucosa, where it matures into the adult worm and may stay for up to – 5 years
- The average period between larva penetration and egg production (prepatent period) is 4-8 weeks.
- "Incubation period is variable, generally GI symptoms can appear 35-40 days after penetration of filiform larva."
- "The incubation period can vary between a few weeks to many months and largely dependent on the number of hook worm parasites an individual is infected with" -

363. Aseptate hyphae are seen in -

a) Phycomycetes

b) Ascomycetes

c) Basidiomycetes

d) Deutromycetes

Correct Answer - A

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

. Lower fungi (phycomycetes or zygomycetes) --> Aseptate hyphae

. Higher fungi (Ascomycetes, Basidiomycetes, Deutromycetes)

Septate hyphae.

364.

Innate immunity is stimulated by which part of bacteria that acts as a danger signal?

a) Cell wall carbohydrate sequence

b) Flagella

c) Bacterial cell membrane

d) Nucleus

Correct Answer - A

Conserved antigenic patterns in bacteria such as unmethylated CpG DNA, flagellin, and lipid and carbohydrate structures in the bacterial cell wall serve as danger signals to activate innate immunity, resulting in local inflammation and the influx of the macrophages, neutrophils, and dendritic cells.

365. Which portion of antibody binds to antigen -

a) Hinge region

b) Constant region

c) Variable region

d) Hypervariable region

Correct Answer - D

Ans. is 'd' i.e., Hypervariable region [Ref: Harrison 19th/e p. 372 & 18^{11*} p. 2672, 2673;

Ananthanarayan 9th/e p. 95 & 8th le p. 97]

- The amino acid sequences of the variable regions are not uniformly variable along their length, but consist of relatively invariable and some highly variable zones. The highly variable zones are involved with the formation of antigen binding sites. The sites on the hypervariable regions that make actual contact with the epitopes are called "complementarity determining regions (CDRs)".
- "The idiotype is defined as the specific region of the Fab portion of the Ig molecule to which antigen binds". - Harrison 16th/e 1922
- The infinite range of the antibody specificity of immunoglobulin depends on the variability of the amino acid sequences at the variable regions of the H and L chains which form the antigen combining sites.

366. Prevention of human brucellosis depends primarily on

- a) Pasteurization of dairy products derived from goats, sheep, or cows
- b) Treatment of human cases
- c) Control of the insect vector
- d) Immunization of farmers and slaughterhouse workers.

Correct Answer - A

Prevention of human brucellosis depends on pasteurization of dairy products from cows, goats, and sheep; education of farmers and workers in the livestock industry as to the dangers of infected animals; and care in handling products from aborted animals. There is no insect vector. No vaccine for human use is available. Since person-to-person transmission does not occur, treatment of individual cases will not control spread of brucellosis. Destruction of infected animals will prevent transmission to other animals and is a method to control an outbreak in animals. Vaccine is available for livestock, for prevention but not control of outbreak. Immunity from the vaccine lasts only two years.

367. Blood soaked linen are disposed in -

a) Black bag

b) Red bag

c) Green bag

d) White bag

Correct Answer - B

Ans. is 'b' i.e., Red bag [*Ref www.osha.gov*]

368. Giardiasis true is all except ?

a) Diarrhea with steatosis

b) Bloody diarrhea

c) Metronidazole is the drug of choice

d) Absent fever

Correct Answer - B

Ans. is 'b' i.e., Bloody diarrhea

Giardiasis

- Most of the infected patients are asymptomatic.
- Giardia causes diarrhea and **malabsorption**. Malabsorption is due to *loss of brush border enzyme activities*, which cause fat malabsorption (*steatorrhea*) and vitamin deficiency.
- There may be *abdominal pain, bloating, nausea & vomiting, flatulence* and flatus.
- The mechanisms by which Giardia causes alteration in small bowel function are largely unknown. Although trophozoites adhere to the epithelium, *they do not cause invasive or locally destructive alterations*.
- *Fever, the presence of blood or mucus in the stools suggest a different diagnosis as all these are absent in giardiasis.*
- *Giardia may also cause traveller's diarrhea.*
- **Predisposing conditions** to giardiasis are agammaglobulinemia, *common variable immunodeficiency*, and selective IgA-deficiency.

Diagnosis and treatment

- *The gold - standard for diagnosis of giardiasis is microscopic demonstration of the trophozoite, cyst or both in faeces.*
- Duodenal aspirate or jejunal biopsy may be required for diagnosis.
- In acute giardiasis trophozoites show the typical "**falling-leaf**"

motility in wet mount examination of faeces. o *Metronidazole and tinidazole are drug of choice for Giardia lamblia.*

369.

With reference to Bacteroides fragilis the following statements are true, EXCEPT:

a) B. fragilis is the same frequent anaerobe isolated from clinical samples.

b) B. fragilis is not uniformly sensitive to metronidazole

c) The lipopolysaccharide formed by B. fragilis is structurally and functionally different from the conventional endotoxin

d) Shock and disseminated intravascular coagulation are common in Bacteroides bacteremia

Correct Answer - D

Bacteroides species have lipopolysaccharides, but lack the lipopolysaccharide structures with endotoxic activity (including beta-hydroxymyristic acid).

The lipopolysaccharides of B fragilis are much less toxic than those of other gram-negative bacteria.

Thus, infection caused by Bacteroides does not directly produce the clinical signs of sepsis (eg, fever and shock) so important in infections caused by other gram-negative bacteria.

When these clinical signs appear in Bacteroides infection, they are a result of the inflammatory immune response to the infection.

Ref: Brooks G.F. (2013). Chapter 21. Infections Caused by Anaerobic Bacteria. In G.F. Brooks (Ed), *Jawetz, Melnick, & Adelberg's Medical Microbiology*, 26e.

370. 11 Year old child presented with sore throat since 3 days, which medium is used to culture the throat swab -

a) Blood agar

b) L. J. medium

c) Stewart medium

d) Chocolate agar

Correct Answer - A

Ans. is 'a' i.e., Blood agar

- Most common bacterial cause of sore throat (pharyngitis) in children is streptococcal pyogenes. The culture medium of choice for throat swab sample is sheep blood agar plate.

"The throat culture is performed by culturing swab for bacteria collected from the back of throat. The bacteria are allowed to grow on special plates called sheep blood agar plate".

Essentials of pediatrics microbiology Also know

- Overall most common cause of sore throat (acute pharyngitis) in children is viral pharyngitis, rhinovirus being the most common organism.

371. Ebola virus is a -

a) Reovirus

b) Filovirus

c) Arbovirus

d) Arenavirus

Correct Answer - B

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

. Filoviridae includes - Marburg virus, Ebola virus

372. Acute phase reaction in acute inflammation are

a) Albumin

b) Fibrinogen

c) Haptoglobin

d) All

Correct Answer - D

Ans. is 'a' i.e., Albumin, 'b' i.e., Fibrinogen & 'c' i.e., Haptoglobin

- Acute phase reactants are a class of proteins whose plasma concentration increases or decreases in response to inflammation.
- This response is called the acute phase reaction (acute phase response)
- It should be noted that acute phase proteins not only increase in response to inflammation ; some decrease also?
 - 1) Proteins which increase in response to inflammation --> Positive acute phase proteins
 - 2) Proteins which decrease in response to inflammation --> Negative acute phase proteins

373. Source and reservoir are same for which infection -

a) Rabies

b) Tetanus

c) Typhoid

d) Measles

Correct Answer - B

Ans. is 'b' i.e., Tetanus [*Ref Park 23rd/e p. 96 & 22nd/e p. 93*]

- Source & reservoir are same → Tetanus spores survive in soil (reservoir) and a person acquires infection directly from soil (source). So, soil acts as reservoir as well as source.
- Source & reservoir different → In typhoid, bacillus survives and multiplies inside human cases or carriers (act as reservoir), but immediate source of infection is feces or urine of patients, or contaminated food, water or milk (act as source).

374. First step in control of cholera epidemic -

a) ORS therapy

b) Provision of safe water

c) Verification of diagnosis

d) Chemoprophylaxis

Correct Answer - C

Ans. is 'c' i.e., Verification of diagnosis [Ref Park 23rdie p. 230-233]

- First step in control of any epidemic is verification of diagnosis.
There are following steps in the investigation of an epidemic :
- 1. Verification of diagnosis : This is the first step in investigation of an epidemic.
- 2. Confirmation of existence of an epidemic : By comparing with disease frequencies during same period in previous years.
- 3. Defining the population at risk.
- 4. Rapid search for all cases and their characteristics : Search for new cases is carried out everyday, till the area is declared free of epidemic; this period is usually taken as "twice the incubation period of the disease since the occurrence of last case".
- 5. Data analysis.
- 6. Formulation of hypothesis.
- 7. Testing of hypothesis.
- 8. Evaluation of ecological factors.
- 9. Further investigation of population at risk.
- 10. Writing the report.

375. Endemic disease is defined as -

a) Disease occurring regularly in expected frequency

b) Disease occurring irregularly

c) Disease occurring in excess of expected frequency

d) Disease affecting a large population

Correct Answer - A

Ans. is 'a' i.e., Disease occurring regularly in expected frequency [Ref Park 23rd/e p. 93 & 22nd/e p. 89]

Sporadic → Disease occurring irregularly from time to time.

Endemic → Disease occurring regularly in expected frequency.

Epidemic → Disease occurring in excess of expected frequency.

Pandemic → Epidemic affecting a large proportion of population over a wide geographic area.

376. Which of these is the correct dosing schedule according to the Nation Iron Plus Program made to tackle iron-deficiency anemia?

a) 20 mg of elemental iron to all 2-5-year-old children biweekly for an entire year

b) 100 ma of elemental iron and 500 micrograms of folic acid to pregnant women weekly for an entire year

c) 100 mg of elemental iron and 500 micrograms of folic acid to pregnant women biweekly for an entire year

d) 20 mg of elemental iron and 100 micrograms of folic acid to 2-5-year-old children weekly for an entire year

Correct Answer - B

Ans: B. 100 ma of elemental iron and 500 micrograms of folic acid to pregnant women weekly for an entire year

(Ref: Park 22/e p596; <http://www.nrhmp.gov.in/sites/default/files/files/Iron%20plus%20initiative/020for%206%20months%20-5%20years.pdf>)

- According to the National Iron Plus Program made to tackle iron-deficiency anemia, 100 mg of elemental iron and 500 micrograms of folic acid should he given to pregnant women weekly for an entire year.

377. The study for correlation of genetic disease to consanguinity -

a) Case Contral Study

b) Cohort study

c) Cross-sectional study

d) Case report

Correct Answer - A

Ans. is 'a' i.e., Case Control Study [Ref www.instudyepidemiology.com]

- " The association of consanguinity with complex disorders can be studied using different approaches.
- For example, epidemiological surveys could compare the frequency of a disorder in the progeny of first cousin parents with that of unrelated parents, whereas case-control studies could compare the rates of first cousins among affected individuals and controls".

378.

True about cross section study -

a) Prevalence study

b) Useful for chronic disease

c) Simple study

d) All of the above

Correct Answer - D

Ans. is 'd' i.e., All of the above [Ref Park 23rd ed p. 69 & 22nd ed p. 67]

Cross - sectional studies

- Cross sectional study is the simplest form of an observational study.
- It is also known as prevalence study.
- It is based on a single examination of a cross - section of population at one point of time.
- Results of this examination can be projected on the whole population.
- Cross-sectional study tells about the distribution of a disease rather than its etiology.
- Cross-sectional studies can be thought of as providing a snapshot of the frequency and characteristic of a disease in a population at a particular point in time.
- Cross-sectional study is more useful for chronic disease.
- As population is studied at once, no follow-up is required.

379. True about cohort study -

a) Descriptive study

b) Incidence study

c) Proceeds from effect to cause

d) All are correct

Correct Answer - B

Ans. is 'b' i.e., Incidence study [Ref Park 23rd ed p. 79]

- Cohort study is a type of analytic observational study (like case control study).
- Cohort study proceeds forward from cause to effect, i.e., disease has not occurred in subjects (In contrast to case-control study which proceeds backward from effect to cause).
- It is also known as Prospective study, longitudinal study, Incidence study, forward looking study.
- The features of cohort studies are :
- The cohorts are identified prior to the appearance of the disease under investigation.
- The study groups, so defined, are observed over a period of time to determine the frequency of disease among them.
- The study proceeds forward from cause to effect.

380. False about longitudinal studies is -

a) Identifies risk factor

b) Used to study natural history of disease

c) Incidence can't be measured

d) All

Correct Answer - C

Ans. is 'c' i.e., Incidence can't be measured

381. Mass chemoprophylaxis in endemic area is recommended for all of the following, except ?

a) Yaws

b) Leprosy

c) Trachoma

d) Filaria

Correct Answer - B

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

- Mass chemoprophylaxis is recommended in *yaws, pinta, bejel, trachoma, filaria and malaria*.
- Mass chemoprophylaxis is not recommended for the control of leprosy in endemic area.

382. Infectious agent is transmitted to susceptible host from -

a) Source

b) Reservoir

c) Carrier and Case

d) All of these

Correct Answer - D

Ans. is 'd' All of these [Ref Park 23^{ra}/e p. 92-97]

- Actually infectious agent can be transmitted to susceptible host by all the given options.
- But all are then classified as source of infection to the host.
- Source is 'the person, animal, object or substance from which infectious agent passes to host', i.e. man acquires infection from source.
- Reservoir is 'any person, animal, insect, plant, soil or substance in which an infectious agent lives and multiplies'.
- Infectious agent is dependent on reservoir for survival. From reservoir it can be transmitted to susceptible host.
- Thus a reservoir may act as a source of infection when a person acquires infection directly from a reservoir.

383. Tuberculin conversion index is a measure of -

a) Incidence of case

b) Prevalence of case

c) Incidence of infection

d) Prevalence of infection

Correct Answer - C

Ans. is 'c' i.e., Incidence of infection [Ref Park 23rd/e p. 183] Incidence of infection (Annual infection rate)

- It is the percentage of population under study who will be newly infected by M.tuberculosis among the non-infected of the preceding survey during the course of one year.
- It expresses the attacking force of tuberculosis and is also known as tuberculin conversion index i.e. percentege of new people becoming tuberculin positive.
- In developing countries, every 1% of annual infection rate is said to correspond to 50 new cases of smear positive pulmonary TB, per year, for 100000 general population.
- It is the best indicator for evalution of TB problem and its trend.
- In India, annual infection rate/tuberculin conversion index is 1.7%.

384. Which of the following is true of chicken pox ?

a) Virus not found in scab

b) Virus can be grown on the chick embryo

c) Caused by RNA virus

d) Does not cross the placental barrier

Correct Answer - A

Ans. **is** 'a' i.e., Virus not found in scab

- The fluid of vesicle of chickenpox contains virus during first 3 days of illness, but scab is noninfective.

About other options

- *Option b*

VZV does not grow in experimental animal or chick embryo.

It can be grown in tissue culture cell lines ---> Human fibroblast, hela cells, vero cells.

- o *Option c*

VZV is a DNA virus.

- o *Option d*

VZV can cross placenta and infect the fetus.

385. Dew drops on rose petal appearance is seen infection with ?

a) Varicella zoster virus

b) Herpes genitalis

c) Candida

d) T. rubrum

Correct Answer - A

Ans. is 'a' i.e., Varicella zoster virus

Chickenpox - Varicella Zoster virus infection

- Etiology : Varicella-zoster virus.
- Prodrome : Fever and malaise.
- Morphology : Crops of papules with erythematous halo; rapidly become vesicular (dew drops on rose petal appearance), then pustular. Eruption at different stages present. Heal with minimal scarring unless complicated by secondary infection or hemorrhagic lesions (as seen in immunocompromised). Adults usually have a more severe eruption.
- Site : Centripetal distribution.
- Prophylaxis : Live attenuated vaccine.
- Treatment : Specific antiviral therapy (acyclovir 800 mg, five times daily x 7-10 days) in adults and in immunocompromised individuals. None needed in children.

386. True about rash of chicken pox ?

a) Deep seated

b) Centripetal

c) Affects palm & sole

d) Slow evolution

Correct Answer - B
Ans. is 'b' i.e., Centripetal

387. True about measles are all except ?

a) Koplik's spots is pathognomonic

b) Source is a case

c) Infectivity is low

d) Affect age group 1 to 3 years

Correct Answer - C

Ans. is 'c' i.e., Infectivity is low

Measles has high infectivity with secondary attack rate of 80%.

Other options are correct.

388. To eradicate measles the percentage of population to be vaccinated is at least.....%

a) 70

b) 80

c) 85

d) 95

Correct Answer - D
95

389. Which age group is targeted in the catch up vaccination strategy of WHO for elimination of measles?

a) 6 months to 5 years

b) 9 months to 10 years

c) 9 months to 14 years

d) 6 months to 10 years

Correct Answer - C

WHO'S measles elimination strategy comprises three prong approach to vaccination: **catch up, keep up and follow up**. **Catch up** is defined as one time nation-wide vaccination of all children between 9 months to 14 years regardless of history of measles or vaccination status.

Keep up is defined as as routine services aimed as vaccination of more than 955 of successive birth cohorts.

Follow up is defined as subsequent nationwide vaccination campaign conducted every 2 to 4 years targeting all children born after the catch up campaign.

Ref: Park 21st edition, page 137
Chapter: Epidemiology in communicable diseases.

390. SSPE is a complication of ?

a) Mumps

b) Diphtheria

c) Measles

d) Pertussis

Correct Answer - C

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

[Ref: Textbook of neurological practice p. 85]

"SSPE virus is a defective virus. Unlike wild-type measles virus it cannot be isolated directly from body fluids like CSF by inoculating in permissive cell lines. Fresh brain tissue obtained at biopsy or autopsy has to be either explanted in culture or trypsinised to obtain single cell suspension and co-cultured with permissive cell lines".

- SEPE is a late and rare complication of measles .
- SSPE is considered as a slow infection by the measles virus, reactivated many years after the initial attack.
- High level of measles antibodies are present in CSF of patients with SSPE.

391. SSPE is not diagnosed by

a) EEG

b) Antibodies to measles in CSF

c) Antibodies to measles in blood

d) Antigen in brain biopsy

Correct Answer - A

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

Bronchiectasis Sicca or Dry Bronchiectasis is typically associated with Tuberculosis.

- Tuberculosis is associated with a type of dry bronchiectasis called Bronchiectasis Sicca, which is predominantly seen in upper lobes.
- Dry Bronchiectasis (Bronchiectasis Sicca) is typically characterized by absence of copious amount of sputum which is usually a hall mark of bronchiectasis.
- Dry cough associated with hemoptysis is the typical presentation

392. Frist priority age group for vaccination of german measles -

a) 1-14 years male children

b) 1-14 years female children

c) 15-34 years female

d) 15-34 years male

Correct Answer - C

Ans. is 'c' i.e.,15-34 years female [Ref: Park 23rd le p. 151]

- German measles is rubella.
- First priority is to protect women of child bearing age (15 - 34 or 39 years)
- Next priority is to vaccinate all children currently 1 - 14 years of age (to intercept transmission)
- Next priority is to vaccinate all children at one year of age (To intercept transmission)

393. For tuberculosis screening which test is done -

a) Sputum microscopy

b) Sputum culture

c) Tuberculin test

d) Lymph node biopsy

Correct Answer - C

Ans. is 'c' i.e., Tuberculin test [Ref Sadhana Gupta p. 479]

"Tuberculin test is done with purified protein derivation (PPD) and important screening test for TB".

Tests for tuberculosis screening are :-

1. Tuberculin test (Mantoux test).
2. Interferon-gamma release assay (e.g. Quantiferon TB assay).

394. Screening under RNTCP emphasizes on:

a) Sputum microscopy

b) Chest X-ray

c) PCR

d) Sputum culture

Correct Answer - A

Ans. a. Sputum microscopy

Over-reliance on chest X-ray was a drawback of National Tuberculosis Programme (NTP) which was overcome by Revised National Tuberculosis Control Programme (RNTCP) which started diagnosing patients by sputum microscopy.

'A nation-wide network of RNTCP quality assured designated sputum smear microscopy laboratories has been set up, providing appropriate, available, affordable and accessible diagnostic services for TB suspects and cases.'

395. The most sensitive index of recent transmission of malaria in a community is -

a) Spleen rate

b) Infant parasite rate

c) Annual parasite incidence

d) Slide positivity rate

Correct Answer - B

Ans. is 'b' i.e., Infant parasite rate

MEASUREMENT OF MALARIA

o In the *pre-eradication era*, the magnitude of the malaria problem in a country used to be determined mostly from the reports of the *clinically diagnosed malaria cases* and the classical malariometric measures, e.g., spleen rate, parasite rate etc.

- On the other hand, during eradication era, the *microscopic diagnosis* of malaria cases became the main method of diagnosis and the parameters used are mostly parasitological in nature e.g., API, ABER, SPR and SFR.

Measurements of malaria in the pre eradication era

a) Spleen rate:

o Defined as the percentage of children between 2 & 10 years of age showing enlargement of spleen. Spleen rate is widely used for measuring the endemicity of malaria in a community.

b) Av. enlarged spleen :

o A refinement of spleen rate , denoting the average size of spleen.

c) Parasite rate :

o Defined as on the percentage of children between the ages of 2 &

10 yrs showing malarial parasites in their blood films.

d) Parasite density index :

o Average degree of parasitemia

e) Infant parasite rate :

o Percentage of infants showing malarial parasites in their blood films. It is the most sensitive index of recent transmission of malaria in a locality. If the infant parasite rate is zero for three consecutive years in a locality, it is regarded as absence of malaria transmission even though, the Anopheline vectors responsible for previous transmissions may remain.

o **Eradication Era**

a) Annual Parasite Incidence (API)* =-- (Confirmed cases during one year / population under surveillance) x 1000

b) Annual Blood Examination Rate = (No. of slides examined/population) x 100

o ABER is an index of operational efficiency.

o In the modified plan of operation, the minimum prescribed is 10 percent of the population in a year

c) Annual falciparum index

d) Slide positivity rate
o Slide positivity rate is the percentage of slides found positive for malarial parasite, irrespective of the type of species.

e) Slide falciparum rate

o It is the percentage of slides positive for P. falciparum.

Following data have been added in 22nd/e of Park

o Annual parasite incidence has decreased from 3.29 in 1995 to 1.10 in 2011. o Slide positivity rate has decreased from 3.51 in 1995 to 1.41 in 2010

o However, Plasmodium falciparum % has increased from 38.84 in 1995 to 50.3 in 2011

396. Roll back Malaria program is -

- a) Encourage the development of more effective and new anti malarial drugs and vaccines
- b) Encourage the proper and expanded use of insecticide treated mosquito nets
- c) Training of village health workers and mother on early and appropriate treatment of malaria
- d) All of the above

Correct Answer - D

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

The main strategies of Roll Back Malaria initiative are :

- a) Strengthen health system to ensure better delivery of health care, especially at district and community level.
- b) Ensure the proper and expanded use of insecticide treated mosquito nets.
- c) Ensure adequate access to basic health care and training of health care workers.
- d) Encourage the development of simpler and more effective means of administering medicines, such as training of village health workers and mothers on early and appropriate treatment of malaria, especially in children.
- e) Encourage the development of more effective and new anti-malaria drugs and vaccines.

397. Epidemic typhus is transmitted by ?

a) Flea

b) Mite

c) Louse

d) Tick

Correct Answer - C
Ans. is 'c' i.e., Louse

398. Chimney Sweepe's Cancer is also known as -

a) Carcinoma Scrotum

b) Carcinome urinary bladder

c) Carcinoma testis

d) Carcinoma penis

Correct Answer - A

Ans. is 'a' i.e., Carcinoma scrotom [Ref Internet]

"Chimney Sweepe's Cancer, also called soot wort, is a squamous cell carcinoma of the skin of the scrotum".

399. The goal of $NRR=1$ can be best achieved by use of following contraceptive methods -

a) Condom 72/year

b) IUCD

c) Vasectomy

d) Oralpills

Correct Answer - C

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

o Goal of $NRR = 1$ will be reached when $CPR = 60\%$

o To achieve $CPR 60\%$, the most reliable method is vasectomy :?

"If properly performed vasectomies are almost 100% effective"

— Park

o IUCDs have 3-5% failure rate

o OCPs have

o Condoms have 2-15% failure rate

400. Best representation of a population with age variation

a) Life table

b) Correlation coefficient

c) Population pyramid

d) Bar chart

Correct Answer - C

Ans. is 'c' i.e., Population pyramid [Ref Park 23rd/e p. 482 & 22nd/e p. 444]

- The age and sex distribution of a population is best represented by population pyramid
- In countries with high birth rates as ours, it is broad based conical pyramid because of high birth rate and tapering of population with increase in age.
- In developed countries with low birth rate, the pyramid swells in the middle and is narrow at the base and is not so conical at the top. (dumb bell shaped).

401. In India a child is

a) < 8 years

b) < 10 years

c) < 14 years

d) < 18 years

Correct Answer - C

Ans. is 'c' i.e., < 14 years [Ref www.childindia.org.in]

- "The census of India Considers Children to be any person below the age of 14, as do most government programmes"

402. Highest fat content is found in -

a) Wheat

b) Rice

c) Maize

d) Bajra

Correct Answer - D

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

- Among cereals (maize, wheat, rice), maize has highest fat content.
- Amongst millets, bajara has highest fat content
- Bajra has more fat (5gm/100gm) than maize (4.5-4.7 gm/100 gm).

403. Egg yields about K cal of energy

a) 50

b) 60

c) 70

d) 80

Correct Answer - C

Ans. is 'c' i.e., 70

o An egg weighing 60 grams contains.

i) 6 gm of protein ii) 6 gm of fat

iii) 30 mg of calcium

iv) 105 mg of iron

v) 70 Kcal. of energy

404. Egg lacks the following -

a) Protein

b) Cholesterol

c) Carbohydrate

d) Vitamins

Correct Answer - C

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

o Egg contains all nutrients except carbohydrate and Vitamin 'C'.

405. Fibers are maximum in

a) Wheat

b) Oat

c) Rice

d) Corn

Correct Answer - D

Ans. is 'd' i.e., Corn [Ref Textbook of nutrition p. 338]

Wheat bran 42.2

Oat bran 22.2

Soy bran 70.0

Corn bran 82.3

Rice bran 38.0

Barley bran 70.0

406. Carbohydrate reserve of human body

a) 350 gm

b) 600 gm

c) 950 gm

d) 1500 gm

Correct Answer - A

Ans. is 'a' i.e., 350 gm

- Carbohydrate store of body is approximately 350 grams (70 grams hepatic glycogen and 280 grams muscle glycogen).

407. The vitamin B6 contained in plants is less bioavailable than that in animal tissues. Pyridoxine is required for:

a) Urea formation

b) Heme synthesis

c) Amylase

d) Lipoprotein lipase

Correct Answer - B

Pyridoxine (Vitamin B6):

- Vitamin B6 refers to a family of compounds that include pyridoxine, pyridoxal, pyridoxamine, and their 5'-phosphate derivatives.
- 5'-Pyridoxal phosphate (PLP) is a cofactor for enzymes that involved in amino acid metabolism.
- Vitamin B6 also is involved in *heme and neurotransmitter synthesis and in the metabolism of glycogen, lipids, steroids, sphingoid bases, and several vitamins, including the conversion of tryptophan to niacin.*

Severe vitamin B6 deficiency can lead to,

- Peripheral neuropathy
- Abnormal electroencephalograms
- Personality changes that include depression and confusion.

Ref: Russell R.M., Suter P.M. (2012). Chapter 74. Vitamin and Trace Mineral Deficiency and Excess. In D.L. Longo, A.S. Fauci, D.L. Kasper, S.L. Hauser, J.L. Jameson, J. Loscalzo (Eds), Harrison's Principles of Internal Medicine, 18e.

408. National iron plus initiative includes

- a) Biweekly supplementation of iron & FA to 6-60 months of age
- b) Biweekly supplementation of iron & FA to pregnant & lactating woman
- c) Biweekly supplementation of iron & FA to adolescent girls
- d) All of the above are parts of initiative

Correct Answer - A

Ans. is 'a' i.e., Biweekly supplementation of iron & FA to 6-60 months of age [Ref nrhmhp.gov.in]

→ **Under national Iron + Initiative, the following age groups are covered for lifelong supplementation of iron from the age of 6 month onwards:**

- Bi-weekly 20 mg elemental iron and 100 microgram (mcg) folic acid per ml of liquid formulation and age appropriate de-worming for preschool children of 6-59 months.
- Weekly supplementation of 45 mg elemental iron and 400 mcg folic acid per child per day for children from 1st to 5th grade in govt. & Govt. Aided schools, and at AWC for out of school children (6 to 10 years).
- Weekly dose of 100 mg elemental iron and 500 mcg folic acid with biannual de-worming in adolescents (10-19 years) under WIFS
- Weekly supplementation for woman in reproductive age, Pregnant and lactating women.

409. Parboiling is done for

a) Milling process

b) Polishing of rice

c) Preservation of nutrition

d) Storage of rice

Correct Answer - C

Ans. is 'c' i.e., Preservation of nutrition [Ref Park 23/e p. 627-629]

- Parboiling (*partial cooking in steam*) is technique of preserving the nutritive value of rice.
- In parboiling, greater parts of vitamins and minerals present in outer layer of the rice grain are driven into the deeper layers.
- With subsequent milling the nutrient are not removed.

410. Not a synthetic pyrethroid insecticide

a) Propoxur

b) Permethrin

c) Cypermethrin

d) Etofenoprox

Correct Answer - A

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

Insecticides are divided into :

- Fumigants : Hydrogen cyanide, SO₂, methyl bromide, carbon disulphate.
 - Stomach poisons : Paris green, Sodium fluoride.
 - Contact (nerve) poisons : These are divided into
 - Natural : Pyrethrum, rotenone, Derris, nicotine, mineral oil.**
 - Synthetic : These are -**
1. Organophosphates : Malathion, parathion, fenthion, diazinon, fenitrothion, abate, chlorthion, dioxathion, chlorpyrifos, trichlorfon.
 2. Carbamates : Carbaryl, propoxur, dimetilan, pyrolon.
 3. Organochlorine : DDT, BHC (HCH), dieldrin, aldrin, chlordane, lindane, heptachlor.
 4. Synthetic pyrethroid (pyrethrum derivatives) : Pothrin, resmethrin, permethrin, biopermethrin, cypermethrin, cyphenothrin, cycloprothrin, deltamethrin, cyfluthrin, etofenoprox

411. Bangalore method is

a) Controlled tipping

b) Aerobic Composting

c) Anaerobic Composting

d) Sanitary landfill

Correct Answer - C

Ans. is 'c' i.e., Anaerobic Composting [Ref: Park 23rd ed p. 754-758]

There are two methods of composting :

- Bangalore method (Anaerobic hot fermentation process) : Alternate layers of refuse and night soil in proportion of 3:1, with refuse layer both as lowermost as well as uppermost (topmost).
- Indore method or mechanical composting (aerobic process).

412. Not transmitted by mite

a) Scabies

b) Scrub typhus

c) Rickettsial pox

d) Kyasanur forest disease

Correct Answer - D

Ans. is 'd' i.e., Kyanasur Forest disease [Ref Park 23/e p. 768 & 22"/e p. 712]

Mites are the vectors for the following diseases :-

Diseases	Vector
Scabies	Itch mite
Scrub Typhus	Trombiculid mite
Rickettsial pox	Trombiculid mite.

413. Rat flea transmits all the following except

-

a) Plague

b) Salmonellosis

c) Hymenolopsis

d) Endemic typhus

Correct Answer - B

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

o Rat flea Bubonic plague, Endemic typhus, Chiggerosis, Hymenolepis diminut.

414. Which of the following are true regarding KFD ?

a) It is zoonosis

b) Affects monkeys

c) Caused by bacteria

d) a and b

Correct Answer - D

Ans. is 'a' i.e., It is zoonosis & 'b' i.e., Affects monkeys

. KFD is a zoonosis. The transmission cycle involves mainly monkeys and ticks.

Man is an incidental dead end host and plays no part in virus transmission

415. All of the following are duties of an ASHA worker except:

a) All of the following are duties of an ASHA worker except:

b) Primary screening for prevalence of non-communicable diseases

c) Administering zero dose of DPT and OPV

d) Assessing the success of national programs under ANM

Correct Answer - C

Ans: C. Administering zero dose of DPT and OPV

Ref: Park 24^{le} p936, 23^{le} p449, 22^{le} p414; Ministry of Health anti Family Welfare (MoHFW). (2005b). Reading Material for ASHA. Government of India)

- ASHA doesn't receive financial remuneration for administering zero dose of DPT and OPV is not the function of ASHA.
- ASHA Payments under Janani Suraksha Yojana (JSY): On 45th Day:**
- 6 visits in institutional deliveries (Day 3, 7, 14, 21, 28,
 - 7 visits in home deliveries (Day 1, 3, 7, 14, 21, 28, 42).
 - Birth weight record
 - Immunized with BCG, first dose of OPV & DPT
 - Birth registration
 - Mother & child are safe

416. True about ASHA are all except -

a) One per 1000 rural population

b) Mobiliser of antenatal care

c) Female voluntary worker

d) Skilled birth attendant

Correct Answer - D

Ans. is 'd' i.e., Skilled birth attendant

Accredited Social Health Activist (ASHA)

ASHA is the central component of the National Rural Health Mission (NRHM)

National Rural Health Mission (NRHM) was launched to address the health needs of rural population, especially the vulnerable sections of society

o One of the key components of the National Rural Health Mission is to provide every village in the country with a trained female community health activist - 'ASHA' or *Accredited Social Health Activist*. Selected from the village itself and accountable to it, the ASHA will be trained to work as an interface between the community and the *public health system*.

Following are the key components of ASHA:

- ASHA must primarily be a woman *resident of the village* - married/ widowed/ divorced, preferably in the age group of *25 to 45 years*.
 - o She should be a literate woman with formal education up to class eight. This may be relaxed only if no suitable person with this qualification is available.
 - o ASHA will be the first port of call for any *health related demands* of deprived sections of the population, especially women and children, who find it difficult to access health services

o ASHA will be a health activist in the community who will *create awareness on health* and its social determinants and mobilize the community towards local health planning and increased utilization and accountability of the existing health services. She would be a *promoter of good health practices*.

- She will counsel women on birth preparedness, importance of safe delivery, breastfeeding and complementary feeding, *immunization, contraception* and prevention of common infections including Reproductive Tract Infection/ Sexually Transmitted Infection (RTIs/STI s) and care of the young child
 - o She will arrange escort/accompany pregnant women & children requiring treatment/ admission to the nearest pre-identified health facility i.e. Primary Health Centre/ Community Health Centre/ First Referral Unit (PHC/CHC /FRU).
 - o ASHA will provide primary medical care for minor ailments such as diarrhoea, fevers, and first aid for minor injuries. She will be a provider of Directly Observed Treatment Short-course (DOTS) under Revised National Tuberculosis Control Programme
- She will also act as a depot holder for essential provisions being made available to every habitation like Oral Rehyd ration Therapy (ORS), Iron Folic Acid Tablet (IFA), chloroquine, Disposable Delivery Kits (DDK), Oral Pills & Condoms, etc. A Drug Kit will be provided to each ASHA.
 - o The general norm will be '*One ASHA per 1000 population*'. In tribal, hilly, desert areas the norm could be relaxed to one ASHA per habitation, dependant on workload etc.
 - o ASHA would be an **honorary volunteer and would not receive any salary or honorarium**. Her work would be so tailored that it does not interfere with her normal livelihood.

417. Millenium development Goals aim to achieve reduction in MMR by:

a) $1/3$

b) $2/3$

c) $1/4$

d) $3/4$

Correct Answer - D
 $3/4$

418. Provision of PHC was done by

a) Bhore Committee

b) Chadah Committee

c) Shrivastava Committee

d) Bajaj Committee

Correct Answer - A

Ans. is 'a' i.e., Bhore Committee [Ref Park 23rd le p. 874]

Bhore Committee

- It is also known as '*Health Survey and Development Committee*'. Its recommendations were :
 - 1) Integration of preventive and curative services at all administration levels
 - 2) Short term and long term recommendations
- Short term : PHC to cater to a population of 40,000
- Long term (*3 million plan*) : PHC units to be set up with 75 bedded hospital for each 10,000 to 20,000 population
 - 3) Major charger in medical education including 3 months training in social and preventive medicine to prepare 'social physicians'.

419. Which of the following is NOT included under the GOBI strategy advocated by UNICEF for child health?

a) Immunization

b) Using growth charts

c) Breast feeding

d) Inpatient care

Correct Answer - D

UNICEF promotes GOBI campaign for a child health revolution.

It consists of:

- G: using growth charts for monitoring child development
- O: oral rehydration therapy to treat dehydration
- B: breastfeeding
- I: immunization

Ref: Park, 21st edition, page: 856.

420. Mission Indradhanush was started in

a) Jan 2005

b) July 2010

c) Dec 2014

d) March 2016

Correct Answer - C

Ans. is 'c' i.e., Dec 2014

- The Government of India launched Mission Indradhanush on 25th December 2014, to cover children who are either unvaccinated or partially vaccinated against seven vaccine **preventable** diseases, i.e., **diphtheria, whooping cough, tetanus, polio, tuberculosis, measles and hepatitis B.**
- **The goal is to vaccinate all under-fives by the year 2020. Under the programme, four special vaccination campaigns will be conducted between January and June 2015. Intensive planning and monitoring experience of pulse polio immunization programme will be used.**

421. RMNCH+A Strategy, Goals for 2017 are all except

a) Reduction of IMR to 25

b) Reduction of MMR to 100

c) Reduction of TFR to 2.1

d) Reduce anemia in adolescents at 6% annual rate

Correct Answer - D

Ans. is 'd' i.e., Reduce anemia in adolescents at 6% annual rate [Ref Park 23rd/e p. 73]

- Reduce anemia at 6% annual rate in adolescent is coverage target (not goal) for RMNCH + A
- Goals and Targets**
- The 12th Five Year Plan has defined the national health outcomes and the three goals that are relevant to RMNCH+A strategic approach are as follows :
 - Reduction of Infant Mortality Rate (IMR) to 25 per 1,000 live births by 2017.
 - Reduction in Maternal Mortality Ratio (MMR) to 100 per 100,000 live births by 2017.
 - Reduction in Total Fertility Rate (TFR) to 2.1 by 2017.

422. Which is false regarding an Anganwadi worker ?

- a) Part time worker
- b) Undergoes 4 month training
- c) 1 for 1000 children
- d) Selected from the community itself

Correct Answer - C

Ans. is `c' i.e., 1 for 100 children

Anganwadi worker

o Anganwadi workers are under *ICDS scheme*.

o There is an anganwadi worker for a *population of 1000* (not 1000 children).

o She undergoes training in various aspects of health, nutrition and development for **4 months**.

o She is a *part-time worker*.

o She is paid an honorarium of *Rs. 1500 per month*.

423. Positive predictive value is most affected by-

a) Prevalence

b) Sensitivity

c) Specificity

d) Relative risk

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

424. Surveillance every Fortnight is according to which malaria programme

a) Urban malaria scheme

b) National malaria control programme

c) Modified plan of operation

d) Malaria eradication programme

Correct Answer - C

Ans. is 'c' i.e., Modified plan of operation [Ref Park 23rd/e p. 384-87]

- According to modified plan of operation active and passive surveillance should be done every fortnight.
- Under The modified plan of operation, the endemic areas were reclassified according to annual parasite incidence (API)
- with different strategy for control measures.
- The report of the consultative committee of experts indicated that in order to stabilize the malaria situation in the country,
- areas with API 2 and above should be taken up for regular spray operations (every 6 weeks).

425. Reading and writing skills of a moderately mental retarded child

a) Reasonable

b) Basic

c) Minimal

d) None

Correct Answer - B
Ans. is 'b' i.e., Basic

426. Which of the following is used to assess deafness infants?

a) Auditory brainstem response

b) Rinne's Test

c) SISI

d) CALORIE Test

Correct Answer - A

Ans. is 'a' i.e., Auditory brainstem response

[Ref Erenberg A, Lemons J, Sia C, Trunkel D, Ziring P. Newborn and infant hearing loss: detection and intervention. American Academy of Pediatrics. Task Force on Newborn and Infant Hearing, 1998- 1999. Pediatrics. 1999 Feb. 103(2):527-30.]

Tests to assess neonatal hearing loss

1. Otoacoustic emissions
2. Auditory Brainstem response
3. Automated Auditory Brainstem response

427. Type Ad curve is seen in -

a) Eustachian tube obstruction

b) After stapedectomy

c) Middle ear tumours

d) Secretory otitis media

Correct Answer - B

**Ans. is 'b' i.e., After stapedectomy [Ref: Dhingra 5thie p. 29;
Logan Turner 10th/e p. 250]**

428. Eagle syndrome is also known as -

a) Styalgia

b) Ludwig's Angina

c) Pharyngeal bursitis

d) Amourosis

Correct Answer - A

Ans. is 'a' i.e., Styalgia [Ref Essentials of Otolaryngology by Frank E p. 221;

Scott-Brown's Otolaryngology 7Ve Vol .-2 p. 2081]

Styalgia

- Chronic throat pain along the anatomic course of thyrohyoid ligament.
- It is also called Eagle's syndrome
- It is related to unrecognised elongation of styloid process, a clacified stylohyoid ligament, or stylohyoid muscle tendinitis.
- Elongated styloid process protrudes into the tonsillar fossa and puts pressure on the trigeminal, glossopharyngeal,vagus or facial nerves.

429. Hearing loss in Meneire's disease is of what type?

a) Fluctuating SNHL

b) Progressive SNHL

c) Conductive hearing loss

d) Mixed Hearing loss

Correct Answer - A

Ans. is 'a' i.e., Fluctuating SNHL [Ref Dhingra 5thie p. 112, Turner 10thYe p. 335]

- Fluctuating nature of hearing loss is quite characteristic of **Meneire's disease. Initially there is loss of low frequency sound, later both low and high frequencies are involved.**
- **Distortion of sound** occurs in some patients, e.g. a tone of a particular frequency may appear normal in one ear and of higher pitch in the other leading to **diplacusis**.
- Intolerance to loud sounds occurs due to recruitment phenomenon.

430. Halo sign and handkerchief test are positive in

a) CSF Rhinorrhoea

b) Deviated nasal septum

c) Nasal Myiasis

d) Choanal atresia

Correct Answer - A

Ans. is 'a' i.e., CSF Rhinorrhoea [Ref Logan Turner 10^m/e p. 28, Dhingra 5thie p. 179]

- Tissue test (Handkerchief test) and halo sign are for CSF Rhinorrhoea. Detection of CSF Leak
- Biochemical tests**
- Concentrations of Glucose are higher in CSF than in nasal discharge. Glucose value > 30-40 mg% and protein value < 100 mg % (max 200 mg %) support a diagnosis of CSF leak.
 - Presence of p₂ transferrin is the most definitive test for detection of CSF and P₂ transferrin assay is the test of choice when a confirmatory test is needed, **because of high sensitivity as well as specificity.**
 - (3-trace protein (prostaglandin D synthase) is also used, however it is nonspecific as it is also present in human testes, heart and seroma.
- Basic clinical tests**
- Tissue test (Handkerchief test) : - Unlike nasal mucous, CSF does not cause a tissue to stiffen.
 - Filter paper test : - Sample of nasal discharge on a filter paper exhibits a light CSF border and a dark central area of blood, i.e.,

double ring sign or halo sign.

- Queckenstedt test : - Compression of the jugular vein leads to increased CSF leak due to increase in ICP.
- Rhinoscopy : - Visualization of CSF leak from paranasal sinus.

CSF tracers

- Intrathecal fluorescein dye administration, radionuclide cisternography, CT cisternography.

431. A Person hearing two different tones in left and right ear when presented with a single tone. This condition is called

a) Monoaural diplacusis

b) Binaural diplacusis

c) Tinnitus

d) Increased sensitivity to sound

Correct Answer - B

Ans. 'b' i.e., Binaural diplacusis [Ref Tuli 1st ed p. 114]

- **Monaural diplacusis:-** In monaural diplacusis, a listener hears two tones when a single tone is presented to one ear, i.e. one ear hears two different tones when presented one.
- **Binaural diplacusis :-** In binaural diplacusis, a listener hears two different tones in right & left ear when a single tone is presented to both ears.
- Both monaural and binaural diplacusis are caused by **inhomogeneities in the cochlea** that also give rise to spontaneous otoacoustic emissions.

432. Frey's syndrome is caused by ?

- a) Post traumatic nerve fibres of facial nerve with parasympathetic of auriculotemporal nerve
- b) Greater auricular with auriculotemporal nerve
- c) Facial nerve with greater auricular nerve
- d) None

Correct Answer - A

Ans. is 'a' i.e., Post traumatic nerve fibres of facial nerve with parasympathetic of auriculotemporal nerve

Frey's syndrome (gustatory sweating)

- Gustatory sweating or Frey's syndrome involves post-parotidectomy facial sweating and skin flushing while eating.
- The symptoms usually occur several months or even years after parotid surgery.
- The likely pathophysiology is aberrant regeneration of postganglionic secretomotor parasympathetic nerve fibres (originating from the otic ganglion) misdirected through several axonal sheaths of post-ganglionic sympathetic fibres feeding the sweat glands. These sympathetic fibres are to the sweat glands of the skin in the dissected field.
- The frey's syndrome is likely due to injury to auriculotemporal nerve with faulty regeneration, therefore Frey's syndrome is also known as Auriculotemporal syndrome.
- A variant of Frey's syndrome in which there is gustatory facial flushing but not sweating, occurs following facial paralysis due to faulty regeneration following injury to the facial nerve. So, Frey's syndrome is not limited to parotid surgery with injury to auriculotemporal nerve.

433. Conductive hearing loss is seen in all of the following except:

a) Otosclerosis

b) Otitis media with effusion

c) Endolymphatic hydrops

d) Suppurative otitis media

Correct Answer - C

Endolymphatic hydrops i.e menieres disease leads to SNHL and not conductive hearing loss.

434. True about nasal myiasis ?

a) Commonly occurs in ethmoidal polyps patient

b) Results from the ova of fly chrysomia

c) Treated by nasal saline instillation

d) Cannot cause death of the patient

Correct Answer - B

Ans. is 'b' i.e., Results from the ova of fly chrysomia

Nasal myiasis (Maggots in nose)

- It results from the presence of ova of flies particularly chrysomia species in the nose which produce ulceration and destruction of nasal structure. Mostly seen in atrophic rhinitis when the mucosa becomes insensitive to flies laying eggs inside.

Clinical features

- *Initial symptoms (3-4 days maggots)* :- Intense irritation, sneezing, headache, blood stained discharge, lacrimation.
- Later :- Maggots may crawl out of nose and there is foul smell.

Complications

- Destruction of nose, sinuses, soft tissues of face, palate and eyeball. Fistulae in nose and palate. Death occurs due to meningitis.

Treatment

- Chloroform water or vapor must be instilled in order to anaesthetize or kill the maggots and so release their grip from the skin.

435. Which test is used to measure nasal mucociliary clearance?

a) Saccharin test

b) SISI test

c) handkerchief test

d) Endoscopy

Correct Answer - A

Ans. is 'a' i.e., Saccharin test [Ref Arch Dis Child. 1989 Apr; 64(4): 546-550. Measurement of nasal mucociliary clearance. G M Corbo, A Foresi, P Bonfitto, A Mugnano, N Agabiti, and P J Cole]

Nasal mucociliary clearance tests

- Nasal nitric oxide measurement
- *Saccharin test*
- Tests using radioisotope labeled particles.

436. Predisposing factor for Nasal myiasis ?

a) Allergic rhinitis

b) Vasomotor rhinitis

c) Atrophic rhinitis

d) Rhinitis medicamentosa

Correct Answer - C

Ans. is 'c' i.e., Atrophic rhinitis

Nasal myiasis (Maggots in nose)

- It results from the presence of ova of flies particularly chrysomia species in the nose which produce ulceration and destruction of nasal structure. Mostly seen in atrophic rhinitis when the mucosa becomes insensitive to flies laying eggs inside.
- Clinical features
- Initial symptoms (3-4 days maggots) :- Intense irritation, sneezing, headache, blood stained discharge, lacrimation. o Later :- Maggots may crawl out of nose and there is foul smell.
- Complications
- Destruction of nose, sinuses, soft tissues of face, palate and eyeball.
- Fistulae in nose and palate.
- Death occurs due to meningitis.
- Treatment
- Chloroform water or vapor must be instilled in order to anaesthetize or kill the maggots and so release their grip from the skin.

437. A child with unilateral nasal obstruction along with a mass in cheek and profuse & recurrent epistaxis:

a) Juvenile Nasal angiofibroma

b) Glomus tumour

c) Antrochoanal polyp

d) Rhinolith

Correct Answer - A

Nasopharyngeal angiofibroma/ Juvenile nasopharyngeal angiofibroma

- It is a histologically benign but locally aggressive vascular tumor that grows in the back of the nasal cavity.
- It most commonly affects adolescent males.
- Patients with nasopharyngeal angiofibroma usually present with one-sided nasal obstruction and recurrent bleeding.

438. A 2 year old child with intercostal retraction and increasing cyanosis was brought with a history of foreign body aspiration. which might be lifesaving in this situation?

a) Oxygen through face mask

b) Heimlich's manoeuvre

c) Extra cardiac massage

d) Intracaridiac adrenaline

Correct Answer - B

- The child is presenting with cyanosis and intercostal retraction which indicates that the foreign body is lodged in the larynx.
- Initial management for a foreign body lodged in trachea/larynx is Heimlich's maneuver where a person stands behind the child and places his arms around his lower chest and gives four abdominal thrust.
- In infants, lying the child on its back on the adults knee and pressing firmly on the upper abdomen is the preferred maneuver.
- If Heimlich's manoeuvre fails, cricothyrotomy or emergency tracheostomy should be done.
- Once acute respiratory emergency is over foreign body can be removed by direct laryngoscopy or by laryngofissure, if it is impacted.
- Tracheal and bronchial foreign bodies are removed by bronchoscopy with full preparation and under GA.



439. Treatment of choice of Bell's palsy ?

a) Surgical decompression

b) Corticosteroids

c) Electric stimulation

d) Antiviral drugs

Correct Answer - B

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

Treatment of Bell's palsy

- Treatment of Bell's palsy is divided into three : - 1) Medical treatment, 2) Physical treatment, 3) Surgical treatment
- 1. Medical treatment
- **Prednisolone (steroid)** is the drug of choice and is started at initial visit. Initiation of therapy during first 24 hours of symptom confers a higher likelihood of recovery.
- Antiviral therapy (Acyclovir) is a newer adjunct in treating acute facial palsy of viral origin (both Bell's palsy and Ramsay hunt syndrome).
- Most surgeons these days advocate combination of steroids and antiviral drugs.
- 2. Physical treatment
- Physical treatment includes : -
- Eye care : - Artificial tear drops, ocular ointment and use of sunglasses to prevent eye complication due to dry eye.
- Electric stimulation : - To maintain membrane conductivity and reduce muscle atrophy.
- If the patient of Bell's palsy is not responding to conservative treatment, electrodiagnostic study (electrophysiological study) should be done. Electrodiagnostic study includes, electromyography

(EMG), Electroneurography (ENG), minimal excitability test and maximal excitability test. Surgery is reserved for those who meet electrodiagnostic (electrophysiological) study criteria or are worsening on medical treatment.

3. Surgical treatment

- Nerve decompression relieves pressure on the nerve fibers and thus improves the microcirculation of the nerve. Usually vertical and tympanic segments of nerve are decompressed. However, some workers suggest total decompression including labyrinthine segment. Decompression is done in cases who have a poor prognosis for complete recovery with medical therapy alone or in cases who do not respond to medical therapy after 8-12 weeks.

440. 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.

441. Cauliflower ear is due to ?

a) Hematoma

b) Carcinoma

c) Fungal infection

d) Herpes

Correct Answer - A

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

Hematoma of the auricle

- It is the collection of blood between the auricular cartilage and its perichondrium.
- It usually occurs due to blunt trauma and often seen in boxers, wrestlers and rugby players, therefore it is also called Boxer's ear.
- Extravasated blood may clot and then organise, resulting in typical deformity called, Cauliflower ear. If haematoma gets infected, severe *perichondritis* may set in.

442. Crypta magna is seen in:

a) Nasopharyngeal tonsil

b) Tubal tonsil

c) Palatine tonsil

d) Lingual tonsil

Correct Answer - C

The medial surface of palatine tonsils is covered by non keratinizing stratified squamous epithelium which dips into the substance of tonsil in the form of crypts.

One of these crypts is very large and deep and is called crypta magna or intratonsillar deft.

443. Zenker's diverticulum is called as

- a) Prepharyngeal diverticulum
- b) Pharyngobasilar diverticulum
- c) Pharyngotympanic diverticulum
- d) Hypopharyngeal diverticulum

Correct Answer - D

Ans. is 'd' i.e., Hypopharyngeal diverticulum [Ref Dhingra 5thie p. 289 & 4thVe p. 255, 256; Bally & love 23rd/e p. 886]

Hypopharyngeal diverticulum or Zenker's diverticulum or pharyngeal pouch

- It is a **pulsion diverticulum** where pharyngeal musoca herniates through the Killian's dehiscence, a weak area between two parts of the inferior constrictor.
- It is the most common esophageal diverticulum.
- The diverticula **arises posteriorly** in the **midline** of neck. The mouth of the diverticula is in the midline but the sac projects laterally (**usually left laterally**)
- Zenker's diverticula are rarely seen below 30 yrs of age, most patients are over 50.

444. Reactionary hemorrhage occur within:

a) 24 hours

b) 1-2 days

c) 2-4 days

d) 4-6 days

Correct Answer - A

Hemorrhage according to the Time of appearance can be classified as follows

Primary hemorrhage

- Is one which occurs at the time of injury or operation.

Reactionary hemorrhage

- In majority of cases reactionary occurs within 4 to 6 hours. Such bleeding may also occur due to:
 - Restlessness
 - Coughing
 - Vomiting which raises the venous pressure

Secondary hemorrhage

- This occurs usually after 7 to 14 days of injury or operation.
- This is usually due to infection and sloughing of a part of the arterial wall.

445. Following operations are done in case of otosclerosis:

a) Stapedectomy

b) Fenestration

c) Stapedotomy

d) All

Correct Answer - D

Role of surgery in a case of otosclerosis

Surgery forms the mainstay of management in a case of otosclerosis

(Surgery of choice) ↓ Stapedectomy / stapedotomy (surgery of choice)	Lempert's fenestration procedure ↓ Fenestration of the lateral semicircular canal is done. It is reserved for cases where foot plate cannot be mobilized during stapedectomy (Outdated nowadays)	Stapes mobilization ↓ It is done in those cases only in which there is partial ankylosis of footplate of stapes although reankylosis tends to develop a although reankylosis tends to develop
--	--	--

446. A 55 year old known smoker since 25 years presents with a low pitched voice. Endoscopy shows a mass limited to the vocal cord on the left. Biopsy is suggestive of laryngeal cancer type T1N0. Treatment of choice would be

a) Vertical partial hemilaryngectomy

b) Radiotherapy

c) Chemotherapy

d) Total laryngectomy with cervical lymph node dis section

Correct Answer - B

Ans. is 'B' i.e., Radiotherapy [Ref: Dhingra 4th/e p. 284; <http://128.255.52.245/oto/Beta/database/contents>]

Treatment of glottic cancer:

- T, carcinoma : - Radiotherapy is the treatment of choice. Surgery is used only after they recur.
- T_i carcinoma with extension to anterior commissure : - The treatment of choice is radiotherapy.
- If it is unavailable, frontolateral partial laryngectomy is done with regular follow up. If it fails, total laryngectomy is performed.
- T, Ca with extension to arytenoid : - Treatment is same as above but surgery is preferred
- T, carcinoma : - Treatment depends on- i) Mobility of vocal cords, and ii) Involvement of anterior commissure and/or arytenoid :
- If mobility of cord is not impaired (cord is mobile) and anterior commissure and/or arytenoid not involved.

- Radiotherapy is the treatment of choice. In case of recurrence total laryngectomy or partial vertical laryngectomy is done.

447. What is the treatment of unilateral vocal cord paralysis?

a) Speech therapy

b) Urgent tracheostomy

c) Total laryngectomy

d) Cordectomy

Correct Answer - A

Ans. is 'a' i.e., Speech therapy [Ref Essentials otolaryngology 2nd ed p. 740]

Treatment includes : ?

- Speech therapy
- Medialization of cord : - The aim is to bring the paralysed cord towards the midline so that healthy cord can meet it and can prevent aspiration.
This is achieved by -
- Injection of teflon paste lateral to the paralysed cord; i
- Thyroplasty type I;
- Muscle or cartilage implant; or
- Arthrodesis of cricoarytenoid joint.

448. Which agent is used to prevent synechia after DCR surgery

a) Mitomycin

b) Tacrolimus

c) Cyclosporine

d) Doxycycline

Correct Answer - A

Ans. is 'a' i.e., Mitomycin [Ref: Current Diagnosis and Treatment in Otorrhinology 2nd ed p. 506; Ear Nose, Throat & Head and neck Surgery by Dhillon 3rd/e p. 67]

- Now, Mitomycin is being increasingly used for this purpose and is proving more useful
- Mitomycin is an anticancer agent that has shown to decrease scar formation after E.N.T. surgery
- It is an antifibroblastic agent and thus prevents the wound healing and subsequent synechae formation.
- It is useful in preventing synechae formation in following operations :?
- DCR
- Sinus surgery

449. Retroauricular incision in children less than 2 years old may cause damage to which cranial nerve

a) VIII

b) VII

c) VI

d) V

Correct Answer - B

Ans. is 'b' i.e., VII [Ref :*Fundamentals of Pediatric Surgery p1981*

- Retroauricular incision especially in young children may cause damage to facial nerve as it runs very closely

450. Cochlear implants convert what energy to which form of energy

a) Sound energy to mechanical energy to move the hair cells

b) Electrical energy to mechanical energy to move the hair cells

c) Sound energy to electrical impulses

d) Mechanical energy to electrical impulses

Correct Answer - C

Ans. is 'c' i.e., Sound energy to electrical impulses [Ref: NIH Publication No. 11-4798 (2013-11-01)].

451. Treatment of choice for atticotomal type of CSOM?

a) Antibiotics

b) Tympanoplasty

c) Modified radical mastoidectomy

d) None

Correct Answer - C

Ans. is 'c' i.e., Modified radical mastoidectomy

Treatment of atticotomal disease

- Since cholesteatoma is going to expand and destroy bone and mucous membrane, it has to be removed.
- Therefore, surgery is the mainstay of treatment.
- Primary aim is removal of disease by mastoidectomy to make ear safe followed by reconstruction of hearing at a later stage.
- **Modified radical mastoidectomy is the surgery of choice.**
- Two types of surgical procedures (mastoidectomy) are done to deal with cholesteatoma:-
 1. Canal wall down procedures
- These leave the mastoid cavity open into the external auditory canal so that the diseased area is fully exteriorized.
- The commonly used procedures for atticotomal disease are atticotomy, modified radical mastoidectomy and rarely radical mastoidectomy.
- Modified radical mastoidectomy is the procedure of choice.
 2. Canal wall up procedures (cortical mastoidectomy)
- Here disease is removed by combined approach through the meatus and mastoid but retaining the posterior bony meatus wall, thereby avoiding an open mastoid cavity.

- For reconstruction of hearing mechanism myringoplasty or tympanoplasty can be done at the time of primary surgery or as a second stage procedure.

452. Pott puffy tumor is:

a) Hemangioma

b) Osteomyelitis

c) Osteoma

d) None of the above

Correct Answer - B

Pott Puffy Tumor occurs if infection of frontal sinusitis spreads to the marrow of the frontal bone, causing localized osteomyelitis with bone destruction that can result in a doughy swelling of the forehead. Surgical drainage and débridement must be undertaken.

453. Carhart's notch in audiometry is seen in:

a) Ocular discontinuity

b) Haemotympanum

c) Otomycosis

d) Otosclerosis

Correct Answer - D

Carharts notch

- Bone conduction is normal in otosclerosis.
- In some cases there is a dip in bone conduction curve which is maximum at 2000 Hz / 2 KHZ called as Carharts notch.
- Carharts notch is seen only in bone conduction curve.
- It disappears after successful stapedectomy/stapedotomy.
- The reason why it disappears after successful surgery is that when the skull is vibrated by bone—conduction sound, the sound is detected by the cochlea via 3 routes:
 - Route (a)—is by direct vibration within the skull.
 - Route (b)—is by vibration of the ossicular chain which is suspended within the skull.
 - Route (c)—is by vibrations emanating into the external auditory canal as sound and being heard by the normal air-conduction route.
- In a conduction type of hearing loss (as in otosclerosis) the latter two routes are deficient but regained by successful reconstruction surgery. Hence bone conduction thresholds improve following surgery.

454. Depth of anterior chamber of the eye: *March 2007*

a) 2-3 mm

b) 3-4 mm

c) 4-5 mm

d) 5-6 mm

Correct Answer - A

Ans. A: 2-3 mm

The human eye is like two spheres combined, a smaller, sharper curved one and a larger lesser curved sphere. The former, the anterior segment is the front sixth of the eye that includes the structures in front of the vitreous humour: the cornea, iris, ciliary body, and lens.

Within the anterior segment are two fluid-filled spaces:

- The anterior chamber between the posterior surface of the cornea (i.e. the corneal endothelium) and the iris. The depth of anterior chamber of eye is 2.5 mm. It is shallow in the very young and the deep.
- The posterior chamber between the iris and the front face of the vitreous.

Aqueous humor fills these spaces within the anterior segment and provides nutrients to the surrounding structures.

The posterior segment is the back five-sixths of the eye that includes the anterior hyaloid membrane and all of the optical structures behind it: the vitreous humor, retina, choroid, and optic nerve.

The radii of the anterior and posterior sections are 8 mm and 12 mm, respectively. The point of junction is called the limbus. On the other side of the lens is the second humour, the aqueous humour,

which is bounded on all sides: by the lens, ciliary body, suspensory ligaments and by the retina. It lets light through without refraction, helps maintain the shape of the eye and suspends the delicate lens.

455. Corneal curvature measured by ?

a) Keratometry

b) Pachymetry

c) Gonioscopy

d) Perimetry

Correct Answer - A

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

The 'Keratometry' or 'ophthalmometry' is an objective method of estimating the corneal astigmatism by measuring the curvature of central cornea.

Gonioscopy - Biomicroscopic examination of the angle of anterior chamber.

Perimetry - Procedure of estimating the extent of visual fields.

Tonography - Non - invasive technique for determining the facility of aqueous outflow (C - value).

456. Coloured halos are seen in all, EXCEPT

a) Cataract

b) Angle closure glaucoma

c) Corneal edema

d) Corneal opacity

Correct Answer - D
D i.e. Corneal opacity

457. IOL in which can correct astigmatism is -

a) Toric IOL

b) Multifocal IOL

c) PCIOL

d) Premium IOL

Correct Answer - A

Answer- A. Toric IOL

- Toric IOLs refer to astigmatism correcting intraocular lenses used at the time of cataract surgery to decrease postoperative astigmatism.
- The toric lenses currently available are designed to correct regular corneal astigmatism. Patients with irregular astigmatism will not fare as well

458. Centre of biconvex lens is called -

a) Focal point

b) Optical center

c) Epicentre

d) Focal Distance

Correct Answer - B

Answer- B. Optical center

- Optical center is the point in the principal axis of a lens through which light passes without undergoing any deviation. It is in the center of lens.

459. What is the nerve supply of cornea -

a) Maxillary division of trigeminal nerve

b) Facial Nerve

c) Auriculotemporal nerve

d) Ophthalmic division of Cranial nerve V

Correct Answer - D

Answer- D. Ophthalmic division of Cranial nerve V

- The cornea is one of the most sensitive tissues of the body, as it is densely innervated with sensory nerve fibres via the ophthalmic division of the trigeminal nerve by way of 70-80 long ciliary nerves and short ciliary nerves

460. Shield ulcer is seen in -

a) Phlyctenular conjunctivitis

b) Spring Cattarrh

c) Mycotic corneal ulcer

d) Herpetic ulcer

Correct Answer - B

Answer- B. Spring Cattarrh

- Punctuate epithelial keratitis .
- Ulcerative vernal keratutis- shallow transverse ulcer (Shield ulcer)
- Vernal corneal plaques
- Suhepithelial scarring
- Pseudogerontoxon: characterized by a classical "cupids bow" outline.

461. Fundoscopic finding of retinal hemorrhage with white centre is known as?

a) Cotton wool spot

b) Flame shaped hemorrhage

c) Roth spot

d) Drussen

Correct Answer - C

Answer- C. Roth spot

- Roth spots a retinal hemorrhages with white centres, the whitish element thought to be composed of coagulated fibrin in most cases.

462. Which of the following is false about inferior oblique muscle -

a) It is the shortest muscle

b) Supplied by 3th cranial nerve

c) Originates from annulus of zinn

d) Its primary action is extorsion

Correct Answer - C

Answer- C. Originates from annulus of zinn

- It originates from orbital plate of maxilla lateral to the orifice of nasolacrimal duct.
- It is the only muscle to take origin from front of the orbit. Other recti muscle take origin from annulus of zinn.

463. One of the most common complication of iridocyclitis is:

a) Scleritis

b) Secondary glaucoma

c) Band-shaped keratopathy

d) Corneal ulcer

Correct Answer - B
Ans. Secondary glaucoma

464. Most common conjunctivitis in newborn

-

a) Gonococcal

b) Staphylococcal

c) Streptococcal

d) Pneumococcal

Correct Answer - A

Answer- A. Gonococcal

- Causative organism of ophthalmia neonatorum :- Common causes are Gonococcus, Chlamydia, HSV. Other causes are staphylococcus aureus, pneumococcus, streptococcus, pseudomonas, serratia, klebsiella.

465. A 48 year old diabetic with orbital cellulitis presented with a corneal ulcer. An aqueous tap showed branched hyphae. Diagnosis is -

a) Herpetic ulcer

b) Mycotic Ulcer

c) Bacterial Ulcer

d) Anterior staphyloma

Correct Answer - B

Answer- B. Mycotic Ulcer

- Branched hyphae are characteristic morphology in fungal (aspergillus) corneal ulcer.

466. The following phenomenon is responsible for antibiotic resistance in bacteria due to slime production -

a) Co-aggregation

b) Biofilm formation

c) Mutation evolving in altered target site for antibiotics

d) Mutation evolving a target bypass mechanism

Correct Answer - B

Ans. is 'b' i.e., Biofilm formation

. *Slime* is an amorphous, viscid colloidal material that is secreted extracellularly by some bacteria (e.g. *Staph epidermidis*). The slime remains around the bacteria and provides a matrix in which *biofilm* formation can take place.

. In *biofilm* formation the bacterial colony is spread very thinly (300-400nm thick) for e.g. *formation of biofilms on catheters and prosthetic devices*.

. This biofilm formation in the slime provides antibiotic resistance by restricting access of drugs to the bacterium.

467. Glass blowers cataract is caused due to -

a) Wilson's Disease

b) Myotonic Dystrophy

c) Infrared radiation

d) Congenital Rubella

Correct Answer - C

Answer- C. Infrared radiation

- Glassblower's cataracts is formed by many years or decades of exposure to infrared radiation while working in the occupation of glass blowing, or working close to hot or molten metals such with metal foundry workers or blacksmiths

468. Jack in box scotoma is seen after correction of Aphakia by:

a) IOL

b) Spectacles

c) Contact Lens

d) None

Correct Answer - B
Ans. Spectacles

469. All of the following are causes of posterior subcapsular cataract except -

a) Myotonic dystrophy

b) Wilson's Disease

c) Ionizing radiation

d) Congenital cataract

Correct Answer - D

Answer- D. Congenital cataract

- Myotonic dystrophy
- Wilson's disease
- Atopic dermatitis
- Corticosteroids
- Trauma
- Galactosemia
- Infrared/heat cataract (glass-blower's or glass worker)

470. The Investigation To Predict The Visual Outcome After Phacosurgery is -

a) Pachymeter

b) Potential Acuity meter

c) Lensometer

d) Topometer

Correct Answer - B

Answer- B. Potential Acuity meter

- Potential acuity meters (PAMS) measure the VA that the patient is likely to achieve once there are no more opacifications of the ocular media of the eye.
- These clear areas are used to project a target (numbers, letters or stripes) onto the retina using a narrow light beam.
- PAM measurements have been shown to be especially reliable if patients with nuclear sclerotic cataracts are measured, but may be difficult if a posterior subcapsular cataract is present.

471. Oldest lens fibres are found in ?

a) Capsule

b) Cortex

c) Cortex

d) Nucleus

Correct Answer - D

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

Anatomy of crystalline lens

- There are three structural elements that make up lens ?
 - 1) Lens capsule
- A transparent membrane surrounding the lens like a pocket. It is thicker over the anterior surface than the posterior surface. It is thickest at pre- equator region and thinnest at the posterior pole. When an artificial lens replaces the natural lens in cataract surgery (IOL implantation), it is placed in this same capsule.
 - 2) Lens epithelium
- It is a single layer *on the anterior (front) surface of the lens. There is no epithelium on posterior surface.* The epithelial cells distribute fluid, ion and glucose through the entire lens. They also create new fibers throughout a person's life.
 - 3) Lens fibres
- These are long protein fibers that are closely packed and parallel. They make up most of the lens volume and are laid horizontally, front to back, and concentrically like layers of an onion. As the lens fibres are formed throughout the life, these are arranged compactly as nucleus and cortex of the lens.
 - a) Nucleus : - It is the central part containing the oldest fibres. it consists of different zones :-

- i. *Embryonic nucleus* :- Formed at *1-3 months of gestation*, therefore consists the *oldest primary fibres*.
- i. *Fetal nucleus* :- Lies around the embryonic nucleus and is formed from *3 months of gestation till birth*.
- i. *Infantile nucleus* :- Corresponding the lens *from birth to puberty* and surrounds the fetal nucleus.
- i. *Adults* :- Corresponds to the lens fibres formed *after puberty to rest of the life*.
 - b) *Cortex* :- It is *the peripheral part containing the youngest fibres*.
- The ciliary zonules (Zonules of zinn or suspensory ligaments of lens) hold the lens in position and enable the ciliary muscle to act on it. These consist essentially of a series of fibres which run from the ciliary body and fuse into the outer layer of the lens capsule around the equatorial zone.

472. The structure connecting the posterior surface of lens to capsule is called -

a) Hyaloideocapsular ligament of Weiger

b) Vitreous Base

c) Cloquets's Canal

d) Collagen fibres

Correct Answer - A

Answer- A. Hyaloideocapsular ligament of Weiger

- Hyaloideocapsular ligament of Weiger or retrolental ligament is a strong adhesion between the lens and posterior capsule.
- It is a circular adhesion 8-9mm in diameter. This attachment is termed as Egger's Line.
- Within this circle is a potential space called as Space of Burger or Erggelet's space.

473. Power for nuclear fragmentation in phacoemulsification -

a) Ultrasonic

b) Magnetic

c) Thermal

d) Fluid

Correct Answer - A

Answer- A. Ultrasonic

- The ultrasound generating mechanism of the phaco handpiece causes the tip attached to it to vibrate rapidly back and forth.
- The frequency used most commonly is 40 KHz

474. Triple surgery in glaucoma includes all of the following except -

a) Trabaculectomy

b) PCIOL implantation

c) Insertion of drainage device

d) Extra capsular cataract extraction

Correct Answer - C

Answer- C. Insertion of drainage device

- 1. TRABECULECTOMY
- 2. ECCE
- 3. PCIOL INSERTION

475. Endophthalmitis involves inflammation of all of the following, Except

a) Sclera

b) Uvea

c) Retina

d) Vitreous

Correct Answer - A

A i.e. Sclera

Sclera is not involved in endophthalmitis. Involvement of sclera suggests a more severe inflammation or panophthalmitis.

Endophthalmitis

It is inflammation of one or more coats of the eye and adjacent cavities. Inflammation characteristically involves the inner structures of eye ball i.e. uveal tissue (i.e. iris, ciliary body and choroid) and retina associated with pourine of exudates in the vitreous cavity (vitritis)/ posterior or anterior chamberQ

Sclera is sparedQ

Most clinicians require a vitritis before calling an ocular inflammation (eg corneal ulcer with hypopyon or iritis with aqueous cells) an endophthalmitis.

Topical antibiotics: Commonly used topical antibiotics are fortified cefazolin (5%) or vancomycin (5%) with gentamicin or amikacin (1.3%) 1 hourly, alternating every half hour. Cycloplegia is achieved initially with topical atropine 1 % twice a day substituted by short-acting agents after 3-4 days.-

"Intravitreal antibiotics are the treatment of choice and are injected after taking a 0.2-0.3 ml vitreous aspirate for preparing smears and obtaining cultures. A combination of amikacin (0.4 mg in 0.1 ml) or

gentamicin (0.4 mg in 0.1 ml) and ceftriaxone (2 mg in 0.1 ml) or vancomycin (1.0 mg in 0.1ml) is generally recommended

Vitreotomy: Recovery from bacterial and fungal endophthalmitis is hastened by the removal of infected vitreous (vitrectomy) and the introduction of intravitreal antibiotics."

Panophthalmitis

It is inflammation of all three coats of eyeQ (& adjacent cavities i.e. anterior (aqueous) &/or posterior (vitreous) segments).

Panophthalmitis often starts as an endophthalmitis that then involves the *sclera, tenon's capsuleQ* and may also spread to orbital tissue.

476. Which of the following is not a clinical feature of Endophthalmitis?

a) Vitritis

b) Corneal edema

c) Hypopyon

d) Cranial nerve palsies

Correct Answer - D

Answer- D. Cranial nerve palsies

- Clinical features Acute bacterial endophthalmitis occurs within 7 days of operation and is characterized by severe ocular pain, redness, lacrimation, photophobia and marked loss of vision.
- On examination there is swollen lids, chemosis of conjunctiva, conjunctival congestion & circumcorneal congestion, corneal edema, hypopyon, muddy iris, and amaurotic cat's eye reflex due to vitreous exudation.

477. Which of the following antiglaucoma medications can cause drowsiness?

a) Latanoprost

b) Timolol

c) Brimonidine

d) Dorzolamide

Correct Answer - C
C i.e. Brimonidine

478. Treatment of choice in acute congestive glaucoma

a) Pilocarpine

b) Laser iridotomy

c) Timolol

d) Trabeculoplasty

Correct Answer - B

B i.e. Laser iridotomy

In acute congestive glaucoma stage of primary angle closure glaucoma the *fellow eye require prophylactic peripheral iridotomy or surgical iridectomy Q* (as PACG is usually a B/L disease and the fellow eye is in latent, subacute or intermittent stage).

479. Cattle track appearance in fundoscopy is due to?

a) CRAO

b) CRVO

c) Retinitis pigmentosa

d) Diabetic retinopathy

Correct Answer - A

CRAO REF: Elsevier Comprehensive Guide, page 628 Common fundoscopy findings:

Condition	Finding
Optic disc coloboma	Morning glory appearance
CRAO	Cattle track appearance
CRVO	Blood and thunder fundus
Chloroquine toxicity	Bull's eye maculopathy
Quinine toxicity	Cherry red spot
Retinitis pigmentosa	Waxy pallor of optic disc
	Bone spicule pigmentation
Congenital syphilis/ Rubella	Salt and pepper fundus
Sickle cell anemia	Rising sun sign

CMV retinitis

AIDS

Mozzarella pizza
fundus

Cotton wool spots

480. A 33 year old suffers from blunt trauma to the eye. Fundoscopy shows cherry red spot, the probable diagnosis is

a) Retinoblastoma

b) Commotio Retinae

c) Optic nerve transection

d) Posterior Vitreous Detachment

Correct Answer - B

Answer- B. Commotio Retinae

- Berlin's oedema, also called commotio retinae, occurs in blunt trauma to eye. It manifests as milky white cloudiness involving a considerable area of the posterior pole with a 'cherry-red' spot in the foveal region.

481. Confirmatory investigation in retinitis pigmentosa is

a) Optical coherence tomography

b) Pachymetry

c) Visual Acuity testing

d) Electroretinogram

Correct Answer - D

Answer- D. Electroretinogram

- An accurate diagnosis of retinitis pigmentosa relies on the documentation of the progressive loss photoreceptor cell function, confirmed by a combination of visual field and visual acuity tests, fundus and optical coherence imagery, and electroretinography.

482. Raised Intra cranial Pressure will cause:
March 2007

a) Tachycardia

b) Hypotension

c) Papilloedema

d) Normal looking anterior fontanelle in infants

Correct Answer - C

Ans. C: Papilloedema

ICP at rest is normally 7-15 mmHg for a supine adult, and becomes negative (averaging "10 mmHg) in the vertical position. Increased ICP

One of the most damaging aspects of brain trauma and other conditions, directly correlated with poor outcome, is an elevated intracranial pressure.

The body's response to a decrease in CPP is to raise blood pressure and dilate blood vessels in the brain.

This results in increased cerebral blood volume, which increases ICP, lowering CPP further and causing a vicious cycle. Neurologic changes seen in increased ICP are mostly due to hypoxia and hypercapnea and are as follows: decreased LOC, Cheyne-Stokes respirations, hyperventilation, sluggish dilated pupils and widened pulse pressure.

Signs and symptoms of increased ICP

In general, symptoms and signs that suggest a rise in ICP including headache, nausea, vomiting, ocular palsies, altered level of consciousness, and papilledema.

If papilledema is protracted, it may lead to visual disturbances, optic atrophy, and eventually blindness.

In addition to the above, if mass effect is present with resulting displacement of brain tissue, additional signs may include pupillary dilatation, abducens (CrN VI) palsies, and the Cushing's triad. Cushing's triad involves an increased systolic blood pressure, a widened pulse pressure, bradycardia, and an abnormal respiratory pattern.

In children, a slow heart rate is especially suggestive of high ICP. Irregular respirations occur when injury to parts of the brain interfere with the respiratory drive.

In infants and small children, the effects of ICP differ because their cranial sutures have not closed. In infants, the fontanelles, or soft spots on the head where the skull bones have not yet fused, bulge when ICP gets too high.

483. All of the following signs could result from infection within the right cavernous sinus, except:

a) Loss of pupillary light reflex

b) Loss of corneal blink reflex

c) Ptosis

d) Right ophthalmoplegia

Correct Answer - B
Ans. Loss of corneal blink reflex

484. Paralytic squint is

a) Incomitant squint

b) Exophoria

c) Esotropia

d) Heterotropia

Correct Answer - A

Ans. is 'a' i.e., Incomitant squint [Ref Khurana 4th/e p. 320]

- Incomitant squint is a squint in which the angle of deviation differs depending upon the direction of gaze i.e, amount of deviation varies in different directions of gaze .
- There are many type of incomitant squints (paralytic, restrictive, 'A' & 'V' pattern), however the most common type is Paralytic squint and the word incomitant squint is usually used for paralytic squint.
- Therefore, I will explain paralytic squint here.

485. Which of the following Vitamins is being used in Optic Neuritis ?

a) Vitamin A

b) Pyridoxine

c) Vitamin D

d) Vitamin C

Correct Answer - D

Answer- D. Vitamin C

- Intravenous administration of vitamin C can be evaluated as the method of choice for the treatment of patients with ON.

486. True statement about dysthyroid eye disease (grave's ophthalmopathy) is

a) Decreased power of divergence

b) Most common cause of U/L proptosis in

c) Extreme exophthalmos is usually seen in hypothyroidism

d) On looking upwards lower lid does not follow eye movements

Correct Answer - C

C. i.e. Extreme exophthalmos is usually seen in hypothyroidism

A mild exophthalmos is associated with *thyrotoxicosis* and an extreme exophthalmos may be associated with *any state of thyroid activity, but usually in hypothyroidism often after thyroidectomy.*Q

Dysthyroid / Graves-Ophthalmopathy or Endocrine / Malignant-Exophthalmos

• Etiology	General (Thyrotoxicosis)	Clinical Features	Treatment
Autoimmune in which there is antibody mediated attack on orbital	<ul style="list-style-type: none"> • <i>Symptoms</i>Q - Tiredness - Emotional lability - Heat intolerance 	<ul style="list-style-type: none"> • Dalrympe's Sign- <i>Retraction of upper eye lid producing Staring & Frightened appearance</i>Q Mn-"D for Dar" • Von Graefe's 	<ul style="list-style-type: none"> • Ocular <i>Guanethidine</i>Q may decrease lid retraction caused by over.action of <i>muller's muscle</i>Q • Systemic

<i>fibroblast</i>	- Weight loss	Sign-	Steroids &
<i>primarily, extraocular</i>	- Excessive appetite - Palpitation	<i>Lid lag i.e on looking downwards</i> (towards Ground) upperlid follows tardily or not at all	Radiotherapy (if steroids not effective) 1000 rad
<i>muscles being</i>	• <i>Signs</i>	Mn-"Graefe-Lid lag on looking Ground"	from each lateral port for reducing
<i>secondarily involved</i>	- <i>Tachycardia (persist during sleep)</i>	• <i>Stellwag's Sign- Infrequent blinking with deficient closure of lids</i>	orbital edema
• <i>Pathology</i>	- Hot, moist palms	Mn-"S for Still"	• Artificial tears &
Mononuclear cell inflammation	- Agitation	• <i>IVRibius Sign-</i>	Lateral tarsorrhaphy to prevent exposure
with presence of mucopolysacchri muscles	- Thyroid goiter & bruit - Myopathy of proximal muscles	<i>Decreased power of convergence</i> Mn- "M for On looking Medially"	keratopathy
des	• Stages of development of	• <i>Enroth's Sign-</i>	• Prismatic glasses for
predominantly	cardiac arrhythmias	Fullness of eyelids d/1 puffy Edematous swelling	diplopia
hyaluronic acid	- <i>Tachycardia which persist during sleep</i>	Mn- "E for Edematous lid"	• Orbital decompression
together with			
Interstitial edema			

interstitial edema	(characteristic)	Q • Gifford's Sign-	decompression
& inflammatory	- Multiple extra systole	Difficulty in eversion of upper lid	When steroid & RT
cells	- Paroxysmal atrial	• Exophthalmos (Proptosis)	have proved
	tachycardia	• Weakness of extraocular muscles particularly	ineffective two wall
	- Paroxysmal atrial	elevators (<i>inferior oblique</i>)Q causing	(orbital floor & diplopia
	fibrillation	• Conjunctival injection over insertion of recti	medial wall
	- Persistent atrial fibrillation not responding to digoxin	• Increased intra ocular pressure	removed)
		• Superior limbic keratopathy	decompression is done

- 28) Grade 4 Extraocular muscle involvement Q (limitation of movement & diplopia) Grade 5 Corneal involvement (exposure keratitis) Grade 6 Loss of Sight (d/t optic nerve involvement with disc pallor or papilloedema & visual field defect) "
- v:shapes="_x0000_s1026">Graves ophthalmopathy is *most common cause of U/L or B/L proptosis in adults between age of 25-50 years*Q
- Werner Classification reflect severity of ophthalmopathy and is well known by acronym of NO SPECS.
 - Grade 0 - No signs or symptoms
 - Grade 1 - *Only signs (lid retraction with or without lid lag Q & mild proptosis)*
 - Grade 2 - Soft tissue involvement (chemosis, grit, lacrimation, photophobia, lid or conjunctival swelling)
 - Grade 3 *Proptosis Q (minimal*28)
 - Grade 4 *Extraocular muscle involvement Q (limitation of*

movement & diplopia)

Grade 5 Corneal involvement (exposure keratitis)

Grade 6 *Loss of Sight (d/t optic nerve involvement with disc pallor or papilloedema & visual field defect)*

487. Bull's eye lesion seen with:

a) Chloroquine

b) Dapsone

c) Rifampicin

d) Ethambutol

Correct Answer - A
Ans. Chloroquine

488. Grid laser photocoagulation is indicated in:

a) Ischaemic maculopathy

b) Clinical significant macular oedema

c) Macular hole

d) Proliferative diabetes retinopathy

Correct Answer - B

Ans. Clinical significant macular oedema

489. In diabetic retinopathy pan retinal photocoagulation is done by

a) Argon Diode

b) Nd:YAG

c) Holmium

d) Transpupillary thermotherapy

Correct Answer - A
Answer- A. Argon Diode

490. Continuous contact lens wear may lead to

a) Giant papillary conjunctivitis

b) Anterior uveitis

c) Nuclear Cataract

d) Trachoma

Correct Answer - A

Answer- A. Giant papillary conjunctivitis

- Corneal complications : - Corneal abrasion, Corneal edema, Corneal vascularization, Microbial keratitis (pseudomonas, acanthamoeba), Sterile corneal infiltrate.
- Giant papillary conjunctivitis

491. Giant papillary conjunctivitis occurs as an allergic response to all except:

a) Contact lens

b) Intraocular lens

c) Prosthesis

d) Nylon sutures

Correct Answer - B
Ans. Intraocular lens

492. NSAID used commonly for topical ocular use is

a) Ibuprofen

b) Aceclofenac

c) Ketorolac

d) Acetaminophen

Correct Answer - C

Answer- C. Ketorolac

Ketorolac

- Flurbiprofen
- Diclofenac sodium

493. Which of the following cranial nerve is MOST likely to be damaged in a patient with uncal herniation?

a) Facial

b) Trochlear

c) Abducens

d) Oculomotor

Correct Answer - D

In a patient with ipsilateral expanding intracranial supratentorial mass, there is displacement of the hippocampal gyrus and uncal herniation across the tentorial edge, resulting in entrapment of the third nerve. This can result in Hutchinson's pupil. Hutchinson's pupil occurs in comatose patients with unilaterally dilated poorly reactive pupils.

In the third nerve the pupillomotor fibers run peripherally and are subjected to early damage from compression.

Ref: Textbook of Ophthalmology edited by Sunita Agarwal, page 305.

494. Ophthalmic finding of acute meningococcal meningitis are all except

a) Ocular motility palsy

b) Papilloedema

c) Optic neuritis

d) Glaucoma

Correct Answer - D

Answer- D. Glaucoma

- Ophthalmic manifestations of meningococcal meningitis include ocular motility abnormalities due to third, fourth, and sixth nerve palsies and nystagmus.
- Raised intracranial pressure associated with meningitis may cause papilloedema and secondary optic atrophy.
- Optic neuritis and papillitis are potential causes of visual loss in Patients with meningitis.

495. Treatment of CMV retinitis in AIDS patient is

a) Amantadine

b) Fludrabine

c) Oseltamivir

d) Valganciclovir

Correct Answer - D

Answer- D. Valganciclovir

- Valganciclovir- pro-drug of ganciclovir that is taken orally and is as effective for both induction.

496. Following are the features of raised intracranial tension except -

a) Altered sensorium

b) Papilloedema

c) Convulsions

d) Tachycardia

Correct Answer - D
Ans. is 'd' i.e., Tachycardia

497. Reverse split S2 is seen in -

a) Aortic stenosis

b) Aortic stenosis

c) Pulmonary artery hypertension

d) Pulmonary stenosis

Correct Answer - A

Answer- A. Aortic stenosis

- Decreased impedance of the systemic vascular bed
- Prosthetic dilatation of the Aorta secondary to Aortic stenosis or regurgitation.
- Patent ductus arteriosus

498. Hypotension with muffled sound and congested neck veins is seen in?

a) Cardiac tamponade

b) Pericardial effusion

c) constrictive pericarditis

d) Acute congestive heart failure

Correct Answer - A

Answer- A. Cardiac tamponade

- Cardiac tamponade is characterized by accumulation of fluid in the pericardial sac due to various causes.
- The accumulation of pericardial fluid leads to elevation of the pericardial pressure.
- The increased venous pressure may fill the heart and increase the intracavitary pressure to some extent but the transmural pressures i.e, the intracavitary pressure - pericardial pressure are practically zero or even negative.

Beck's triad characteristically associated with cardiac tamponade-

- Increased venous pressure (neck vein distension)
- Decreased arterial pressure
- Muffled heart sounds, silent heart

499. Incorrect about Dresler syndrome is?

a) Post MI pericarditis

b) Post MI pleuritis

c) Autoimmune

d) Treatment with steroids is necessary

Correct Answer - D

Answer- D. Treatment with steroids is necessary

- Dressler's syndrome is due to autoimmunity. It is post MI carditis which may involve pleura.
- Often no treatment is necessary.
- Therapy with corticosteroids is required only in resistant cases.

500. A patient with CHF with LVEF <40% should be given?

a) ACEI + beta blocker

b) ACEI + furosemide

c) ACEI + CCB

d) ACEI + ARB

Correct Answer - A

Answer- A. ACEI + beta blocker

- Patient of heart failure with reduced ejection fraction are treated by a combination of drugs.
- Drug combination- ACE inhibitors + beta blockers

501. Treatment of asymptomatic bradycardia is

a) No treatment is required

b) Give atropine

c) Isoprenaline

d) Cardiac pacing

Correct Answer - A

Ans. is 'a' i.e., No treatment is required

502. WPW syndrome is caused by

a) Bundle Branch Block

b) Right sided accessory pathway

c) Ectopic pacemaker in atrium

d) Left budle Branch block

Correct Answer - A

Ans. is 'b' i.e., Right sided accessory pathway

Anatomy (Location of Accessory pathway) in W.R W syndrome

- Electrophysiological studies and mapping have shown that accessory. Atrioventricular pathways may be located anywhere along the A-V rign or groove in the septum.
- The most frequent locations are : -
- Left lateral (50%), posteroseptal (30%) right anteroseptal (10%).
- Right lateral (10%).
- Preexcitation resulting from left sided accessory is called type A preexcitation.
- Preexcitation resulting from right sided accessory pathway is called type B preexcitation.

503. Post exposure prophylaxis [PEP] for HIV should be given for a minimum period of:
March 2005

a) 4 weeks

b) 6 weeks

c) 8 weeks

d) 10 weeks

Correct Answer - A

Ans. A: 4 weeks

PEP should normally be continued for 4 weeks. This time course, or the drugs used may need to be modified if problems of tolerance and/or toxicity are encountered. Since nausea is a common problem, the prescription of prophylactic anti-emetics should be considered. Anti-motility drugs may be helpful if diarrhoea develops - a common side effect of nelfinavir. A combination of two nucleoside analogue reverse transcriptase inhibitors for less severe exposures and combination of two nucleoside analogue reverse transcriptase inhibitors and a 3rd drug for severe exposures.

504. The feature of JVP in cardiac tamponade is:

a) Prominent x descent with prominent 'y' descent

b) Prominent x descent with absent 'y' descent

c) Absent x descent with prominent 'y' descent

d) Absent x descent with absent 'y' descent

Correct Answer - B

B i.e. Prominent X descent with absent 'Y' descent

505. Internal jugular vein is the continuation of which of the following sinus

a) Cavernous sinus

b) Sigmoid sinus

c) Inferior petrosal sinus

d) Superior petrosal sinus

Correct Answer - B

Internal jugular vein is the direct continuation of the sigmoid sinus

The sigmoid sinuses:

- They are two areas beneath the brain which allow blood to drain inferiorly from the posterior center of the head.
- They drain from the transverse sinuses and converge with the inferior petrosal sinuses to form the internal jugular vein
- Each sigmoid sinus begins beneath the temporal bone and follows a tortuous course to the jugular foramen, at which point the sinus becomes continuous with the internal jugular vein

The internal jugular vein:

- It collects the blood from the brain, from the superficial parts of the face, and from the neck.
- It is directly continuous with the transverse sinus, and begins in the posterior compartment of the jugular foramen, at the base of the skull.
- The thoracic duct on the left side and the right lymphatic duct on the right side open into the angle of union of the internal jugular and subclavian veins.

The external jugular vein:

- It is formed by the junction of the posterior division of the posterior

facial with the posterior auricular vein.

- It commences in the substance of the parotid gland, on a level with the angle of the mandible.

The anterior jugular vein:

- It begins near the hyoid bone by the confluence of several superficial veins from the submaxillary region.
- It descends between the median line and the anterior border of the Sternocleidomastoideus, and, at the lower part of the neck, passes beneath that muscle to open into the termination of the external jugular, or, in some instances, into the subclavian vein

506. Enteropathy type T cell lymphoma is associated with -

a) M.A.L. Toma

b) Celiac Sprue

c) Menetrier disease

d) Crohn's disease

Correct Answer - B

Answer- B. Celiac Sprue

- Enteropathy-type- T cell lymphoma is a rare complication of long-standing celiac disease.

507. Snover's triad in acute cellular rejection of liver transplantation includes all of the following except -

a) Portal inflammation

b) Endothelialitis

c) Cholangitis

d) Periportal fibrosis

Correct Answer - D

Answer- D. Periportal fibrosis

Snover's triad-

1. Mixed portal tract inflammation
2. Bile duct damage
3. Attachment of lymphocytes to endothelium

508. Which of the following is produced by Argentaffinoma of ileum?

a) G.A.B.A.

b) Serotonin

c) Epinephrine

d) Nor-epinephrine

Correct Answer - B

Answer- B. Serotonin

- Argentaffin cells of the carcinoid produce serotonin.
- The metabolites of serotonin are 5HIAA and are used in the diagnosis of carcinoid syndrome.

509. Most common CNS manifestation of Whipple's disease is :

a) Cerebellar ataxia

b) Supranuclear ophthalmoplegia

c) Seizure

d) Dementia

Correct Answer - D

Answer is D (Dementia)

CNS manifestations in Whipples disease include dementia (presenting as confusion in memory loss) along with focal features such as Seizures. Non specific symptoms like Confusion and Memory loss (Dementia) in all likelihood, should be more common a presentation than seizures.

Whipple's disease is a rare multisystemic illness caused by infection with the bacillus '*Tropheryma Whippelii*' Q

- *Essential al Diagnosis include :*
 - a. Malabsorption Q
 - b. Multisystemic involvement along with Fever, Lymphadenopathy and Arthralgias^Q
 - c. Duodenal Biopsy with PAS positive macrophages^Q showing characteristic bacillus (with large cytoplasmic granules)(2)
- *CNS invovement is seen in about 10% of patients. Manifestations include*
 - *Dementia*^Q (confusion and memory loss)
 - Seizures, Coma, Myoclonus^Q
- *Cranial N. findings include Nystagmus and Ophthalmoplegia^Q*
Non specific symptoms like Confusion and Memory loss (Dementia) in all likelihood should be more common a presentation than

in an individual, should be more common a presentation than seizures.

Ophthalmoplegia is due to cranial nerve involvement and not supranuclear in type.

510. CURB-65 score includes all except:

a) Age > 65 years

b) Confusion and elevated blood urea nitrogen > 7 mmol/L

c) Respiratory rate > 30/min

d) Systolic BP < 100 mm Hg and Diastolic BP < 60 mill Hg

Correct Answer - D

Answer- D. Systolic BP < 100 mm Hg and Diastolic BP < 60 mill Hg

Pneumonia Severity Index (PSI) and CURB-65 criteria are used in patients of community-acquired pneumonia to decide severity of illness and which patients merit in-patient/ICU care. Systolic BP of <90 mm Hg (not < 100 mm Hg) is a part of the CURB65 criteria.

**511. All of the following are associated with polyuria except:
September 2007**

a) Diabetes insipidus

b) Diabetes mellitus

c) Rapidly progressive glomerulonephritis

d) Rapidly progressive glomerulonephritis

Correct Answer - C

Ans. C: Rapidly progressive glomerulonephritis

Polyuria is said to occur if a patient passes more than 3 litres of urine per day. Causes of polyuria

Endocrine:

- Diabetes mellitus
- Cranial diabetes insipidus
- Cushing's syndrome

Renal:

Relief of chronic urinary obstruction

- Early chronic pyelonephritis
- Nephrogenic diabetes insipidus syndrome

Iatrogenic:

- Diuretic therapy
- Alcohol

Other drugs, e.g. lithium, tetracyclines

Metabolic:

- Hypercalcemia
- Primary hyperaldosteronism

Psychological:

- Psychogenic polydipsia (compulsive water-drinking)
- Polyuria is an uncommon but serious complication of psychotic illness

Rapidly progressive glomerulonephritis may cause anuria

512. Which of the following is/ are seen in Hyperparathyroidism?

a) Osteitis fibrosa cystica

b) Osteoporosis

c) Dissecting osteitis

d) All the above

Correct Answer - D

Answer- D. All the above

Healing response

- Osteitis fibrosa cystica

Other manifestations

- Absence of lamina dura (demineralization of mandible)
- Pinhead stippling of skull
- Marrow fibrosis

Resorption

- Diffuse bone resorption
- Subperiosteal bone resorption of phalangeal tufts
- Brown tumor of hyperparathyroidism
- Osteoporosis
- Deformity
- Pathological fractures

513. Bleeding crisis in acute idiopathic thrombo-cytopenic purpura is managed by all except -

a) RhIG

b) Prednisolone

c) Intravenous immunoglobulin

d) Eltrombopag

Correct Answer - D

Answer- D. Eltrombopag

- Minor purpura- Intravenous immunoglobulin (1g/kg x 1d)
- Intravenous immunoglobulin
- Severe life threatening bleeding- Intravenous immunoglobulin, High dose of glucocorticoid

514. The presence of small sized platelets on the peripheral smear is characteristic of -

a) Idiopathic thrombocytopenic purpura

b) Bernard soulier syndrome

c) Disseminated intravascular coagulation

d) Wiskott Aldrich syndrome

Correct Answer - D

Ans. is 'd' i.e., Wiskott Aldrich syndrome

o Characteristics of Wiskott Aldrich syndrome

(a) Severe eczema

(b)

Thrombocytopenia

(c) Recurrent infections

o The platelets are not only reduced in number but more characteristically are small.

o Other characteristic abnormality seen in Wiskott Aldrich syndrome is that peripheral T cells appear bald and devoid of microvilli.

Bernard Soulier disease

o Autosomal recessive

o Inherited deficiency of platelet membrane glycoprotein complex (Ib-IX). This glycoprotein is receptor for von willebrand factor (vWF) and is essential for normal platelet adhesion to collagen.

o Giant platelets are seen

o Platelet adhesion is decreased

o Platelet aggregation is decreased with Ristocetin but normal with collagen and ADP.

Remember

o In Bernard soulier disease GPIb (platelet receptor for vWF) is defective.

o While in Glanzmann's thrombasthenia GPIIb-IIa (receptor for

fibrinogen) is absent.

515. Positive dipstick for RBC with red color urine and red supernatant and clear sediment with positive dipstick -

a) Porphyria

b) Hematuria

c) Hemolysis

d) Rhabdomyolysis

Correct Answer - D

Answer- D. Rhabdomyolysis

- If a urine dipstick of the red supernatant is positive for heme, the patient has either hemoglobinuria or myoglobinuria.
- If a urine dipstick of the red supernatant is negative for heme, the patient may have one of a variety of unusual conditions

516. A 45 year old lady with normal PT and increased aPTT. About 2 year back, she was operated for cholecystectomy & did not have any bleeding episode. What is next investigation for clinical diagnosis ?

a) Factor VIII assay

b) Dilute russel viper venom assay

c) Platelet aggregation test

d) Ristocetin cofactor assay

Correct Answer - B

Answer- B. Dilute russel viper venom assay

- Dilute Russel viper venom test is one of the test to detect lupus anticoagulant.
- Lupus anticoagulant is associated with prolongation in PTT and thrombosis (no bleeding)

517. In hemophilia B what is most common cause of death -

a) Hemorrhage

b) HIV, HBV, HCV due to transfusions

c) Transfusion reaction

d) Deep vein thrombosis

Correct Answer - A

Answer- A. Hemorrhage

- Most common cause of death in hemophilia b Hemorrhage,
- Infectious complications are also an important cause of death

518. Transformation of CLI/SLL into DLBCL is called -

a) Richter syndrome

b) Evans syndrome

c) Li Fraumeni syndrome

d) Kostmann syndrome

Correct Answer - A

Answer- A. Richter syndrome

- Richter's transformation is development of an aggressive large-cell lymphoma in the setting of underlying chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL).

519. Most common heavy chain disease is

a) Franklin disease

b) Seligmann disease

c) Mu heavy chain disease

d) Waldenstrom cryoglobulinemia

Correct Answer - B

Ans. is 'b' i.e., Seligmann Disease (Alpha heavy chain disease)

520. Anosmia is early clinical feature of

a) Alzheimer

b) Parkinson's disease

c) Huntington's chorea

d) All of the above

Correct Answer - D

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

Main causes of anosmia

- Main causes of anosmia
- Nasal.
- Smoking.
- Chronic rhinitis (allergic, atrophic, cocaine, infectious-Herpes, influenza).
- Overuse of nasal vasoconstrictors.
- Olfactory epithelium.
- Head injury with tearing of olfactory filaments
- Cranial surgery.
- Subarachnoid hemorrhage, meningitis.
- Toxic (organic solvents, certain antibiotics-aminoglycosides, tetracyclines, corticosteroids, methotrexate, opiates, L-dopa).
- Metabolic (thiamine deficiency, adrenal and thyroid deficiency, cirrhosis, renal failure, menses).
- Wegener granulomatosis.
- Compressive and infiltrative lesions (craniopharyngioma, meningioma, aneurysm, meningoencephalocele).
- Degenerative disease (Parkinson, Alzheimer, Huntington)
- Temporal lobe epilepsy.

- Malingering and hysteria

521. Cowden syndrome is associated with -

a) Medulloblastoma

b) Astrocytoma

c) Dysplastic gangliocytoma

d) PNET

Correct Answer - C

Answer- C. Dysplastic gangliocytoma

- Cowden syndrome- Dysplastic gangliocytoma of the cerebellum (Lhermite- duclos disease)

522. . Most common cause of Carcinomatous meningitis -

a) Carcinoma breast

b) Carcinoma lung

c) Carcinoma gut

d) Malignant melanoma

Correct Answer - A

Answer- A. Carcinoma breast

- Carcinoma breast is the most common cause of carcinomatous meningitis.

523. 32 years old AIDS positive female presented with headaches and nuchal stiffness. On lumbar pumbar examination clear CSF was obtained with leucocytes > 100/cu.mm. India ink staining was positive. The most probable. The most probable diagnosis is -

a) Candida Meningitis

b) Tubercular Meningitis

c) Cryptosporidium

d) Cryptococcus meningitis

Correct Answer - D

Answer- D. Cryptococcus meningitis

- Features of meningitis in a patient with India ink staining positive is highly suggestive of cryptococcal meningitis.

524. DOC for listeria meningitis -

a) Ampicillin

b) Cefotaxime

c) Ceftriaxone

d) Ciprofloxacin

Correct Answer - A

Answer- A. Ampicillin

- The antibiotic of choice for listeria infection is ampicillin or penicillin G.

525. A Patient presents with headache and Nuchal rigidity, Lumbar Puncture was performed and CSF Shows normal protein and normal glucose with clear CSF.

Microscopic examination of CSF showed 50 lymphocytes/cu mm with lymphocytic pleocytosis. What is the diagnosis?

a) Bacterial meningitis

b) Viral meningitis

c) Neoplastic meningitis

d) Fungal meningitis

Correct Answer - B

Answer- B. Viral meningitis

- Increased lymphocytes monocytes present.

526. The most common cause of embolic stroke

a) Non rheumatic atrial fibrillation

b) Carotid artery atherosclerosis

c) Paradoxical embolism

d) LV aneurysm

Correct Answer - A

Ans. is 'a' i.e., Non rheumatic atrial fibrillation

- Non rheumatic atrial fibrillation leads to clot formation in left atrial appendage that can embolize to the brain leading to neurological deficits

527. Hemiplegia is most often caused by thrombosis of ?

a) Anterior cerebral artery

b) Middle cerebral artery

c) Posterior cerebral artery

d) Basilar artery

Correct Answer - B

Ans. is 'b' i.e., Middle cerebral artery

Middle Cerebral Artery

- Deep branches of the middle cerebral artery on the *lenticulostriate branches supply the internal capsule (posterior limb)*.
- *Motor tracts are densely packed in this region and hence occlusion of deep branches or lenticulostriate branches leads to Dense Hemiplegia/Pure motor Hemiplegia.*
- Anterior choroidal artery supplies the posterior limb of internal capsule (and not anterior limb of internal capsule).
- Anterior choroidal artery arises from the internal carotid artery and supplies the posterior limb of internal capsule. The complete syndrome of anterior choroidal artery occlusion consists of contralateral hemiplegia hemianesthesia (hypoesthesia) and homonymous hemianopia

Posterior Cerebral Artery

- *The posterior cerebral artery supplies the midbrain, thalamus lateral geniculate bodies, posterior of chroid plexus, occipital lobes, inferior and medial aspect of the temporal lobe and posterior inferior areas of the parietal lobe*

Occlusion of the Posterior Cerebral Artery usually results in two common clinical syndrome depending on the areas

involved

P1 Syndrome

Occlusion of the *proximal segment of PCA from its origin to its union with the posterior communicating artery*

P1 syndrome present primarily with the following signs

Midbrain signs

Thalamic signs

Subthalamic signs

P2 Syndrome

Occlusion of the *distal segment of PCA distal to the junction of PCA with the posterior communicating artery*

P2 syndrome presents primarily with the following signs

Temporal lobe signs

Occipital lobe signs

528. About fibromyalgia all are true except

- a) Associated with EEG abnormalitie
- b) More common in males than females
- c) Associated with low free cortisol levels
- d) Associated with decreased blood flow to brain

Correct Answer - C

Ans. is 'b' i.e., More common in males than females

Fibromyalgia is more common in females.

- *It is* associated with disturbed sleep physiology.
- The sleep anomaly is alpha wave intrusion during NREM stage 4.
- **There are 5 main measurable neuroendocrine abnormalities are associated with dysfunction of the HPA axis seen in fibromyalgia. These include :-**
- Low free cortisol levels in 24-hour urine samples.
- Loss of the normal circadian rhythm, with an elevated evening cortisol level (when it should be at its lowest level).
- Insulin-induced hypoglycemia associated with an overproduction of ACTH.
- Low levels of growth hormone.
- Stimulated ACTH secretion leading to insufficient adrenal release of glucocorticoids

**529. Which of the following is NOT seen in ARDS:
March 2013**

a) Pulmonary edema

b) Hypercapnia

c) Hypoxemia

d) Stiff lung

Correct Answer - B

Ans. B i.e. Hypercapnia

ARDS/ Diffuse alveolar damage/ Shock lung

- Hypoxia,
- Hypocapnia,
- Acute onset of respiratory failure,
- Ground glass appearance on chest X-ray
- Air bronchogram sign is positive
- Associated with:
 - Pancreatitis,**
 - Trauma,
 - Multiple blood transfusions etc.

530. All of the following criteria are required for diagnosis of obesity hypoventilation syndrome except -

a) Hypertension

b) Sleep disorder breathing

c) BMI 30 kg/m²

d) PaCO₂. 45 mmHg

Correct Answer - A

Answer- A. Hypertension

- OHS is defined as daytime hypercapnia and hypoxemia in an obese patient with sleep-disordered breathing in the absence of any other cause of hypoventilation

531. Acute hyponatremia becomes symptomatic at

a) < 135 mEq

b) < 125 mEq

c) < 120 mEq

d) < 110 mEq

Correct Answer - B

Ans. is 'b' i.e., < 125 mEq

Serum level of sodium at which symptoms develop

Acute < 125 meq/L

Chronic < 120 meq/L

- Hyponatremia is commonly defined as a serum sodium < 135 mmol/L (< 135 mEq/L). Neurological symptoms
- occur at different levels of low sodium, depending not only on the absolute value but also on the rate of fall.
- In patients with hyponatremia that develops over hours, life-threatening seizures and cerebral edema may occur
- at values as high as 125 mmol/L.
- In contrast, some patients with more chronic hyponatremia that has slowly developed over months to years may be asymptomatic even with serum levels < 110 mmol.

Acute or hyperacute hyponatremia

- The hyponatremia developed within the previous 24 hours, it is called "acute."
- *If the hyponatremia developed over just a few hours due to a marked increase in water intake (self-induced water intoxication, as may be seen in marathon runners, psychotic patients, and users of ecstasy), it is called "hyperacute."*

Chronic hyponatremia

- If it is known that the hyponatremia has been present for more than 48 hours, or if the duration is unknown (such as in patients who develop hyponatremia at home), it is called "chronic."

Mild to moderate hyponatremia

- Mild hyponatremia is usually defined as a serum sodium concentration between 130 and 135 meq/L.
- Moderate hyponatremia is often defined as a serum sodium concentration between 121 and 129 meq/L.

Severe hyponatremia

- Severe hyponatremia can be defined as a serum sodium of 120 meq/L or less.

Symptoms of hyponatremia

Absent symptoms

- Patients with hyponatremia are frequently asymptomatic, particularly if the hyponatremia is chronic and of mild or moderate severity (ie, serum sodium >120 meq/L).
- However, such patients may have subclinical impairments in mentation and gait.

Mild to moderate symptoms

- Mild to moderate symptoms of hyponatremia are relatively nonspecific and include headache, nausea, vomiting, fatigue, gait disturbances, and confusion.
- *In patients with chronic hyponatremia (ie, >48 hours duration), these findings are not associated with impending herniation; however, in patients with more acute hyponatremia, such symptoms should be considered ominous and may evolve without warning to seizures, respiratory arrest, and herniation.*

Severe symptoms

- Severe symptoms of hyponatremia include
 - u Seizures
 - Obtundation
 - Coma
 - Respiratory arrest.

532. All are false statement about pyridoxine except -

a) Deficiency can cause hemolytic anemia

b) Deficiency can cause hypochromic anemia

c) RDA for pyridoxine 5 mg

d) Can cause burning foot syndrome

Correct Answer - B

Answer- B. Deficiency can cause hypochromic anemia

- Vitamin B deficiency cause hypochromic microcytic anemia since its derivative pyridoxal phosphate (PLP) is a cofactor for the enzyme aminolevulinic acid synthase which is the first enzyme involved in heme biosynthesis.

533. alder-Reilley bodies are seen in -

a) Mucopolysacharidosis

b) Langerhans Histiocytosis

c) Alport's syndrome

d) Chediak-Higashi syndrome

Correct Answer - A

Answer- A. Mucopolysacharidosis

- Alder Reilly granules are larger than normal azurophilic and basophilic granules (Alder-Reilley bodies) in the cytoplasm of granulocytes, monocytes and lymphocytes seen in patients with mucopolysaccharodosis, mucopolysulfatidosis and lipofuscinosis.

534. Not seen with vitamin C toxicity -

a) Abdominal pain

b) Kidney stones

c) Hemolysis

d) Thrombosis

Correct Answer - D

Answer- D. Thrombosis

Abdominal pain, diarrhoea, nausea

- Increased prevalence of kidney stones (oxalate stones)
- Iron overload (in patients on supplemental iron)
- Hemolysis (Glucose 6 phosphate dehydrogenase deficiency)

535. Vitamin E deficiency presents with all except -

a) Ataxic gait

b) Peripheral neuropathy

c) Ophthalmoplegia

d) Peri-follicular rash

Correct Answer - D

Answer- D. Peri-follicular rash

- Areflexia
- Progression to an ataxic gait
- Decreased vibration and position sensations
- Ophthalmoplegia
- Skeletal myopathy
- Pigmented retinopathy

536. Unipolar flagellate organism that causes pneumonia -

a) Pseudomonas

b) Mycoplasma

c) Aeromonas

d) Klebsiella pneumonia

Correct Answer - A

Answer- A. Pseudomonas

- Pseudomonas aeruginosa is a Gram-negative, aerobic rod shaped and polar-flagella bacterium with unipolar motility.

537. A child presents with a history of scorpion sting. He is having increased sweating. What is the next best step -

a) Lytic cocktail

b) Atropine

c) Antivenom

d) Local xylocaine infiltration

Correct Answer - A

Ans. is 'a' i.e., Lytic cocktail

o Lytic cocktail contains promethazine + pethidine + chlorpromazine.

o Lytic cocktail therapy alone or in combination with steroids is useful in the treatment of peripheral circulatory failure in scorpion sting.

538. Pontiac fever is caused by:

a) Legionella

b) Listeria

c) Scrub typhus

d) Leptospira

Correct Answer - A

Ans. (a) Legionella

Pontiac fever is a mild nonfatal influenza like illness caused by Legionella pneumophila.

Pontiac fever,

- An acute self limiting flue like illness with IP of 24-48 hours
- Malaise, fatigue and myalgia are the most frequent presenting symptoms
- Pneumonia doesn't develop.
- Complete recovery takes place, without antibiotic therapy.
- Diagnosis is established by antibody detection.

539. Which of the following is not seen tubercular meningitis -

- a) Evidence of old pulmonary lesions or a miliary pattern is found on chest radiography.
- b) Culture of CSF is diagnostic in majority of cases and remains the gold standard.
- c) It is most often in young children but also develops in adults.
- d) Cerebrospinal fluid reveals a low leukocyte count.

Correct Answer - D

Answer- D. Cerebrospinal fluid reveals a low leukocyte count.

CSF shows increased leukocytes (especially lymphocytes) in TB meningitis.

- Tubercular meningitis is seen most often in young children but also develops in adults, especially those infected with HIV
- Tubercular meningitis results from the hematogenous spread of primary or post primary pulmonary TB.
- Culture of CSF is diagnostic in up to 80% of cases and remains the gold standard

540. Ramsay hunt syndrome all are true except:

a) VII Nerve is involved

b) Facial muscle are involved

c) Facial vesicle is seen

d) Herpes zoster is etiologic agent

Correct Answer - C

Ans. C Facial vesicle is seen

Vessicles in Ramsay hunt syndrome are seen in the preauricular skin, the skin of ear canal the soft palate and not on facial skin All other options are correct and explained in the perceeding text.

541. Fever blisters can occur due to:

a) HHV-6

b) Varicella Zoster virus infection

c) Primary HSV-1 infection

d) Reactivation of HSV-1

Correct Answer - D

Ans. d. Reactivation of HSV-1

- Fever blisters can occur due to reactivation of HSV-1. Oral vesicular lesions of mouth (fever blisters, cold sores) are more commonly associated with recurrent infection than the primary infection.
- "The most common site of cutaneous herpes infection is the face-on the cheeks, chin, around the mouth or on the forehead. Lesions may also appear on the buttocks in infants as 'napkin rash'. The typical lesion is the 'fever blister' or herpes febrilis, caused by viral reactivation in febrile patients."
- lips are common, most patients develop prodromal symptoms about 24 hours before the appearance of painful lesions at the lip borders.

542. Mauriac's syndrome is characterized by all except

a) Diabetes

b) Obesity

c) Dwarfism

d) Cardiomegaly

Correct Answer - D

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

Mauriac Syndrome

- Children with poorly controlled type I diabetes may develop Mauriac syndrome. It is characterized by : -
- Growth attenuation
- Delayed puberty
- Hepatomegaly
- Abnormal glycogen storage and steatosis
- Cushingoid features
- Rare in modern era of insuling therapy but is occasionally reported.

543. All of the following are features of hyperthyroidism except:
September 2007

a) Rise in BMR

b) Delayed deep tendon reflexes

c) Weight loss

d) Moist skin

Correct Answer - B

Ans. B: Delayed deep tendon reflexes

Features of hyperthyroidism

- Increased heat production - warm, moist skin, heat intolerance
- Telangiectasia, palmar erythema, pretibial myxoedema, onycholysis
- Weight loss, increased appetite, increased frequency of bowel movement but frank diarrhoea is uncommon.
- Oligomenorrhoea
- Tachycardia, exertional dyspnoea, hyperdynamic circulation; systolic hypertension is common and diastolic
- hypertension can occur in up to 30% of patients
- Tiredness, irritability, nervousness
- Fine tremor, hyperkinesias, hyperreflexia, muscle wasting
- There are eye signs in Graves' disease

Others:

- Occasionally, bone pain due to osteoporosis
- In elderly patients, there may be atrial fibrillation or cardiac failure
- Alopecia, pruritus, pretibial myxoedema, acropachy (form of clubbing)

Atypical presentation may include:

- Atrial arrhythmias in middle aged patients
- Severe proximal myopathy with normal CK values
- Deterioration or unmasking of myasthenia gravis
- Hypokalaemic periodic paralysis - especially in orientals
- Chronic diarrhoea
- Hypercalcaemia
- Osteoporosis
- Gynaecomastia

544. All of the following are features of thyrotoxicosis, EXCEPT-

a) Diastolic murmur

b) Soft non ejection systolic murmur

c) Irregularly, irregular pulse

d) Scratching sound in systole

Correct Answer - A

Answer is A (Diastolic murmur) :

Thyrotoxicosis is associated with a systolic murmur. It is not associated with any diastolic murmur.

Cardiovascular manifestations of thyrotoxicosis:

- Sinus tachycardia^Q is the most common^Q manifestation of Thyrotoxicosis.
- Midsystolic murmur^Q heard best at left sternal border with or without Systolic ejection click.
- Means lerman scratch^y: It is a systolic scratchy sound heard at the 2nd left intercostal space during expiration. It is thought to result from rubbing of hyperdynamic pericardium against the pleura
- Angina and heart failure may be precipitated by hyperthyroidism in patients with underlying heart disease.

545. Photosensitivity is seen with deficiency of which vitamin -

a) Niacin

b) Pyridoxine

c) Folic acid

d) Vitamin D

Correct Answer - A

Answer- A. Niacin

Loss of appetite

- Generalized weakness and irritability
- Abdominal pain, and vomiting
- Bright red glossitis
- Characteristic skin rash that is pigmented and scaling, particularly in skin areas exposed to sunlight Photosensitivity.
- Vaginitis and esophagitis also may occur.

546. Menke's disease" is a disease of

- a) Impaired zinc transport
- b) Impaired copper transport
- c) Impaired magnesium transport
- d) Impaired molybdenum transport

Correct Answer - B

Ans. is 'b' i.e., Impaired copper transport

Menke's disease is caused due to defect in the copper transport.

- *There is defect in the transport of copper present in the intestinal mucosa to the blood stream.*
- *The mucosal lining of intestine contains high level of copper bound to metallothionein protein.*
- *Rather than being transported to bloodstream, the copper remained in the mucosa and was lost when intestinal cells were naturally sloughed off.*

Menkes disease is caused due to defect in the "MNK" gene.

- *The protein normally function by moving copper from the intestinal mucosal cells into the blood stream, where it is bound by proteins such as albumin and transported to organs and tissues.*

Serum copper is critical for the functioning of several enzymes

Lysyl oxidase → It is important for the cross linking of collagen and elastin such that deficiencies lead to problems in connective tissues such as bones

Cytochrome oxidase → Involved in temperature maintenance

Tyrosinase → Necessary for pigmentation

Clinical features of menkes disease

- Growth retardation

- *Coarse hair, brittle and ivory white (result of depigmentations). The hair fibres are twisted and broken helically (kinky hair).*
- Seizures
- *Cerebral and cerebellar degeneration (postmortem analysis)*
- Hypothermia
- *Thrombosis*
- Poor bone development
- Increased tendency towards aneurysms

547. Which of the following is not seen in Vitamin D deficiency:

a) Increased alkaline phosphate

b) Decreased phosphate in urine

c) Hypophosphatemia

d) Decreased serum calcium

Correct Answer - B

Answer is B (Decreased phosphate in urine):

Vitamin D deficiency is associated with PTH induced phosphaturia or increased phosphate in urine.

548. Most common Cause of pseudaneurysm of aorta is

a) Smoking

b) Trauma

c) Marfans Syndrome

d) Age related degeneration

Correct Answer - B

Answer- B. Trauma

- Aortic pseudoaneurysms are contained ruptures of the aorta in which the majority of the aortic wall has been breached, and luminal blood is held in only by a thin rim of the remaining wall or adventitia. **They typically occur from focal aortic transection-**
 - .. penetrating trauma
 - .. Blunt trauma

549. Most common site of aortic aneurysm rupture is

a) Descending thoracic aorta

b) Arch of aorta

c) Aortic Root

d) Infraarenal aorta

Correct Answer - D

Answer- D. Infraarenal aorta

- Ruptured aneurysm is the most common cause of aortic rupture and they are most common in the abdomen.

550. Most common site of traumatic aortic rupture is

a) Descending thoracic aorta

b) Descending thoracic aorta

c) Arch of aorta

d) Aortic Root

Correct Answer - A

Answer- A. Descending thoracic aorta

- The proximal descending aorta, where the relatively mobile aortic arch can move against the fixed descending aorta (ligamentum arteriosum), is at greatest risk from the shearing forces of sudden deceleration. Thus the aorta is at greatest risk in frontal or side impacts, and falls from heights.

551. Which of the following will not lead to respiratory distress after Thyroid Surgery -

a) Laryngomalacia

b) Bilateral recurrent laryngeal nerve injury

c) Hypocalcemia

d) None

Correct Answer - D

Ans is None

- All the given conditions are able to cause resp. distress.
- Endocrine surgery of Head & Neck writes
- *"The reason for airway compromise include :
bilateral recurrent laryngeal nerve injury
tracheal malacia from longstanding tracheal compression caused by a large thyroid mass
subglottic edema from laryngeal involvement with tumor,
tracheal invasion by tumor
post-op hemorrhage or hematoma."*
Hypocalcemia can also cause stridor by causing laryngeal spasm

552. The most sensitive imaging modality to detect early renal tuberculosis is ?

a) Intravenous urography

b) Computed tomography

c) Ultrasound

d) Magnetic Resonance Imaging

Correct Answer - A

Ans. is 'a' i.e. Intravenous urography

- In early renal tuberculosis, the only radiological abnormality may be *irregularity or destruction of one or more papillae* and the most sensitive modality to detect it is IUV as it can show detailed calyceal anatomy.
- Advanced changes are :?
 - a) Calcification - this may occur in any part of genitourinary tract, most commonly in kidney, next in ureter.
 - b) Cavities
 - c) Fibrosis leading to obstruction
 - fibrotic strictures of the pelvis or ureters lead to hydronephrosis
 - strictures of the calyceal neck leads to hydrocalyces (or hydrocalicosis)
 - d) Bladder changes
 - bladder wall may appear thickened and trabeculated and bladder may be small, contracted. - in later stages VUR may develop
- Computed tomography shows advanced changes well, but is less sensitive in early stages as it cannot show detailed calyceal anatomy.



553. Which of the following develops from an unerupted tooth?

a) Dental cyst

b) Dentigerous cyst

c) Both of the above

d) None of the above

Correct Answer - B

Dentigerous (follicular) cysts are epithelial-lined, developmental, odontogenic cysts.

Fifteen to eighteen percent of jaws cysts are dentigerous, surround the crowns, and attach at the cemento-enamel junction of unerupted teeth.

The lower third molars and the upper canines are the most commonly involved teeth.

The cyst develops subsequent to an accumulation of fluid between the remnants of the enamel organ and the contiguous tooth crown.

Ref: Smith R.A. (2012). Chapter 25. Jaw Cysts. In A.K. Lalwani (Ed), *CURRENT Diagnosis & Treatment in Otolaryngology—Head & Neck Surgery*, 3e.

554. Structure arising from the apex of infected non vital tooth is

a) Dentigerous Cyst

b) Odontogenic Keratocysts

c) Radicular Cyst

d) Gorlin Cysts

Correct Answer - C

Answer- C. Radicular Cyst

Is the most common type of jaw cyst.

- Radicular cyst develops at the apex of an infected, nonvital tooth.
- If the tooth is removed and the cyst persists, it is called a residual cyst
- There is a bimodal incidence within the third and sixth decades of life and they are rarely seen in the primary dentition.
- Usually presents as a radiolucent lesion around the apex of a tooth root.

555. Commonest posterior mediastinal tumour is -

a) Lung cyst

b) Neurofibroma

c) Dermoid

d) Thyroid

Correct Answer - B
Ans. is 'b' i.e., Neurofibroma

556. All are seen in Thoracic outlet syndrome except ?

a) Mass in the Neck

b) Wasting of forearm muscles

c) Adson's test positive

d) Pallor

Correct Answer - B

Ans. is 'b' i.e., Wasting of forearm muscle

557. A lady with a long stading thyroid nodule is planned for a subtotoal thyroidectomy. Before the surgery the surgeon must check/ do

a) Serum Calcium levels

b) Serum PTH assay

c) Indirect Larngoscopy

d) Iodine 131 scan

Correct Answer - C

Answer- C. Indirect Larngoscopy

- Nerve Damage to recurrent / superior laryngeal nerve is a known complication of thyroidectomy.
- Hence it is important to document the state ofthe vocal cords before surgery to prevent litigation liability.

558. The recommended treatment for preputial adhesions producing ballooning of prepuce during micturition in a 2-year-old boy is -

a) Wait and watch policy

b) Circumcision

c) Dorsal slit

d) Preputial adhesions release and dilatation

Correct Answer - B

Ans is 'b' circumcision

- Ballooning of prepuce during micturition is suggestive of phimosis.
Phimosis
 - When the opening of the prepuce is so small that it cannot be retracted over the glans penis, the condition is called phimosis.
 - **Phimosis is of two types**
 - (1) Congenital
 - (2) Acquired - It usually presents late in life and is associated with:
?
 - (a) *Inflammation**
 - (b) *Trauma**
 - (c) *Balanitis xerotica obliterans*
 - (d) *Cancer*
- Clinical features
- Difficulty in micturition : It is the main symptom. In a case of typically congenital phimosis the mother complains that when the child micturates *the prepuce balloons* out and the urine comes out in thin stream.
- In old cases patient presents with
 - (i) recurrent balanitis (inflammation of glans) causing pain and

purulent discharge

(ii) paraphimosis (the tight foreskin gets retracted and stuck behind the glans penis)

- Complications

(a) *Balanoposthitis* — (inflammation of glans and prepuce) (d) *Hydroureter, hydronephrosis*

(b) *Prepuccial stones or calculus*

(e) *Carcinoma*

(c) *Paraphimosis*

- Treatment- the treatment is circumcision * Note — *If phimosis is associated with considerable infection dorsal slit is performed.*

559. All of the following operations for morbid obesity are restrictive, Except:

a) Vertical banded gastroplasty

b) Adjustable gastric banding

c) Roux-en-Y gastric bypass

d) Duodenal switch

Correct Answer - D
Ans is 'd' i.e Duodenal switch

560. Smoking is a risk factor for which of the following conditions

a) Periductal mastitis

b) CA Breast

c) Mondor's Disease

d) Fibroadenoma

Correct Answer - A

Answer- A. Periductal mastitis

- Zuska's disease, also called recurrent periductal mastitis, is a condition of recurrent retroareolar infections and abscesses.
- Smoking has been implicated as a risk factor for this condition.
- This syndrome is managed symptomatically by antibiotics coupled with incision and drainage as necessary

561. Phytobezoars are composed of

a) Hair

b) Vegetable Matter

c) Undigested food

d) Desquamated epithelial cells

Correct Answer - B

Answer- B. Vegetable Matter

- Phytobezoars are composed of vegetable matter and, are usually seen in association with gastroparesis or gastric outlet obstruction.

562. All of thre following are causes of death in burn patients except -

a) ARDS

b) Shock

c) Sepsis

d) Hyperkalemia

Correct Answer - D

Answer- D. Hyperkalemia

- Shock
- Hypothermia
- Sepsis
- ARDS
- Multiple organ failure

563. Which among the following is the most common thyroid malignancy in children?

a) Papillary carcinoma

b) Follicular carcinoma

c) Medullary carcinoma

d) Thyroid lymphoma

Correct Answer - A

Majority of thyroid carcinomas of childhood are of differentiated type, with *papillary thyroid carcinoma being the most common malignant tumor* in this age group, followed by follicular carcinomas.

Medullary thyroid cancer which constitutes 5% of pediatric thyroid malignancies, is usually associated with multiple endocrine neoplasia type 2(MEN2) in the pediatric population.

Primary thyroid lymphoma or neoplasia metastatic to the thyroid gland is uncommon in adults and is extremely rare in childhood.

564. Current gold standard to detect ductal carcinoma in situ breast is:

a) Mammography

b) MRI

c) USG

d) CT/PET

Correct Answer - B
Ans. MRI

565. All of the following are poor prognostic markers of CA Breast except

a) PCNA Positivity

b) ER positivity

c) Her 2 neu positivity

d) p53 over expression

Correct Answer - B

Answer- B. ER positivity

- Patients with hormone receptor positive tumor show good response to hormone therapy.
- Tumors positive for estrogen or progesterone receptors have a higher response rate to endocrine therapy than tumors that do not express estrogen or progesterone receptors.
- Tumors positive for one receptor and not the other have an intermediate response rate.

566. All are true statement about malignant melanoma except -

a) Clark's classification used for prognosis

b) Women have better prognosis

c) Acral lentigenous have better prognosis

d) Limb perfusion is used for local treatment

Correct Answer - C

Ans. is 'c' i.e., Acral lentigenous have better prognosis

567. Moh's micrographic excision for basal cell carcinoma is used for all of the following except -

a) Recurrent Tumour

b) Tumor less than 2 cm in diameter

c) Tumors with aggressive histology

d) Tumors with perineural invasion

Correct Answer - B

Ans. is 'b' i.e., Tumor less than 2 cm in diameter

Moh's micrographic surgery is indicated for tumors in areas (eg. eyelids or nose) where minimal amounts of tissue removal is important. Moh's surgery involves checking the base and edges under a *microscope* before the surgical repair of the site.

In Mohs micrographically controlled surgery, the clinically apparent tumor is often removed by curettage or excision. The surgeon then removes a *thin layer of tissue*, usually less than 1 mm in thickness, of surrounding epidermis and either dermis or subcutis, which then is examined under the microscope. The tumor is removed and processed to allow for localization of any tumor that might persist. This process allows the surgeon to take additional section (stages) from the location where the tumor persists.

- Advantages: Mohs micrographically controlled surgery has the highest cure rate of any treatment modality (99% for primary BCC, 90-95% for recurrent BCC), spares as much uninvolved skin as possible.
- Disadvantages: Mohs micrographic surgery is time consuming, and patients might require additional anesthesia before each stage. Indications for this technique include the following:

indications for this technique include the following.

a tumor of aggressive histopathology (infiltrative);

a large tumor (more than 2 cm in diameter and located on the face, more than 4 cm in diameter in other locations); a tumor in high-risk location (e.g., central face);

a tumor for which conservation of tissue or vital structures is necessary;

a radiation-induced tumor

If indicated Moh's micrographic surgery is the *treatment of choice* for basal cell carcinoma.

568. Which is the investigation of choice for retroperitoneal soft tissue sarcomas

a) MRI

b) CT Scan

c) USG

d) PET scan

Correct Answer - B

Answer- B. CT Scan

- CT is the investigation of choice for retroperitoneal soft tissue sarcomas.

569. Spermatoceles are most commonly found at

a) The Head of epididymis

b) Testis

c) Prostate

d) Seminal Vesicles

Correct Answer - A

Answer- A. The Head of epididymis

- Spermatoceles typically arise from the caput (head) of the epididymis, which is located on the superior aspect of the testicle.

570. Testing of recipient cells against donor serum is

a) Major Cross Matching

b) Minor Crossmatching

c) Direct Coomb's Test

d) Rh Group Matching

Correct Answer - B

Answer- B. Minor Crossmatching

- Minor cross-match: Recipient red cells are tested against donor serum to detect donor antibodies directed against a patient's antigens.
- This is no longer required. It is assumed that the small amount of donor serum and antibodies left in a unit of packed cells will be diluted in a recipient

571. Long term complication of live kidney donors are

a) Hypertension

b) HPV Infection

c) Renal Carcinoma

d) Pyelonephritis

Correct Answer - A

Answer- A. Hypertension

Hypertention

- Cardiovascular risks
- **Preoteinuria**
- End stage renal disease

572. The benefits of stopping smoking before surgery are all except

a) Better wound healing

b) Better mucociliary clearance

c) Better bone healing

d) Less risk of malignancies associated with smoking

Correct Answer - D

Answer- D. Less risk of malignancies associated with smoking

Acute smoking has been associated with increased ST depression during anesthesia.

- Decreased risk of graft failure.
- Decreased wound related complications such as dehiscence and infection.
- Increased rate of bone healing.
- Reduced length of admission.
- Permanent smoking cessation reduces the risk of heart disease, stroke, cancer and premature death

573. Which suture is absorbed in 180 days

a) Polydioxanone

b) Catgut

c) Chromic Catgut

d) Nylon

Correct Answer - A

Answer- A. Polydioxanone

- Polydioxanone suture provides wound support for longer period as compared to other synthetic absorbable sutures.
- Polydioxanone suture also offers far superior tensile strength. Polydioxanone suture is made from polymerizing para dioxanone monomer.

574. Which of the following is true about grade 4 burns

a) Involves all layers of the skin

b) Involves the whole skin along with subcutaneous tissue

c) Includes electric burns

d) Involves the dermis partially

Correct Answer - B

Answer- B. Involves the whole skin along with subcutaneous tissue

575. False regarding Bochdalek hernia is -

a) Spleen and kidney can herniate

b) Occurs posterolaterally

c) Always occurs on right side

d) Hernia may or may not have sac

Correct Answer - C

Ans. is 'c' i.e., Always occur on the right side

- Bochdalek hernia occurs mostly on left side (80%)
- I have no idea about option 'd'

576. Hernia occurring in a potential space posterior to gastrojejunostomy is called

a) Bochdalek's Hernia

b) Peterson's Hernia

c) Littre's Hernia

d) Richter's Hernia

Correct Answer - B

Answer- B. Peterson's Hernia

- Petersen hernias are a type of internal hernia which occurs in the potential space posterior to a gastrojejunostomy.
- This hernia is caused by the herniation of intestinal loops through the defect between the small bowel limbs, the transverse mesocolon and the retroperitoneum, after any type of gastrojejunostomy.

577. Circumcision cannot be used in management of

a) Phimosis

b) Severe balanitis xerotica

c) Paraphimosis

d) Penile Cancer

Correct Answer - D

Answer- D. Penile Cancer

- Phimosis
- Balanitis
- Posthitis
- Paraphimosis
- Severe UTIs

578. Most common cancer in men is

a) Bladder cancer

b) Colorectal cancer

c) Prostate cancer

d) Oral cancer

Correct Answer - C

Answer- C. Prostate cancer

- Cancers in males in India: Lip / oralcavity > Prostate > Colorectum > Pharynx (other than nssopharynx) > Larytx

579. Virchow's cells are seen in:

a) Henoch scholein purpura

b) Toxic Epidermal necrolysis

c) Congenital Syphilis

d) Leprosy

Correct Answer - D
D. i.e. Leprosy

580. All of the following are contraindications for breast conserving surgery except

a) Tumours more than 4cm in size

b) Multicentricity

c) Centrally located tumour

d) Prior neoadjuvant chemotherapy

Correct Answer - D

Answer- D. Prior neoadjuvant chemotherapy

- Involves resection of the primary breast cancer with a margin of normal-appearing breast tissue, adjuvant radiation therapy with or without assessment of axillary lymph node status.

581. All of the following are symptoms of VIPomas except

a) Watery Diarrhoea

b) Hypokalemia

c) Flushing

d) Thromboembolism

Correct Answer - D

Answer- D. Thromboembolism

- VIPomas are endocrine tumors that secrete excessive amounts of vasoactive intestinal peptide (VIP).
- Excessive VIP causes a distinct syndrome characterized by large-volume diarrhea, hypokalemia, and dehydration.
- This syndrome also is called Verner-Morrison syndrome, pancreatic cholera and WDHA syndrome for watery diarrhea, hypokalemia, and achlorhydria.

582. Total gastrectomy is preferred for which type of gastric cancers

a) Proximal Cancer

b) Distal Cancer

c) Ulcerating cancer in the body

d) Polypoidal cancer in the antrum

Correct Answer - A

Answer- A. Proximal Cancer

For proximal gastric carcinoma

- For extensive tumors (eg. Linitis plastica)
- To obtain negative margins for distal gastric carcinoma

583. All of the following are true about Asiatic cholangitis except -

a) Clonorchis sinensis is a causative factor

b) Increased risk of cholangiocarcinoma

c) Also known as oriental cholangitis

d) Does not cause jaundice

Correct Answer - D

Answer- D. Does not cause jaundice

- Oriental cholangiohepatitis (or recurrent pyogenic cholangiohepatitis) is a condition essentially found in Southeast Asia and is characterised by intra- and extrahepatic bile duct strictures and dilatation with intraductal pigmented stone formation.

Clinical presentation

- The common clinical presentation is that of recurrent RUQ pain, fever and jaundice. Leukocytosis with elevated alkaline phosphatase and bilirubin are seen.

Pathology

- The exact aetiology is not well understood but strongly association with hepatobiliary infestation with Clonorchis sinensis (liver fluke) or ascaris lumbricoides have been implicated.

584. Cause of congestive splenomegaly is

a) Visceral Leishmaniasis

b) Budd Chiari Syndrome

c) Gaucher's Disease

d) Hodgkin's Lymphoma

Correct Answer - B

Answer- B. Budd Chiari Syndrome

Causes of congestive splenomegaly

- Budd Chiari Syndrome
- Hepatic vein obstruction
- Portal vein obstruction

585. The water shed area in the marginal artery of Drummond is at

a) Junction of proximal 2/3rd and distal 1/3' of transverse colon

b) Junction of Ascending and transverse colon

c) Splenic flexure

d) At rectosigmoid junction

Correct Answer - C

Answer- C. Splenic flexure

- The blood supply of colon is derived from the marginal artery of Drummond.
- It is a paracolic anastomotic artery formed by anastomosis between colic branches of superior mesenteric artery (ileocolic, right colic, middle colic) and colic branches of inferior mesenteric artery (left colic and sigmoidal arteries),

586. Charcot's triad is defined by all of the following except:

September 2007, March 2009

a) Fever

b) Gall stones

c) Jaundice

d) Pain

Correct Answer - B

Ans. **B:** Gall stones

Cholangitis is due to partial or complete obstruction of the biliary tree with resulting bile stasis and secondary bacterial or microbial infection of the biliary tree

Causes ?

- Common bile duct stones
- Benign biliary stricture (primary sclerosing cholangitis)
- Malignancy (head of pancreas adenocarcinoma, ampulla of Vater, bile duct tumors)
- Chronic pancreatitis
- Prosthesis or stents in the common bile duct

Features:

- Charcot's triad - right upper quadrant pain, fever, jaundice
- Reynolds' pentad - right upper quadrant pain, fever, jaundice, hypotension, and mental status changes (delirium, anxiety, and coma)
- Nausea and/or vomiting
- Right upper quadrant tenderness (mild to moderate)

587. Which of the following is true about varioliform gastritis

a) It is a type of acute gastritis

b) It is characterized by nodules, thickened folds and erosions

c) Diagnosis is difficult to make on endoscopy

d) It is a common form of gastritis

Correct Answer - B

Answer- B. It is characterized by nodules, thickened folds and erosions

- Varioliform gastritis is currently recognized as a special kind of chronic gastritis characterized by nodules, thickened fugal folds and erosions.
- These features appear to be unusual and different from those seen in chronic gastritis.

588. Normal portal vein pressure is -

a) < 3 mm Hg

b) 3-5 mm Hg

c) 5-10 mm Hg

d) 10 to 12 mm of Hg

Correct Answer - C

Ans. is 'c' i.e., 5-10 mm Hg

589. A patient comes with hematemesis and malena. On the upper GI endoscopy there was no significant finding. 2-days later the patient rebleeds. Next line of investigation is

a) Emergency angiography

b) Repeat upper GI endoscopy

c) Enteroscopy

d) Laprotomy

Correct Answer - D

Ans. is 'd' i.e. Laprotomy

CSDT writes - *"Regardless of the cause, if bleeding recurs after it has once stopped the chances of success without operation are low.*

Most patients who rebleed in the hospital should have surgery.

In 85% of patients, bleeding stops within a few hours of admission.

About 25% of patients rebleed once bleeding has stopped.

Rebleeding episodes are concentrated with the first 2 days of hospitalization, and if the patient has had no further bleeding for a period of 5 days, the chances of rebleeding is only 2%.

Rebleeding is most common in patients with varices, peptic ulcer, anemia or shock.

About 10% of patients require surgery to control bleeding, and most of these patients have bleeding ulcers, or less commonly, esophageal varices. The death rate is 30% among pts who rebleed and 3% among those who do not. The mortality rate is also high in the elderly and in patients who are already hospitalized at the onset

of bleeding. Analysis of large series of patients suggests that a number of those who died would not have done so if operations had been performed earlier and more often."

590. A 23 year old lady presents with acute right sided lower abdominal pain since 4 hours. There is tenderness at McBurney's point. Which investigation is best suited to confirm the diagnosis of appendicitis

a) CT Scan

b) Plain Xray

c) Serum ESR

d) MRI Abdomen

Correct Answer - A

Answer- A. CT Scan

Clinical feature are suggestive of appendicitis.

- Right lower quadrant pain is a common clinical presentation. Because of low cost and easy availability, USG is sometimes preferred, but it is often inconclusive.
- Spiral CT is the imaging modality of choice in patients presenting with right lower quadrant pain as it helps make a definitive diagnosis in the majority of cases

591. Investigation of choice in appendicitis in adults

a) CT Scan

b) USG

c) Serum ESR

d) MRI Abdomen

Correct Answer - A
Answer- A. CT Scan

592. All of the following are known predisposing factors for cholangiocarcinoma except :

a) CBD stones

b) Clonorchis sinensis

c) Ulcerative colitis

d) Primary sclerosing cholangitis

Correct Answer - A

Answer is A (CBD stone) :

Cholelithiasis is not clearly a predisposing factor for Cholangiocarcinoma - Harrison

The predisposing factors of cholangiocarcinoma include :

1. Chronic hepato-biliary parasite infection (Clonorchiasis or Asiatic cholangio-hepatitis) Q
2. Congenital Anomaly with ectatic ducts (Choledochal cyst). Q
3. Sclerosing cholangitis Q
4. Ulcerative colitis
5. Occupational exposure to carcinogens^Q(Rubber + Automotive plants)

Note: Nodular lesions that arise at the bifurcation of hepatic ducts are called Klatskin tumors. Q

593. All of the following structures are removed in right hemicolectomy except

a) Caecum

b) Ascending Colon

c) Transverse colon

d) Hepatic Flexure

Correct Answer - C

Answer- C. Transverse colon

Structures removed in right hemicolectomy:

- Caecum with appendix
- Ascending colon
- Hepatic flexure
- Proximal transverse colon
- Part of terminal ileum
- Fat and lymphnodes

594. Colonic polyp that has maximum chance of malignant

a) Hyperplastic polyp

b) Adenomatous polyp

c) Juvenile polyp

d) Polyp of Peutzeger syndrome

Correct Answer - B

Ans. is 'b' i.e., Adenomatous polyp

595. Which of the following colonic polyps is not pre-malignant?

a) Juvenile polyps

b) Hamartomatous polyps associated with Peutz-Jeghers Syndrome

c) Villous adenomas

d) Tubular adenomas

Correct Answer - A

Answer is A (Juvenile Polyps):

Juvenile Polyps is the single best answer of choice.

Juvenile polyps (sporadic), in general occur singly and being hamartomatous lesions have no malignant potential-Robbins

Juvenile polyps are benign polyps - Sabiston

Pathologically hamartomas are considered benign and devoid of malignant potential. However hamartomatous polyps associated with Autosomal dominant hereditary syndromes have now been established to carry a small malignant potential (Rare)

- *Juvenile Polyps are benign but Juvenile Polyps in association with Juvenile Polyposis syndrome carry small malignant potential.*

The juvenile polyps in Juvenile polyposis syndrome are usually hamartomas but they may contain adenomatous elements and may progress to adenomas. This syndrome is associated with increased risk of (9 – 25%) of colorectal cancer. Mutation in Tumor suppressor gene SMAD4 are believed to cause 50 % of Reported cases.

- *Sporadic Hamartomatous polyps are benign but Hamartomas in association with Peutz Jaghers Syndrome may carry a small malignant potential.*

Peutz Jaghers Syndrome is associated with increased risk (2-10%) of cancer in the intestinal tract. (Sabiston) The malignant potential of polyps associated with Peutz Jaghers Syndrome is small – CSST.

Review of Hereditary gastrointestinal polyposis syndromes

Hereditary *autosomal dominant*^Q gastrointestinal polyposis syndromes

High Malignant Potential Q (<i>histologically adenomas</i> Q)			Rare (small) Malignant (<i>histologically adenomas</i>)	
Syndrome	Distribution	Associated	Syndrome	Distribution
Familial colonic Polyposis	Large intestine	None	Peutz Jagher's syndrome	SI > LI > Stomach
Gardner's syndrome	Large intestine > small intestine	Osteomas Lipomas Fibromas Epidermal cyst Ampullaty Ca Desmoid Brain Tumours	Juvenile polyposis syndrome	LI > SI > Stomach
Turcot's syndrome	Large intestine			

596. Which one of the following conditions commonly predisposes to Colonic carcinoma?

a) Ulcerative colitis

b) Crohn's disease.

c) Diverticular disease

d) Ischaemic colitis

Correct Answer - A

Answer is A (Ulcerative colitis)

Malignant potential is seen in both ulcerative colitis and Crohn's disease, but ulcerative colitis is a more important risk factor than Crohn's and hence the answer of choice here. Diverticular disease and ischaemic colitis do not predispose to cancer.

The risk of cancer in CD is considerably less than in patients with chronic U.C' - Ruhlmanns.

Confusing fact:

- The cancer risk in CD and UC are probably equivalent for similar extent and duration of disease -- Harrison 16th/ 1788
- Patients with Crohn's pancolitis have similar risk —
Thus while certain texts are now suggesting that the cancer risk for both CD & UC are probably equivalent, these are other texts which identify U.C. as a significantly more important cause. As we have to pick one single best answer, the option of choice remains U.C.

597. A 50 year old male known case of ulcerative colitis presents with distention of the abdomen of acute onset with vomiting. The next investigation would be

a) Abdominal X ray

b) USG

c) CT scan

d) MRI abdomen

Correct Answer - A

Answer- A. Abdominal X ray

- Toxic megacolon is defined as a transverse colon with a diameter of more than 5.0 to 6.0 cm with loss of haustration.
- Although usually associated with ulcerative colitis, toxic megacolon can also be seen in Crohn's disease.
- Plain abdominal radiographs are essential for the diagnosis and management of toxic megacolon (toxic colitis)

598. Most common site for squamous cell carcinoma esophagus is:

a) Upper third

b) Middle third

c) Lower third

d) Gastro-esophageal junction

Correct Answer - B

Answer is B (Middle 1/3rd)

The most common site of squamous cell carcinoma of esophagus is middle 1/3rd.

Site of squamous cell carcinoma	Percentage of total
Upper 1/3 rd	20%
Middle 1/3 rd	50%
Lower 1/3 rd	30%

599. Investigation of choice in obstructive jaundice is:

a) ERCP

b) Ultrasound

c) Cholecystography

d) X-ray

Correct Answer - B
Ans. Ultrasound

600. "String of beads" appearance on horizontal abdominal view X-ray is suggestive of:

a) Intussusception

b) Sigmoid volvulus

c) Small bowel obstruction

d) Large bowel obstruction

Correct Answer - C
Ans. Small bowel obstruction

601. Which investigation is used to assess the resectability of CA Pancreas?

a) Contrast enhanced CT Scan

b) MRI abdomen

c) USG

d) ERCP

Correct Answer - A

Answer- A. Contrast enhanced CT Scan

Investigations done in pancreatic cancer

- USG
- CT scan
- ERCP
- Endoscopic U/S
- Angiography
- Barium studies - barium meal & hypotonic duodenography
- Contrast enhanced CT scan is the investigation of choice

602. Colonic Diverticulosis and diverticulitis is maximally seen in

a) Sigmoid colon

b) Rectum

c) Transverse colon

d) Ascending colon

Correct Answer - A

Answer- A. Sigmoid colon

- The sigmoid colon is the segment of large bowel with the highest incidence of diverticula, and it is by far the most frequent site for involvement with Diverticulitis.

603. A 10 month old infant presents with acute intestinal obstruction. Contrast enema X-ray shows the intussusceptions, Likely cause is

a) Payers patch hypertrophy

b) Mekel's diverticulum

c) Mucosal polyp

d) Duplication cyst

Correct Answer - A

Ans. is 'a' i.e., Peyer's Patch Hypertrophy

- Bailey writes - *"The condition is encountered most commonly in children, in whom it occurs in an idiopathic form, with a peak incidence at 3-9 months. Between 70% and 90% cases are classed as idiopathic, and an associated illness such as gastroenteritis or urinary tract infection is found in 30%. It is believed that hyperplasia of Peyer's patches in the terminal ileum may be the initiating event. This may occur secondary to weaning. In light of the seasonal variation, with peak incidence in spring and summer, it may be related to upper respiratory tract infection pathogens such as adenovirus or rotavirus."*
- Intussusception associated with a known pathologic lead point is seen in older children. The *most common* lead point is *Meckel's diverticulum*.
- This patient is 10 months old, so most likely the cause should be hypertrophy of Peyer's patches.

604. Which of the following is TRUE about Zenker's diverticulum

a) It is asymptomatic

b) Occurs in the mid-esophagus

c) Treatment is simple excision

d) It occurs in children

Correct Answer - C

Answer- C. Treatment is simple excision

- Zenker's diverticula are mucosal outpouchings occurring through the triangular bare area (Killian's triangle") between the
- upper oblique fibres and lower horizontal fibres of the inferior constrictor muscle, in lower part of pharynx.
- Zenker's diverticulum is a pulsion diverticulum.
- Zenker's is the most common esophageal diverticula.
- Zenker's diverticula are rarely seen below 30 yrs of age, most patients are over 50.
- The diverticula arises posteriorly in the midline of neck.

Treatment-

- Treatment is excision of pouch and cricopharyngeal myotomy
- Dohlman's procedure
- Endoscopic laser treatment

605. All of the following may lead to pigment gall stones except -

a) Chronic Hemolysis

b) Hepatocellular Carcinoma

c) Alcoholic Cirrhosis

d) Biliary tract infection

Correct Answer - B

Answer- B. Hepatocellular Carcinoma

- Demographic/genetic factors: Asia, rural setting
- Chronic hemolysis
- Alcoholic cirrhosis
- Pernicious anemia
- Chronic biliary tract infection, parasite infections (Escherichia coli, Ascaris lumbricoides, Clonorchis sinensis)
- Increasing age
- Ileal disease, ileal resection or bypass
- Cystic fibrosis

606. Which of the following are hardest renal stones

a) Calcium Oxalate

b) Struvite

c) Xanthine

d) Cysteine

Correct Answer - A

Answer- A. Calcium Oxalate

- Pure calcium phosphate stones and calcium monohydrate stones are the densest per volume of stone.
- Among the given options calcium oxalate stones are densest (hardest).

607. Which of the following is true about medullary CA of thyroid

a) Associated with MET oncogene

b) Elevated levels of Serum calcitonin

c) Seen in MEN I syndrome

d) Most common thyroid cancer

Correct Answer - B

Answer- B. Elevated levels of Serum calcitonin

- In Medullary carcinoma serum calcitonin is increased, whose function is to lower serum calcium levels.
- So hypocalcemia maybe found associated with MTC.
- **Seen in MEN II A and B**
- Associated with RET Protooncogene

608. All of the following can be done in a case of pelvic fracture with pelvic hematoma and had not passed urine since trauma EXCEPT -

a) Pass indwelling urethral catheter

b) IV fluid infusion

c) IV pyelography

d) Digital per rectal examination

Correct Answer - A

Ans is A ie. Pass indwelling Urethral catheter

609. A 58 year old male presents with hematuria. He s diagnosed of having bladder cancer which extends muscle deep. The best treatment is

a) Intravesical Chemotherapy

b) Neoadjuvant chemotherapy followed by radical cystectomy

c) Radiotherapy

d) Tranurethral resection

Correct Answer - B

Answer- B. Neoadjuvant chemotherapy followed by radical cystectomy

610. The Histological subtype of renal cell carcinoma having worst prognosis is

a) Clear cell carcinoma

b) Chromophobe type RCC

c) Collecting duct RCC

d) Papillary Rcc

Correct Answer - C

Answer- C. Collecting duct RCC

- Collecting duct & Medullary- poor prognosis

611. True statement (s) about indirect inguinal hernia ?

a) 25% is bilateral

b) In children, if inguinal (indirect) hernia is present in one side, then processus vaginalis is intact on other side

c) In Bubonocoele, sac lies in the inguinal canal

d) b and c

Correct Answer - D

Ans. is 'b' i.e. In children, if inguinal (indirect) hernia is present in one side, then processus vaginalis is intact on the other side; 'c' In bubonocoele, sac lies in the inguinal canal

Important points about Indirect Inguinal hernia

- In Indirect inguinal hernia the contents of the abdomen *enter the deep inguinal ring* and traverse the whole length of the inguinal canal to come out through the *superficial inguinal ring*.
- It is the *most common* of all forms of hernia.
- It is most common in the young (cf. *a direct hernia is most common in the old*)
- More common in males (*-20 times*)
- It is more common on the right side.
- It is bilateral in *12% of cases*.
- Indirect inguinal hernia usually occurs when there is a *partially or completely patent processus vaginalis* (although *multiple other factors* are responsible for formation of indirect inguinal hernia, patent processus vaginalis seems to be the prime factor)
- *"If both sides are explored in an infant presenting with one hernia, the incidence of a patent processus vaginalis on the other side is 60%" - Bailey & Love*

- *Indirect Inguinal hernias are classified into 3 types*
 - a) *Bubonocele: in this case the hernia is limited in the inguinal canal.*
 - b) *Funicular : here the processus vaginalis is closed at its lower end just above the epididymis. The contents of the hernial sac can be felt separately from the testis which lies below the hernia.*
 - c) *Complete (or Vaginal): here the processus vaginalis is patent throughout. The hernial sac is continuous with the tunica vaginalis of the testis. The hernia descends down to the bottom of scrotum and it is difficult to differentiate the testis from the hernia.*
- *Surgery is the treatment of choice*

612. Left Kidney is preferred for transplantation because

a) Longer renal vein

b) Higher location

c) Ease of surgery due to anatomical relations

d) To prevent damage to liver

Correct Answer - A

Answer- A. Longer renal vein

- The left kidney is preferred because of implantation advantages associated with a longer renal vein making anastomosis easier.

613. A 70 year old male known case of a certain malignancy presents with elevated erythropoietin levels and PCV of 52%. Most likely tumour is

a) Renal Cell Carcinoma

b) Medullary thyroid carcinoma

c) Gastric Carcinoma

d) Colorectal CA

Correct Answer - A

Answer- A. Renal Cell Carcinoma

Erythrocytosis (d/t secretion of erythropoietin by RCC) (but anemia is a more common finding)

- .. Hypertension
- 2. Abnormal liver function (Stauffers syndrome ie non metastatic hepatic dysfunction)
- 3. Hypercalcemia
- 4. Neuromyopathy
- 5. Amyloidosis
- 6. Increased ESR (MC paraneoplastic syndrome)
- 7. Dysfibrinogenemia
- 8. Galactorrhoea
- 9. Feminization and masculinization

614. All are true about Pseudomyxoma peritonei except ?

a) Common in male

b) Associated with ovary tumours

c) Yellow jelly collection of fluid

d) Appendiceal adeno carcinoma

Correct Answer - A

Ans. is 'a' i.e., Common in male

615. Most common brain tumour is

a) Astrocytoma

b) Meningioma

c) Metastasis

d) Oligodendroma

Correct Answer - C

Answer- C. Metastasis

- MC brain tumors → Metastases
- MC primary brain tumor → Glioma
- MC Glioma → Astrocytomas
- MC Astrocytomas → Glioblastoma multiforme

616. A 43 year old male presented with a mass in the submandibular region. After USG and Biopsy he was diagnosed of having acinic cell carcinoma. After staging excision was attempted. Following the surgery he found that his tongue deviated to the affected side. Which of the following nerves could be damaged

a) Lingual nerve

b) Auriculotemporal nerve

c) Hypoglossal nerve

d) Facial Nerve

Correct Answer - C

Answer- C. Hypoglossal nerve

- Injury to hypoglossal (12th) nerve paralyzes ipsilateral half of the tongue.
- When tongue is protruded, its tip deviates towards the paralyzed side because of unopposed action of genioglossus muscle on the normal side of tongue.

617. A sublingual cancer in a 65 year old tobacco chewer has involved the mandible. The commando surgery has been planned. All of the following in removed in commando operation except

a) Involved mandible

b) Oral cancer

c) Accessory nerve

d) Neck lymphnodes

Correct Answer - C

Answer- C. Accessory nerve

Commando operation

- Commando operation is done for oral cancers which have involvement of mandible

618. With regards to the anorectal angle, what is true

a) It distributes intraabdominal forces onto the pelvic floor and plays an important role in continence mechanism

b) It is due to the pull of the external sphincter

c) It is around 30 degrees at rest

d) The angle increases at the time of defecation

Correct Answer - A

Answer- A. It distributes intraabdominal forces onto the pelvic floor and plays an important role in continence mechanism

- At rest the puborectalis muscle creates a 'sling' around the distal rectum, forming a relatively acute angle (Anorectal angle).
- It is 90 to 100 degrees at rest.
- Both the internal and external sphincters are innervated by pudendal nerve.

619.

Catgut suture is derived from which part of the sheep

a) Stomach

b) Intestine

c) Muscle

d) Ligaments

Correct Answer - C

Answer- C. Muscle

- Catgut suture is prepared from the submucosa of the first one-third of the small intestine of sheep or cow.
- Chromic catgut is made by treating catgut with chromic acid salt.

620. A Pre pharyngeal abscess diagnosed as tuberculosis is seen in 44 year old lady with difficulties in deglutition management would be

a) Urgent Drainage

b) Starting of AKT

c) Wait and Eatch

d) Get an MR1 of the cervical Spine

Correct Answer - A

Answer- A. Urgent Drainage

Development of new neurodeficit or its worsening on AKT

- Reappearance of previous neurodeficit on AKT
- No improvement in neurodeficit for 4-6 weeks
- Difficulty in deglutition due to a prepharyngeal abscess

621. Which of the following metabolic anomaly is seen in hemorrhagic shock

a) Metabolic Acidosis

b) Respiratory Acidosis

c) Respiratory Alkalosis

d) Metabolic Alkalosis

Correct Answer - A

Answer- A. Metabolic Acidosis

- Hemorrhagic shock is characterized by lactic acid accumulation causing lactic acidosis/metabolic acidosis.

622. A 24 year old male suffered a RTA with multiple abdominal injuries and femur fracture. He has lost 10% of his blood. The initial fluid of choice is

a) Crystalloid

b) Colloid

c) Packed RBCs

d) Whole Blood

Correct Answer - A

Answer- A. Crystalloid

- This is grade I shock choice of fluid is crystalloid

623. Meiosis in spermatogenesis occurs in which of the following step?

a) Primary spermatocyte to intermediate spermatocyte

b) Primary spermatocyte to secondary spermatocyte

c) Secondary spermatocyte to round spermatid

d) Round spermatid to elongated spermatid

Correct Answer - B

B i.e. Primary spermatocyte to secondary spermatocyte

624. Normal weight of infant at 1 year from birth is:
September 2007

a) Doubled

b) Tripled

c) Quadrupled

d) Variable increase

Correct Answer - B

Ans. B: Tripled

Normal Weight Increases:

1. Weight doubles by 6 months of age
2. Weight triples by 1 year of age
3. Weight quadruples by 2 years of age
4. Annual increase (Ages 2-9): 2.0 kg/year

625. A child can ride a tricycle, copy a circle and knows age sex by the age of -

a) 30 months

b) 42 months

c) 36 months

d) 48 months

Correct Answer - C
Ans. is 'c' i.e., 36 months

626. IQ related genes have recently been found on which chromosome ?

a) Chromosome 21

b) Chromosome X

c) Chromosome 10

d) Chromosome 18

Correct Answer - B

Ans. is 'b' i.e., Chromosome X

- A genomic distribution analysis demonstrated that IQ-related genes were enriched in seven regions of chromosome 7 and the X chromosome.'

627. Which one of the following is a distinguishing feature of Edward's syndrome-

a) Hypotonia

b) Hypotelorism

c) Holoprosencephaly

d) Rocker bottom feet

Correct Answer - D

Ans. is 'd' i.e., Rocker bottom feet

- Low birth weight
- Closed fists with index finger overlapping the 3rd Digit and the 5^h digit overlapping the 4th.
- Narrow hips with limited abduction
- Short sternum
- Rocker bottom feet *sencephaly*
- Microcephaly
- Prominent occiput
- Micrognathia
- Cardiac and renal malformations
- Mental retardation
- 15% cases are lethal in 1st year

628. Which of the following is responsible for pubertal growth in females?

a) Decreased level of adrenal androgens at puberty

b) High level of estrogen at puberty

c) Pulsatile release of GnRH during sleep

d) Increased sensitivity of HPO axis to estrogen

Correct Answer - C

Ans. c. Pulsatile release of GnRH during sleep

After a decade of quiescence, pulsatile secretion of GnRH increases and the hypothalamic-pituitary gonadal axis is reactivated (gonadarche), probably in response to metabolic signals from the periphery. FSH and LH levels rise moderately before age 10, followed by a gradual increase in estradiol concentrations, which stimulate breast development (thelarche). The increase in pulsatile gonadotrophin secretion occurs first at night, during sleep, but gradually extends throughout the day

629. Protein requirement of an infant of 0-6 months of age:

March 2013 (d, p)

a) 0.5 gm/ kg/day

b) 1 gm/ kg/day

c) 1.5 gm/ kg/day

d) 2 gm/ kg/day

Correct Answer - B

Ans. B i.e. 1 gm/ kg/ day

Protein requirement for infant 0-6 month age is 1.16 g/ kg/ day and 1.169 g/ kg/ day for 6-12 months age.

630. What is lethal -

a) OX

b) XX

c) OY

d) XXX

Correct Answer - C

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

- Single Y chromosome is not compatible with life.
- XX is normal female genotype
- XO is Turner syndrome genotype
- XXX is Triple X syndrome genotype

631. The following statements are true of patent ductus arteriosus(PDA) except -

- a) Spontaneous closure occurs in some term infants
- b) Pulmonary hypertenison develops
- c) Bacterial endocarditis is more frequent with small PDA
- d) Recurrent chest infection and congestive failure may develop

Correct Answer - A

Ans. is 'a' i.e., i.e., Spontaneous closure occurs in some term infants

Spontaneous closure of PDA

1) In *premature infants*

In premature infants spontaneous closure of PDA may occur because in these infants PDA is due to unresponsiveness to oxygen and there is no structural abnormality.

2) In *Full term infants*

Unlike that in premature infants, spontaneous closure of a PDA does not usually occur in full term infants.

This is because the PDA in **term** infants results from a structural abnormality of the ductal smooth muscle.

Clinical manifestations of PDA

o Patient may be asymptomatic

- Symptoms develop early and *CHF may develop at 6 to 8th weeks of age.*

o Common symptoms --> Dysnea on exertion, palpitation and frequent *chest infections.*

Signs

o Tachypnea & Tachycardia

o Bounding pulse with wide pulse pressure (with elevated systolic and lower diastolic pressure). o Hyperkinetic cardiac impulse

- Systolic or continuous thrill.
 - o Accentuated S₁
 - o Narrow or paradoxical split of S₁, (But it may be masked by continuous murmur since maximum intensity of continuous murmur occurs at S₁).
- *Continuous (machinery) murmur* → Murmur starts after S₁ and reaches the peak at S₂. It then diminishes and is audible only during a part of the diastole. *Murmur is best heard at second left intercostal space and is also heard below left clavicle.*
- **S₃** may occur at apex followed by a delayed diastolic murmur.

632. Which of the following conditions is worsened by prostaglandin E infusion?

a) Pulmonary atresia without VSD

b) Hypoplastic left heart syndrome

c) Obstructive TAPVC

d) Aortic arch interruption

Correct Answer - C

Ans. c. 'Obstructive TAPVC { Rc/: LI llohtn Retlth,. Cunliut. Srr ('unliut surgen"4,,uar oJ rht' se,tinurs in Trnrucic and Cardiovascular Surgery 2003;4:271-276)

- Obstructive TAPVC is worsened by prostaglandin E infusion
- In infants with or who have a clinical suspicion for a ductal dependent congenital heart defect, prostaglandin E, should be administered until a definitive diagnosis or treatment is established.

TAPVC

- Total anomalous pulmonary venous connection (TAPVC) is characterized by abnormal drainage of pulmonary veins into the right heart either by direct connection into the right atrium or into its tributaries.
- According to the site or level of connection of the pulmonary veins to the systemic venous system TAPVC has been classified into four types :-
 - Type I (most common: 45%) : Anomalous connection at supracardiac level (PV drains into left innominate vein or SVC)
 - Type II (25%) : Anomalous connection at cardiac level (PV joins the coronary sinus or enter right atrium directly).
 - Type III (25%) : Anomalous connection at infracardiac level (PV

drain into portal vein).

- Type IV (5%) : Anomalous connection at multiple levels.
- Infracardiac type of TAPVC is always obstructive whereas cardiac and supracardiac type may be obstructive or nonobstructive.

X-ray findings of TAPVC

- Cardiomegaly
- Plethoric lung fields
- *Snowman* or *figure of '8' configuration* - In supracardiac TAPVC.
- Ground glass appearance of lung - In obstructive TAPVC.

Clinical manifestations of TAPVC

- 1. Nonobstructive TAPVC - Patients presents with mild cyanosis and CHF at 6-8 weeks.
- 2. Obstructive TAPVC - Patients presents with severe cyanosis and CHF within first week.
- *In supracardiac TAPVC the pulmonary veins join to form a single trunk (common pulmonary vein) which then drain through anomalous connection*

633. A renal mass seen on prenatal check up is most probably -

a) Wilm's tumour

b) Mesoblastic nephroma

c) Neuroblastoma

d) Renal sarcoma

Correct Answer - B

Ans. is 'b' i.e., Mesoblastic nephroma

- Enlargement of a kidney on prenatal imaging is usually due to hydronephrosis or a cystic renal enlargement, such as multicystic dysplastic kidney or polycystic kidney disease.
- Solid tumors of the kidneys are rarely seen in the antenatal period, but can be diagnosed by ultrasound. Most common solid tumour is Mesoblastic nephroma

634. 4 year old male child had febrile seizures, best prophylaxis -

a) Paracetamol 6 hourly

b) Paracetamol & diazepam

c) Diazepam

d) Phenobarbitone

Correct Answer - C

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

Prophylaxis in febrile seizures

Prophylactic anticonvulsants are not given routinely in febrile seizures. They are required when ?

- i) Febrile seizure is prolonged or complicated
- ii) Medical reassurance fails to relieve family anxiety.

Prophylaxis may be continuous or intermittent

Intermittent prophylaxis

o It is currently the desirable form of therapy

o It is used during episodes of fever

o Indicated during first three days of fever.

o Drugs that are used are - Diazepam and other benzodiazepenes (these drugs are used because they attain desired levels quickly)

Diazepam is given oral or rectal.

Continuous prophylaxis - o It is used when

Intermittent therapy has failed
seizures

Recurrent atypical

Central nervous system disease

Family history of

epilepsy o Drugs used are —> *Sodium valproate or phenobarbitone.*

Note - Carbamazepine and phenytoin are ineffective for prevention of recurrence.



635. Which of the following statements is false about Sacral Meningomyelocele -

a) Spasticity of the lower limbs is seen

b) Hydrocephalus is seen

c) Bladder incontinence may be seen

d) Lax anal sphincter is present

Correct Answer - A

Ans. is 'a' i.e., Spasticity of the Lower Limbs is seen

Meningomyelocele

o Meningomyelocele is a condition where normally developed neural tissue along with its covering protrudes in the midline through a defect in mesodermal elements.

o The neural tissue may be the spinal cord or the Cauda equina.

o *In a sacral meningomyelocele, however, the neural tissue involved would be the cauda equina, the involvement of which would result in a lower neuron picture and not an upper motor neuron picture (ie. as in the involvement of spinal cord). Spasticity would thus not be a feature of Sacral Meningomyelocele. Spasticity is a feature of U.M.N. lesion and would thus be a feature of meningomyelocele occurring higher up, in the lumbar as dorsal region, where neural tissue involvement is that of spinal cord. (Note: Cauda equina are nothing but spinal nerves which have left the spinal cord, but yet have to leave the vertebral column, ie. they are lower motor neurons)*

- *Bladder & Bowel incontinence may be seen.*
- *Hydrocephalus is an important and frequently associated finding with meningomyelocele.*

636. Most common site of brain metastasis?

a) Brainstem

b) Cerebellum

c) Cerebral cortex

d) Thalamus

Correct Answer - C

Cerebral cortex REF: Sabiston's text book of surgery 18th ed chapter 72

Metastatic Brain Tumors:

Metastatic brain tumors are the most common tumors of the brain. The distribution of metastases in the brain is directly related to the amount of blood flow to each part of the brain.

- Eighty percent of brain metastases occur in the cerebral hemispheres mainly the frontal lobes
- 15% occur in the cerebellum and 5% occur in the brainstem.
- The most common primary sites are lung (50%), breast cancer (15%-20%), unknown primary cancer (10%-15%), melanoma (10%), and colon cancer (5%).
- Metastases to the brain are multiple in more than 70% of cases, but solitary metastases do occur.
- Dural metastases may constitute as much as 9% of total CNS metastases

637. Which of the following is the most common cause of meningoencephalitis in children:

a) Mumps

b) Arbovirus

c) HSV

d) Enterovirus

Correct Answer - D

Answer is D (Enterovirus):

Enteroviruses are the most common cause of viral meningoencephalitis.

Arboviruses, HSV and Mumps virus are all important agents associated with viral meningoencephalitis, but Enteroviruses are the most commonly associated agents and the answer of choice.

'Enteroviruses are the most common cause of viral meningoencephalitis' -

638. An 8 years old child has left sided flank pain and mental retardation. On ultrasound, a hyperechoic lesion in the right kidney and multiple lesions in the liver are noted. CT examination of the abdomen revealed -50 to -80 HU density of these lesions. The most probable diagnosis is:

a) Tuberous sclerosis

b) Hereditary hemangioblastoma

c) Autosomal recessive polycystic kidney disease

d) von Hippel-Lindau syndrome

Correct Answer - A

Answer- A (Tuberous sclerosis)

- AML is a benign clonal neoplasm consisting of varying amounts of mature adipose tissue, smooth muscle and thick-walled vessels.

639. Which of the following is not seen in tuberous sclerosis?

a) Giant cell astrocytoma

b) Subependymal nodule

c) White matter lesion

d) Ependymoma

Correct Answer - D

Ans. d. Ependymoma

Ependymoma is typically a feature of neurofibromatosis 2, but it can be seen in tuberous sclerosis as well, though it is much less common.

Seizures

- Seizures are the MC presenting symptom
- Infantile spasms may be the presenting feature during infancy

Mental Retardation

Mental Retardation occurs in up to 50% of patients referred to tertiary care

Characteristic brain lesion is a cortical 'Tuber'.

MC neurological manifestations: Seizures, cognitive impairment and behavioral abnormalities including autism.

Patients with seizures are more prone to mental retardation

Subependymal nodules which may calcify

Hydrocephalus

640. Excessive eating of non nutritive substances is called

a) PICA

b) Anorexia nervosa

c) Prune belly disease

d) Dyslexia

Correct Answer - A

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

- **Pica** involves repeated or chronic ingestion of non-nutritive substances, which includes plaster, charwal, clay, wool, ashes, patent & earth

641. About measles true is ?

a) Incubation period is 5 days

b) Otitis media is the most common complication

c) Caused by orthomyxovirus

d) Large number of carriers

Correct Answer - B

Ans. is 'b' i.e., Otitis media is the most common complication

- Measles is caused by a *RNA virus* of paramyxovirus family.
- *The only source of infection is a case of measles, carriers are not known to occur.*

642. Pulmonary hypoplasia with uropathy diagnosis is?

a) Potter syndrome

b) patau syndrome

c) Perthe disease

d) All of the above

Correct Answer - A

Ans. is 'a' i.e., Potter syndrome

- Bilateral renal agenesis is incompatible with extrauterine life and is termed Potter syndrome.
- Death occurs shortly after birth from pulmonary hypoplasia.
- The newborn has a characteristic facial appearance, termed *Potter* facies. The eyes are widely separated with epicanthic folds, the ears are low set, the nose is broad and compressed flat, the chin is receding, and there are limb anomalies.
- Bilateral renal agenesis should be suspected when maternal ultrasonography demonstrates oligohydramnios, nonvisualization of the bladder, and absent kidneys.

643. Dyslexia is characterized by all except

a) Mental retardation

b) Inability to interpret written language

c) Male preponderance

d) Retardation reading

Correct Answer - A

Mental retardation

Dyslexia: An imprecise term concerning a condition in which an individual with normal vision is unable to interpret written language. The condition is more common in males and is noticed in children with reading difficulty in the first grade. These individuals can see and recognize letters but are unable to spell and write words. They have no difficulty recognizing the meaning of objects and pictures. Dyslexia is unrelated to intelligence.

644. Complete deficiency of UDP glucuronyl transferase[UGT] is seen in -

a) Crigler - Najjar type - 1

b) Crigler - Najjar type - 2

c) Gilbert's syndrome

d) Dubin-Jhonson syndrome

Correct Answer - A

Ans. is 'a' i.e., Crigler - Najjar type – 1

Crigler-Najjar syndrome type 1 (CNS1) is the most severe form of CNS (see this term), a hereditary disorder of hepatic bilirubin conjugation, characterized by severe neonatal unconjugated hyperbilirubinemia due to a complete absence of hepatic bilirubin glucuronosyltransferase (BGT).

- Mutations in the *UGT1A1* gene that cause Crigler-Najjar syndrome result in reduced or absent function of the bilirubin-UGT (bilirubin uridine diphosphate glucuronosyl transferase)enzyme.
- People with CN1 have no enzyme function, while people with CN2 have less than 20 percent of normal function.
- The loss of bilirubin-UGT function decreases glucuronidation of unconjugated bilirubin.

This toxic substance then builds up in the body, causing unconjugated hyperbilirubinemia and jaundice.

645. Wolff's law states that -

- a) If a bone is continuously subjected to a particular stress it will adapt to become stronger to resist that loading
- b) Only Diaphysis allows longitudinal growth in childhood
- c) Any infection not showing periosteal reaction within 1 week of symptoms can be ruled out to be osteomyelitis
- d) Angular deformities will progress till the closure of physis

Correct Answer - A

Answer- A. If a bone is continuously subjected to a particular stress it will adapt to become stronger to resist that loading

- Wolffs law states that bone in a healthy person or animal will adapt to the loads under which it is placed.
- If loading on a particular bone increases, the bone will remodel itself over time to become stronger to resist that sort of loading.

646. Nutrient and oxygen reach the chondrocytes across perichondrium by -

a) Capillaries

b) Diffusion

c) Along neurons

d) Active transport

Correct Answer - B

Answer- B. Diffusion

- chondrocytes within the matrix must receive nutrients and oxygen by diffusion from vessels that lie outside the cartilage.

647. Patellar clunk is a known complication of which surgery?

a) Corrective osteotomy for genu valgum

b) Total knee Replacement

c) Medial patello femoral ligament reconstruction

d) Bicondylar plating of proximal tibia fracture

Correct Answer - B

Answer- B. Total knee Replacement

- It occurs after total knee replacement.
- It occurs due to presence of hypertrophic synovium in the trochlear notch which rubs against the undersurface of patella with flexion-extension movement of knee thereby producing a clunk.

648. Functional bracing is now the gold standard in nonoperative management of which fractures ?

a) Fracture shaft humerus

b) Fractures of both bones of the forearm

c) Fracture shaft tibia

d) Fracture Shaft Femur

Correct Answer - A

Answer- A. Fracture shaft humerus

- Principle- it relies on the hydrostatic splintage of the fracture due to contraction of muscles in a tight compartment
- It has now become the gold standard of conservative management of humerus fractures.

649. Loosers zone are seen in which of the following conditions -

a) Osteoporosis

b) Osteoporosis

c) Rickets

d) Scurvy

Correct Answer - B:C

Answer- B>.C. Osteoporosis and (C) Rickets

Causes of Looser's zones (pseudofracture or Milkman's fracture)

- Rickets
- Fibrous dysplasia
- Paget's disease
- Osteomalacia(most characteristic)
- Renal osteodystrophy

650. Loosers Zones/ Pseudofractures are commonly seen in the following areas except -

a) Scapula

b) Ribs

c) Pelvis

d) Radius

Correct Answer - D

Answer- D. Radius

- Scapula
- Medial femoral neck & shaft
- Pubic & Ischial rami
- Lesser trochanter
- Ribs & clavicle
- Proximal ulna & radius
- Phalanges, metacarpals & metatarsals

651. Jones Fracture is -

a) Fracture neck of 2nd metatarsal

b) Fracture base of 5th Metatarsal

c) Fracture dislocation of metatarsophalangeal joints

d) Fracture Neck of talus

Correct Answer - B

Answer- B. Fracture base of 5th Metatarsal

- Jones fracture- avulsion fracture at the base of 5th metatarsal

652. Lisfranc Fracture is -

a) Fracture dislocation at the tarsometatarsal joint

b) Intertarsal dislocation

c) Avulsion of calcaneal tuberosity

d) Fracture neck of talus

Correct Answer - A

Answer- A. Fracture dislocation at the tarsometatarsal joint

653. High stepping gait is seen in ?

a) CTEV

b) Common peroneal nerve palsy

c) Polio

d) Cerebral palsy

Correct Answer - B

Ans. is 'b' i.e., Common peroneal nerve palsy

654. A 4 year old child suffered from a fall on outstretched hand. X rays revealed a fracture with the fracture line at the physes with a small metaphyseal fragment.

There was no epiphyseal fracture. What type of injury by Salter Harris Classification is this ?

a) I

b) II

c) III

d) IV

Correct Answer - B

Answer- B. II

- Type II : The fracture involves the physis and a triangle of metaphyseal bone (Thurston Holland sign). This is the commonest type of epiphyseal injury.

655. Bilateral congenital dislocation of hip is associated with all, EXCEPT:

a) Lordotic spine

b) Excess genu valgum

c) Waddling gait

d) Shelton's line deformity

Correct Answer - B

Widening of perineum and marked lumbar lordosis is the striking feature of B/L dislocation of hip.

In a child with b/l dislocation of hip, there is alternate lurching on both sides (**Waddling gait**). A child with u/l dislocation exhibits a typical gait in which the body lurches to the affected side (**Trendelenburg's gait**).

Girls are affected six times more than boys and usually have short stature

X-ray shows breaks in shenton's line (It is an imaginary semicircular line joining medial cortex or femoral neck to lower border of the superior pubic ramus)

Etiology includes: genetic factors, hormonal factors in last weeks of pregnancy, breech malposition, postnatal factors (there is experimental evidence that simultaneous hip and knee extension leads to the dislocation during early development)

Barlow's test, ortolani's test, Telescopy test, Trendelenburg test and Galeazzi's sign may be positive.

Also know

Maintenance of reduction is done by cast: Frog leg/Lorenz cast or Bachelor cast and by splint: Von Rosen splint

Acetabular reconstruction procedure are: salter's osteotomy, Chiari's displacement osteotomy and pemberton's pericapsular osteotomy.

Ref: Apley's 8/e, Page 409-17; Maheshwari 3/e, Page 200-05.

**656. Which of the following is true about
Cones Fracture?**

a) Volar angulation with Radial deviation occurs

b) It is an intra articular fracture

c) It may lead to gunstock deformity due to malunion

d) It is associated with dorsal angulation

Correct Answer - D

Answer- D. It is associated with dorsal angulation

657. Tardy ulnar nerve palsy is seen in

a) Medial condyle # humerus

b) Lateral condyle # humerus

c) Humerus shaft fracture

d) Fracture shaft radius

Correct Answer - B

Ans. is 'b' i.e., Lateral condyle # humerus

Causes of tardy ulnar nerve palsy are : -

1. *Malunited lateral condyle humerus fracture (cubitus valgus)*
2. Displaced medial epicondyle humerus fracture
3. *Cubitus varus deformity (due to supracondylar fracture humerus)*
4. Elbow dislocation
5. Contusions of ulnar nerve
6. Shallow ulnar groove
7. Hypoplasia of humeral trochlea
8. *Joint deformity after prolonged arthritis of elbow*

658. A six year old child presented with a valgus deformity at his right elbow since 3 years that is gradually progressive. He has history of cast applied for 6 weeks after fall on outstretched hand 3 years back. The probable fracture was -

a) Malunited Lateral Condylar fracture of Humerus

b) Malunited Supracondylar Fracture of Humerus

c) Posterior dislocation of elbow

d) Fracture medial condyle of humerus

Correct Answer - A

Answer- A. Malunited Lateral Condylar fracture of Humerus

Fractures commonly showing cubitus valgus deformity due to malunion

- Fracture lateral condyle humerus
- Monteggia Fracture Dislocation

659. Seddon grading is used for -

- a) Classification of nerve injuries
- b) Grading of open fractures
- c) Classification Potts paraplegia
- d) Grading of severity of malignant bone tumours

Correct Answer - A:C

Answer- A & C. Classification of nerve injuries and

(C) Classification Potts paraplegia

Seddons classification is used in :

- .. Peripheral nerve injury
- ?. Potts paraplegia

660. Most common cause of AVN of the hip is

a) Idiopathic

b) Alcoholism

c) Caissons Disease

d) Fracture neck of femur [post traumatic]

Correct Answer - A

Answer- A. Idiopathic

Causes of AVN hip

- Idiopathic (most common)
- Infection- septic arthritis, osteomyelitis
- Hematological malignancies- leukemia, lymphoma
- Alcohol, corticosteroids
- SLE
- Pregnancy
- Caissons disease
- Hyperlipidemia
- Perthes disease
- Ionising radiation

661. Dashboard injury results in

a) Anterior dislocation of hip

b) Posterior dislocation of hip

c) Central dislocation of hip

d) Fracture neck femur

Correct Answer - B
B i.e. Posterior dislocation of hip

**662. All of the following are true about ACL
Except**

a) Prevents anterior motion of femur over tibia

b) Prevents anterior motion of tibia over femur

c) Also provides secondary varus-valgus stability

d) Is taught in extension of knee

Correct Answer - A

Answer- A. Prevents anterior motion of femur over tibia

663. Gustilo Anderson classification is used for ?

a) Compound fractures

b) Closed fractures

c) Distal end radius fractures

d) Femur head fractures

Correct Answer - A

Ans. is 'a' i.e., Compound fractures

Compound fracture

- Compound fracture, also called open fracture, in which *fracture communicates with external environment, i.e., overlying soft tissue coverage (skin and muscles) is breached.*
- Open fractures are typically caused by high energy injuries such as car crashes, falls, or sports injuries.
- *Gustilo and Anderson* classified open fracture into following types.

664. Total duration of antibiotics in acute osteomyelitis is

a) 4 weeks

b) 2 weeks

c) 6 weeks

d) 8 weeks

Correct Answer - C

Answer- C. 6 weeks

- Total duration of antibiotics for acute osteomyelitis is 6 weeks → 2 weeks intravenous and 4 weeks oral.

665. All of the following are described surgical procedures for CTEV except

a) Dwyer's osteotomy

b) Posteromedial soft tissue release

c) Triple Arthrodesis

d) Salter's osteotomy

Correct Answer - D

Answer- D. Salter's osteotomy

- Tendon transfer :- Transfer of tibialis - anterior on the outer side of foot. This can be done only after 5 years.
- Dwyer osteotomy :- Medial open wedge osteotomy of calcaneum to correct heel varus.
- Gradual diferential distraction :- In this an external fixator (JESS or Illizarov) is applied and gradual correction of deformity
- > 10 years:- Triple arthrodesis (subtalar, calcaneo-cuboid, and talonavicularjoints)

666. The ideal treatment of bilateral idiopathic clubfoot in a newborn is:

a) Manipulation by mother

b) Manipulation and Dennis Brown splint

c) Manipulation and casts

d) Surgical release

Correct Answer - A

Manipulation by mother is the only recommended treatment in a new born neonate till the child is about four weeks (1 month) of age when the infant can tolerate strapping or corrective plaster application.

Ref: Essential Orthopedics, 3rd Edition By J Maheswari, 3rd Edition, Pages 196, 199.

667. Overcorrection of CTEV may lead to which of the following deformity

a) Rocker bottom foot

b) Calcaneovalgus

c) Metatarsus Adductus

d) Hammer toe

Correct Answer - A

Answer- A. Rocker bottom foot

Rocker Bottom Foot-it means the foot has a convex plantar surface with apex of convexity at the talar head.

Causes of rocker bottom foot include

- Congenital verticaltalus
- Overcorrection of CTEV
- Improper correction of CTEV i.e. forceful correction of equines by dorsiflexion before correction of adduction, varus and inversion.
- Edward's syndrome, Escobar syndrome, Apert's syndrome.

668. Ossification centre of scaphoid appears at

a) 1-6 months

b) 1 to 2 years

c) 2 to 4 years

d) 4 to 6 years

Correct Answer - D
Answer- D. 4 to 6 years

669. Which of the following fractures is associated with high mortality and morbidity ?

a) Femur Shaft fractures

b) Pelviacetabular fractures

c) Subtrochanteric fractures

d) Shaft tibia fractures

Correct Answer - B

Answer- B. Pelviacetabular fractures

Pelviacetabular fractures are associated with high morbidity and mortality because :

- They are caused by high velocity injuries
- They can have associated compound fractures along
- There may be damage to associated pelvic and abdominal organs
- There is significant blood loss present usually

670. Which of the following is tarsometatarsal amputation ?

a) Sarmiento's Amputation

b) Lisfranc's Amputation

c) Chopart's Amputation

d) Syme's Amputation

Correct Answer - B

Answer- B. Lisfranc's Amputation

- Lisfranc's Amputation- tarsometatarsal amputation
- Sarmiento's Amputation- 1.3 cm proximal to ankle joint
- Syme's amputation- through ankle joint
- Chopart's amputation- through midtarsal joints

671. Motorcyclist's fracture is ?

a) Stellate fracture across base of skull

b) Transverse fracture across base of skull

c) Lamina fracture of C1 vertebra

d) Spinous process fracture of C7 vertebra

Correct Answer - B

Ans. is `b' i.e., Transverse fracture across base of skull

Motorcyclist's fracture

- Because of the inherent instability of two wheeled vehicles, the rider and passenger inevitably fall to the ground in a crash. Injuries can occur to any part of the body, but the limbs and head are particularly susceptible to serious injury.
- Impact with the road surface or another vehicle at speed often causes skull fracture, even in the presence of a helmet.
- A *transverse fracture across the floor of the skull*, usually called a "*hinge fracture*", is sometimes referred to as *motorcyclist fracture*. At autopsy, the *base of the skull* may be appreciated to have divided into two halves, each moving independently of each other like a hinge, the so-called motorcyclist fracture.

672. Increase in cardiac output seen in pregnancy is:
March 2010

a) 10%

b) 20%

c) 30%

d) 40%

Correct Answer - D

Ans. D: 40%

The cardiac output starts to increase from 5th week of pregnancy and reaches its peak 40-50% at about 30-34 weeks. Cardiac output increase further during labour (+50%) and immediately following delivery (+70%)

673. Treatment of choice for Intrahepatic Cholestasis in Pregnancy is:

a) Cholestyramine

b) Ursodiol (Ursodeoxycholic acid)

c) Corticosteroids (Dexamethasone)

d) Antihistaminics

Correct Answer - B

Ursodeoxycholic acid (10-15 mg/kg/day) is the drug of choice in the treatment of intrahepatic cholestasis in pregnancy.

It relieves pruritus, reduces bile salt levels in maternal serum and may reduce the frequency of fetal complications.

It improves serum liver test and liver histology in cholestatic disease.

Ref: Oxford Textbook of Medicine, 4th Edition, Pages 422 ; Textbook of Obstetrics By DC Dutta, 6th Edition, Page 291 ; Bile Acids and Pregnancy By U. Leuschner, P. A. Berg, J. Holtmeier, 2002, Page 36.

674. During pomeroy's method of female sterilization, which portion of tube is ligated :

a) Isthmus

b) Ampullary

c) Isthmo-ampullary

d) Cornual

Correct Answer - C
Isthmo-ampullary

**675. Not true about cephalhematoma:
*AP 08; Kerala 08***

a) Not limited by sutures

b) Swelling develops in 12-24 h after birth

c) Swelling subsides in 2-3 months

d) Caused by periosteal injury of skull

Correct Answer - A
Ans. Not limited by sutures

676. T 1/2 of oxytocin is -

a) 1 - 2 minutes

b) 3 - 4 minutes

c) 15 - 20 minutes

d) 25 - 30 minutes

Correct Answer - B

Ans. is 'b' i.e., 3 - 4 minutes

- Oxytocin has a half life of 3-4 minutes and duration of action of approximately 20 minutes.

677. Maximum strain of parturient heart occurs during:

a) At term Immediate postpartum

b) Immediate postpartum

c) 1st trimester

d) 2nd trimester

Correct Answer - B

Ans. is b i.e. Immediate postpartum

"Significant hemodynamic alterations are apparent early in pregnancy, women with severe cardiac dysfunction may experience worsening of heart failure before mid pregnancy. In others, heart failure develops after 28 weeks, when pregnancy induced hypervolemia is maximal (32 weeks). In the majority, however heart failure develops peripartum when the physiological capability for rapid changes in cardiac output may be overwhelmed in presence of structural cardiac disease"

Reading the above text, from *Williams Obs.* it is clear that maximum chances of heart failure are in the peripartum period. But it is not clear whether maximum chances are during labour or immediate postpartum.

Dutta Obs. 6/e, p 53 provides answer to this ?

"The cardiac output starts to increase from 5th week of pregnancy, reaches its peak 40-50% at about 30 - 34 weeks. Thereafter the cardiac output remains static till term".

"Cardiac output increases further during labour (+50%) and immediately following delivery (+70%) over the pre labour values."

So, maximum chances of heart failure are in immediate post partum period when cardiac output is maximum.

Remember : Periods of maximum risk of cardiac failure :

1. Immediate postpartum
2. During delivery
3. Between 28-32 weeks (when hemodynamic changes are maximum)
4. Between 12-16 weeks of gestation (when hemodynamic changes just begin)
5. Finally 4-5 days after delivery when charges start reverting back.

678. If patient has acute salpingitis and peritonitis, then what is the stage of PID?

a) Stage 1

b) Stage 2

c) Stage 3

d) Stage 4

Correct Answer - B

Ans. is 'b' i.e., Stage 2

Pelvic inflammatory disease (PID) implies inflammation of upper genital tract involving the fallopian tubes as well as the ovaries.

The spectrum ranges from mild to moderate and severe PID.

Depending upon the severity of tubal damage, Gainesville has described five stages of PID :

- Stage I - Acute salpingitis without peritonitis
- Stage II - Acute salpingitis with peritonitis
- Stage III - Acute salpingitis with superimposed tubal occlusion or tubo - ovarian complex
- Stage IV - Ruptured tubo - ovarian abscess
- Stage V - Tubercular salpingitis.

679. Hyperemesis gravidarum is maximum at what gestational age?

a) 6 weeks

b) 9 weeks

c) 28 weeks

d) 36 weeks

Correct Answer - B

Ans. is 'b' i.e., 9 weeks

- Maximum levels of beta HCG occur on 66th day of pregnancy, i.e. 9 weeks 3 days, and thus hyperemesis is maximum at 9 weeks of gestation.

**680. Most common cause of secondary PPH
is :**

a) Uterine inertia

b) Retained placenta

c) Episiotomy

d) Cervical tear

Correct Answer - B
Retained placenta

681. During the delivery, it is necessary to cut an episiotomy. The tear extends through the sphincter of the rectum, but the rectal mucosa is intact. How would you classify this type of episiotomy?

a) First degree

b) Second degree

c) Third degree

d) Fourth degree

Correct Answer - C

A **first-degree tear** involves the vaginal mucosa or perineal skin, but not the underlying tissue.

In a **second-degree episiotomy**, the underlying subcutaneous tissue is also involved, but not the rectal sphincter or rectal mucosa.

In a **third-degree tear**, the rectal sphincter is affected.

A **fourth-degree episiotomy** involves a tear that extends into the rectal mucosa.

Ref:Cunningham F.G., Leveno K.J., Bloom S.L., Hauth J.C., Rouse D.J., Spong C.Y. (2010). Chapter 23. Forceps Delivery and Vacuum Extraction. In F.G. Cunningham, K.J. Leveno, S.L. Bloom, J.C. Hauth, D.J. Rouse, C.Y. Spong (Eds), Williams Obstetrics, 23e.

682. High risk pregnancy are all except:

a) A130 incompatibility

b) Rh isoimmunisation

c) Twin pregnancy

d) Third pregnancy

Correct Answer - D
Third pregnancy

683. Frequency of Braxton Hicks contraction is -

a) One every 2 minutes

b) One every 5 minutes

c) One every 15 minutes

d) None of the above

Correct Answer - C

Ans. is 'c' i.e., One every 15 minutes

Braxton - Hicks contractions

- Uterine contractions in pregnancy has been named after Braxton - Hicks who first described this entity.
- These contractions are irregular, infrequent, spasmodic and painless without any effect on dilatation of cervix.
- Patient is not conscious about the contractions.
- The intensity varies between 5 and 25 mmHg.
- The number increases during the last week or two, when the uterus may contract as often as every 10 to 20 minutes.

684. Correct order in labour -

i) Flexion

ii) Crowning

iii) External rotation

iv) Restitution

a) i - - - iv

b) i-ii-iv-iii

c) ii - iii - iv - i

d) ii-iv-i-iii

Correct Answer - B

Ans. is 'b' i.e., i - ii - iv - iii

Descent of head in normal labour follows these steps in the following order :

- Engagement
- Increasing flexion
- Internal rotation of occiput anteriorly to 2/8th of circle.
- Simultaneous rotation of the shoulders to 1/8th of circle.
- Crowning
- Delivery of the head by extension
- Restitution
- External rotation
- Delivery of the shoulders and trunk by lateral flexion.

685. Lady with infertility with bilateral tubal block at cornua : best method of management is :

a) Laparoscopy and hysteroscopy

b) Hydrotubation

c) IVF

d) Tuboplasty

Correct Answer - C
IVF

686. Chance of subsequent baby having NTD when first baby was born with NTD -

a) 2%

b) 4%

c) 10%

d) 20%

Correct Answer - B

Ans. is 'b' i.e., 4%

- The recurrence risk of neural tube defect is :
- 3 - 5 % if a couple has previously had a child with either anencephaly or spina bifida.
- 5% if either parent was born with a NTD.
- 10% if a couple has two affected children

687. Contraindications for medical method (mifepristone misoprostol) of first trimester MTP?

a) Patient with hemoglobin of 7 gm%

b) Suspected ectopic pregnancy

c) Glaucoma

d) All of the above

Correct Answer - D

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

Contraindications (due to medical reasons) for medical method of abortion:

- Smoking > 35 years
- Hemoglobin < 8 g%
- Ectopic pregnancy/ adnexal mass
- Coagulopathy
- Chronic adrenal failure
- Uncontrolled hypertension (BP>160/100mmHg)
- CVD
- Severe renal, hepatic or respiratory diseases
- Glaucoma
- Uncontrolled seizure
- Allergy or intolerance to mifepristone /misoprostol or other prostaglandins
- Lack of access to 24 hours emergency services

688. Hormone replacement therapy is contraindicated in

a) Atherosclerosis

b) Thromboembolism

c) Osteoporosis

d) Gall stones

Correct Answer - B

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

Contraindications of hormone replacement therapy

- Pregnancy and breast feeding.
- Undiagnosed vaginal bleeding.
- Recent angina or MI.
- *Venous thromboembolic disease.*
- Breast cancer.
- Active liver disease.
- Endometrial cancer.
- Uncontrolled hypertension.

689. The true regarding adenomyosis is:

- a) More common in nullipara
- b) Progestins are the agents of choice for medical management
- c) Presents with menorrhagia, dysmenorrhea, and an enlarged uterus
- d) More common in young women

Correct Answer - C

Adenomyosis is a condition characterized by the presence of ectopic glandular tissue found in muscle.

It usually refers to ectopic endometrial tissue (the inner lining of the uterus) within the myometrium (the thick, muscular layer of the uterus).

The condition is typically found in women between the ages of 35 and 50. Patients with adenomyosis can have dysmenorrhea & menorrhagia. In adenomyosis, basal endometrium penetrates into hyperplastic myometrial fibers.

Therefore, unlike functional layer, basal layer does not undergo typical cyclic changes with menstrual cycle. Ref: Current Obstetrics and Gynecology By Gita Ganguly Mukherjee, Sudip Chakravarty, Bhaskar Pal, et al, Jaypee Brothers, Medical Publishers, 2007, Page 274

690. Primary amenorrhoea with anosmia is seen in :

a) Kallman syndrome

b) Laurence moon Biedl syndrome

c) Foster - kennedy syndrome

d) Sheehan's syndrome

Correct Answer - A

Ans. is a i.e. Kallman Syndrome

Friends, you know the answer to this question quite well. Here I would like to point out that in solving PGME Questions of previous years, it is not only important to know the correct answer with its details, it is equally important to know the details of incorrect options (as Questions might be asked on these incorrect options in future).

So, let's know :

Laurence Moon Biedl Syndrome

It is an autosomal recessive disorder characterized by GnRH deficiency (hypogonadism) ($FSH < 40 \text{ mIU/ml}$) and associated with :

- Obesity
- Mental retardation
- Polydactyly
- Retinitis Pigmentosa

Sheehan's syndrome : Kindly see details from answer No. 5.

Foster Kennedy Syndrome : Do not get confused with this option : It is the same Foster Kennedy Syndrome as you have read in Ophthalmology, characterized by papilloedema in one eye and optic atrophy in the other. It results from raised intracranial pressure and simultaneous optic nerve compression secondary to tumor –

classically, a meningioma of the olfactory groove, or more commonly, due to meningioma of the sphenoid wing.

691. Which of the following is true about wandering fibroid?

a) Attached to uterus

b) Attached to uterus and surrounding viscera

c) Attached to surrounding viscera

d) Neither attached to uterus nor to surrounding viscera

Correct Answer - C

Ans. is 'c' i.e., Attached to surrounding viscera

- A subserous pedunculated myoma may complicate by undergoing rotation at the site of its attachment to the uterus.
- As a result, its veins are occluded and the tumour becomes engorged with blood.
- Patient presents with very severe abdominal pain.
- In very rare cases, these rotated tumors may adhere to an adjacent viscera and obtain a fresh blood supply from these adhesions and finally be detached completely from the uterus and are attached only to adjacent viscera.
- Such fibroids are called wandering or parasitic fibroids.

692.

Which part of the fallopian tube is the most common site for female tubal sterilization?

a) Cornua

b) Ampulla

c) Isthmus

d) Infundibulum

Correct Answer - C

Most common site for female tubal sterilization is isthmus.

Isthmus is the part of the fallopian tube which is cut or sealed in a tubal ligation or sterilization procedure.

In the bipolar electrocoagulation technique, the mid isthmic portion of the tube is grasped and radiofrequency electric current is applied to three adjacent areas and coagulating 3 cm of tube.

The Hulka clips are also placed across the mid isthmus.

Ref: Maternal and Child Health Nursing: Care of the Childbearing and Childrearing By Adele Pillitteri, page 93

693. Antimullerian hormone is secreted by ?

a) Granulosa cells

b) Lyedig cells

c) Sertoli cells

d) None

Correct Answer - C

Ans. is 'c' i.e., Sertoli cells

Antimullerian hormone or Mullerian inhibiting substance is secreted by sertoli cells.

694. Sertoli cells in male secrete ?

a) Testosterone

b) Dehydroepiandrosterone

c) MIH

d) Progesterone

Correct Answer - C

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

Sertoli cells are stimulated by FSH and secrete :-

i) Androgen binding protein (ABP)

ii) Inhibin

iii) *Mullerian inhibiting substance (MIS) or Mullerian inhibiting hormone (MIH)*

Leydig cells are stimulated by LH and secrete *androgens (testosterone), dihydrotestosterone, androstendione, dehydroepiandrosterone.*

695. Which of the following is included in the III step of management of atonic uterus?

a) IV Calcium Gluconate

b) Uterine Massage and bimanual compression

c) Balloon tamponade

d) Per rectal PGE

Correct Answer - B

Ans is 'b' i.e., Uterine Massage and bimanual compression

STEPS :

- I Massage uterus, injection oxytocin, foleys catheter insertion to keep bladder empty, examine expelled placenta and membranes
- II Exploring uterus under GA, IM inj 15 methyl PGE2 alpha, per rectal PGE1, IV calcium gluconate if atony secondary to tocolytic agent)
- III Uterine Massage and bimanual compression
- IV Uterine tamponade - tight uterine packing, balloon tamponade.

696. Theca lutein are usually managed by -

a) USG guided therapeutic aspiration

b) Medical management with methotrexate

c) Laparoscopiccystectomy

d) Spontaneous regression - resolves after management of the underlying cause

Correct Answer - D

Ans is 'd' i.e., Spontaneous regression-resolves after management of the underlying cause

Theca Lutein Cysts

- These cysts can sometimes enlarge to several centimeters in diameter.
- They are usually bilateral and filled with straw-colored fluid.
- Theca lutein cysts are often found in association with hydatidiform moles, choriocarcinoma and gonadotropin (hCG) or clomiphene therapy.
- The cysts spontaneously regress after elimination of the mole, therapeutic curettage, treatment of choriocarcinoma or discontinuation of gonadotropin therapy.
- Functional cysts are distinguished from neoplastic cysts by the fact that they never grow more than 7 cm in size, are unilocular with clear fluid, and regress after some time.

697. True about Meig's syndrome ;

a) Lymphatic dysplasia

b) 2 - 30 years age

c) Associated with ascites and pleural effusion and No treatment required

d) None

Correct Answer - C

Ans. is c i.e. Associated with ascites and pleural effusion; and No treatment required

Ascites and right sided hydrothorax in association with fibroma of ovary is called as *Meig's syndrome*.

It can also be seen in Brenner's tumour and Granulosa cell tumour where it is called as *Pseudomeig's syndrome*.

- Hydrothorax can be bilateral also.

True meig's syndrome is rare, occurring in < 5 per cent of fibromas.

Ascites is caused by transudation of fluid from the ovarian fibroma. Hydrothorax develops secondary to flow of ascitic fluid into the pleural space via lymphatics of the diaphragm.

Ascites occurs (*in 50% cases*) when tumour size is > 6 cms.

Tumours producing Meig's syndrome manifest in *the late childbearing period i.e., 30 - 40 years*. Both ascites and hydrothorax resolve spontaneously after removal of the tumour.

Criteria for diagnosis of Meig's syndrome :

Tumour must be ovarian, solid and benign.

Both hydrothorax and ascites must be present.

Removal of the tumour must result in their spontaneous and permanent cure

permanent cure.

Pseudo-meigs syndrome :

- Can be seen in association with either benign or malignant tumour.
- Hydrothorax could be a manifestation of pulmonary metastasis.
- Syndrome can result from overstimulation of the ovaries with gonadotropins but, in such cases, the peritoneal exudate is more likely to be caused by an electrolyte imbalance rather than by ovarian tumour.

698. Nodular tags of hymen in the post pregnancy period are called

a) Carunculaemyrtiformes

b) Vestibulaemyrtiformes

c) Orficiaemyrtiformes

d) Carunculaeorificies

Correct Answer - A

Ans is 'a' i.e., Carunculaemyrtiformes

- The hymen can stretch or tear as a result of various behaviours, by tampon or menstrual cup use, pelvic examinations with a [speculum](#), regular physical activity, sexual intercourse, insertion of multiple fingers or items into the vagina, and activities such as gymnastics (doing 'the splits'), or horseback riding. Remnants of the hymen are called [carunculaemyrtiformes](#).

699. All the following represent risk factors associated with pelvic inflammatory disease except

a) Recent new sexual partner

b) Douching

c) Low socioeconomic status

d) Age 30 - 39 years

Correct Answer - D

Ans is 'd' i.e., Age 30 - 39 year

Risk factors associated with pelvic inflammatory disease are :

- Douching
- Single status
- Substance abuse
- Multiple sexual partners
- Lower socio - economic status
- Recent new sexual partner
- Young age 10 - 19 years
- Other sexually transmitted infections
- Sexual partner with urethritis or gonorrhoea
- Previous diagnosis of pelvic inflammatory disease
- Not using mechanical or chemical contraceptive barriers
- Endocervical testing positive for N. gonorrhoea or C. trachomatis

700. All of the following are methods of Induction of labour except :

a) Estrogen

b) Oxytocin

c) Stripping of membrane

d) PGE7

Correct Answer - A
Estrogen

701. In Procidentia which of the following is true?

a) Uterus and cervix in vagina

b) Uterus in vagina cervix outside the introitus

c) Both uterus and vagina outside the introitus

d) None of the above

Correct Answer - C

Ans is 'c' i.e., Both uterus and vagina outside the introitus

Uterine descent

- Descent of the cervix into the vagina.
- Descent of the cervix up to the introitus.
- Descent of the cervix outside the introitus.
- Procidentia - All of the uterus outside the introitus

Procidentia:

- Procidentia refers to the complete prolapse beyond the level of the hymen distally so the uterus (or vaginal vault if uterus is absent) is permanently protruding out of the vagina.
- Women with procidentia have poor coordination of pelvic muscle relaxation and contraction, associated bowel dysfunction, and underlying urinary incontinence.

INVESTIGATIONS:

- The investigations required with procidentia are few, but renal ultrasonography and mid-stream urinalysis may be important, owing to potential for kinking of the ureters leading with consequent hydronephrosis and urine stasis due to incomplete emptying.
- In addition, some authors have suggested urodynamic investigations prior to surgery to help identify occult stress urinary incontinence and to attempt to predict those women with underlying voiding

dysfunction.

MANAGEMENT:

- Surgical options for procidentia include: vaginal hysterectomy with anterior and posterior traditional colporrhaphy; or vaginal hysteropexy utilising uterosacral and cardinal ligament complex; sacrospinous fixation; or abdominal or laparoscopic hysteropexy, with or without mesh.

702. In PCOD symptoms and signs seen are :

a) Amenorrhoea

b) Alopecia

c) Theca cell hyperplasia and Hyperandrogenism both

d) All are correct options

Correct Answer - D

Ans. is d i.e. All are correct options

Symptoms and signs of PCOD : **Menstrual dysfunction :**

In women with PCOS - Menstrual dysfunction ranges from amenorrhea to oligomenorrhea to episodic menometrorrhagia.

Endometrium in PCOD patients can be both thickened / thinned and atrophied depending on the predominance of hormone.

Under the influence of unopposed action

Under the

influence of Androgens of estrogen (due to anovulation)

Thickened unstable endometrium
endometrium

Thin, atrophied

Unpredictable bleeding pattern

Amenorrhea /

oligomenorrhea (menometrorrhagia)

Hyper androgenism : It is manifested clinically by

- Hirsutism (i.e. presence of coarse, dark terminal hair distributed in male pattern).
- Acne (Acne that is persistent or is late in onset) and / or°
- Androgenic **alopecia**.°

In contrast signs of virilisation such as increased muscle mass, deepening of the voice and clitoromegaly are not typical of PCOS. Virilisation reflects much higher androgen levels and should prompt investigation for an androgen producing tumor of ovary or the adrenal gland.°

Other endocrine dysfunction :

Other endocrine dysfunction .

- Insulin resistance.
 - Acanthisis Nigricans – Skin is characterised by thick, gray brown velvety plaques seen in areas of flexure like back of neck, axilla, crease beneath breast, waist and groin.
It occurs due to insulin resistance.
 - Impaired glucose tolerance and type 2 diabetes mellitus.
 - Dyslipidemia.
 - Obesity.
 - Obstructive sleep apnea.
 - Increased incidence of metabolic syndrome and cardiovascular disease. Metabolic syndrome characterised by insulin resistance, obesity atherogenic dyslipidemia and hypertension.
 - Increased incidence of endometrial hyperplasia and cancer.°
 - Infertility.°
 - Increased rate (30 - 50%) of early miscarriage°.
- Complications in Pregnancy – *Increased risk of* : - Gestational diabetes

To Brief up :

Consequences of PCOS

**Short term consequences
term consequences**

Long

- | | |
|--|---------------------------|
| • Irregular menses | • Diabetes |
| • Hirsutims / Acne / Androgenic alopecia | • Cardio vascular disease |
| • Infertility | • Endometrial cancer |
| • Obesity | |
| • Metabolic disturbances | |
| • Abnormal lipid levels / Glucose metabolism | |

703. A female developed ovarian hyperstimulation syndrome during the treatment of infertility. What is the MOST common cause of ovarian hyperstimulation?

a) FSH/LH therapy

b) GnRH drugs

c) Clomiphene

d) Danazol

Correct Answer - A

Ovarian hyperstimulation syndrome (OHSS):

- It is a clinical symptom complex associated with ovarian enlargement resulting from exogenous gonadotropin therapy.
- **Symptoms** may include abdominal pain and distension, ascitis, gastrointestinal problems, respiratory compromise, oliguria, hemoconcentration, and thromboembolism.
- These symptoms may develop during ovulation induction or in early pregnancies that were conceived through exogenous ovarian stimulation.

Ref: Hoffman B.L., Schorge J.O., Schaffer J.I., Halvorson L.M., Bradshaw K.D., Cunningham F.G., Calver L.E. (2012). Chapter 20. Treatment of the Infertile Couple. In B.L. Hoffman, J.O. Schorge, J.I. Schaffer, L.M. Halvorson, K.D. Bradshaw, F.G. Cunningham, L.E. Calver (Eds), Williams Gynecology, 2e.

**704. Disseminated intravascular coagulation in cases of abortion is most commonly associated with:
September 2007**

a) Prolonged pregnancy

b) Fat embolism

c) Amniotic fluid embolism

d) All of the above

Correct Answer - C

Ans. C: Amniotic fluid embolism

Disseminated intravascular coagulation (DIC) is a complex systemic thrombohemorrhagic disorder involving the generation of intravascular fibrin and the consumption of procoagulants and platelets. The resultant clinical condition is characterized by intravascular coagulation and hemorrhage. Conditions associated with disseminated intravascular coagulation

- Sepsis/severe infection
- Trauma (neurotrauma)
- Organ destruction
- Malignancy (solid and mveloproliferative malignancies)
- Severe transfusion reactions
- Rheumatologic illness-Adult Stills disease, Lupus
- Obstetric complications- Amniotic fluid embolism, abruption placentae, hemolysis, elevated liver enzymes, low platelets (HELLP) syndrome/ eclampsia, Retained dead fetus syndrome
- Vascular abnormalities-Large vascular aneurysms
- Severe hepatic failure

- Severe toxic reactions-Envenomation, Transplant rejection, transfusion reactions

705. Risk of amniotic fluid embolism is greatest in :

a) First trimester of pregnancy

b) Second trimester of pregnancy

c) During labour

d) In puerperal period

Correct Answer - C
During labour

706. Air embolism occurs in which method of abortion?

a) Spontaneous abortion

b) Medical Termination of pregnancy

c) Criminal abortion

d) Antiphospholipid antibody syndrome

Correct Answer - C

Ans is 'c' i.e., Criminal abortion

- In criminal abortion death may occur from shock, hemorrhage, air or fat embolism and sepsis. When poisonous substances have been administered death may supervene from their effects.
- DIC and cerebral damage may follow when abortion is induced by intrachorionic injection of hypertonic saline and glucose after 12th week.

707. Commonest organism causing Acute Salpingitis:

a) Mycoplasma

b) Chlamydia

c) Gonococcal

d) Treponema

Correct Answer - C
Gonococcal

708. Cervical pregnancy is confirmed by the presence of

a) Gestational sac below internal os

b) Intractable bleeding following evacuation or expulsion of products

c) Bleeding is painless

d) Histology showing presence of villi inside the cervical stroma

Correct Answer - D

Ans is 'd' i.e., Histology showing presence of villi inside the cervical stroma

Cervical Pregnancy

- In cervical pregnancy, the bleeding is painless and the uterine body lies above the distended cervix. Intractable bleeding following evacuation or expulsion of the products brings about suspicion.
- The morbidity and mortality is high because of profuse hemorrhage.
- Clinical diagnostic criteria (Rubin-1983) for cervical pregnancy are?
 - Soft, enlarged cervix equal to or larger than the fundus.
 - Uterine bleeding following amenorrhea, without cramping pain.
 - Products of conception entirely confined within and firmly attached to endocervix.
 - A closed internal cervical os and a partially opened external os.
- Sonography reveals the pregnancy in the cervical canal and an empty uterine cavity.
- Confirmation is done by histological evidence of the presence of villi inside the cervical stroma.

709. Nitabuch's layer is absent in

a) Placenta accrete

b) Placenta previa

c) Placenta membranacea

d) Circumvallate placenta

Correct Answer - A

Ans is 'a' i.e., Placenta accrete

Nitabuch's layer

- During formation of placenta, there is an area of fibrinoid degeneration where trophoblast cells (covered with syncytium) meet the decidua.
- This zone is known as Nitabuch's layer. This layer limits further invasion of the decidua by the trophoblast. Note: This membrane is absent in placenta accreta.

710. In a normal pregnancy, maternal hCG level is maximum at gestational age of:

UPSC 07; 14

a) 8 to 10 weeks

b) 12 to 14 weeks

c) 16 to 18 weeks

d) after 20 weeks

Correct Answer - A
Ans. 8 to 10 weeks

711. Treatment of choice for sarcoma botryoides is

a) Surgical excision

b) Radio therapy

c) Chemotherapy

d) Palliative therapy

Correct Answer - C

Ans is 'c' i.e., Chemotherapy

Sarcoma Botryoides

- Sarcoma botryoides is a rare tumour seen in children.
- This tumour arises in the mesenchymal tissues of the vagina and in rare cases, in the cervix before the age of 2 years.
- It presents as a haemorrhagic grape-like polyp or as a fleshy mass and consists of rhabdomyoblasts with vacuolated cytoplasm, myxoedema and stroma with fusiform cells.
- The tumour spreads by local infiltration, lymphatics and blood stream.
- Examination is done under anaesthesia; biopsy confirms the diagnosis. CT and MRI indicate its spread.
- Treatment. Chemotherapy with VAC (vincristine, adriamycin and cyclophosphamides) is the gold standard in treating this tumour.
- Other drugs used are cisplatin, actinomycin, cyclophosphamide and ifosfamide.
- Surgery is limited to the local residual tumour. Interstitial radiation is used in advanced stage.

**712. In the etiology of endometriosis
Sampson's theory is :**

a) Implantation theory

b) Coelomic metaplasia theory

c) Metastatic theory

d) Histogenesis by induction

Correct Answer - A
Implantation theory

713. Scar endometriosis can occur following :

a) Classical Cesarean Section

b) Hysterotomy

c) Episiotomy

d) All of the above

Correct Answer - D

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

Endometriosis sometimes occurs in abdominal wall scars following operations on uterus or tubes and is known as Scar endometriosis.

Operations most likely to be followed by scar endometriosis

- Hysterotomy° •
- Classical cesarean section° •
- Myomectomy° •
- Ventrofixation° •
- Following operations for section of Fallopian tube° •
- Following operations for removal of pelvic
- Episiotomy°
- endometriosis°

714. Which of the following statements can be regarded as primary action of Inhibin?

a) It inhibits secretion of prolactin

b) It stimulates synthesis of estradiol.

c) It stimulates secretion of TSH.

d) It inhibits secretion of FSH.

Correct Answer - D

D i.e. It inhibits secretion of FSH

- Inhibin is a *polypeptide hormone* and *inhibits FSH secretion* of anterior pituitary by direct action
- FSH is not essential for spermatogenesis; it acts on the Sertoli cells and produces androgen-binding protein.
- Sertoli cells produce anti-Miillerian inhibiting hormone, (MIH) and inhibin. Inhibin inhibits FSH secretion and MIH inhibits development of Miillerian system

715. A 6 year old boy has been complaining of headache, ignoring to see the objects on the sides for four months. On examination, he is not mentally retarded, his grades at school are good, and visual acuity is diminished in both the eyes. Visual charting showed significant field defect. CT scan of the head showed suprasellar mass with calcification. Which of the following is the most probable diagnosis?

a) Astrocytoma

b) Craniopharyngioma

c) Pituitary adenoma

d) Meningioma

Correct Answer - B

Answer is B (Craniopharyngioma):

Presence of headache, visual field defects and suprasellar calcification suggests a diagnosis of suprasellar neoplastic lesions. The most common suprasellar neoplastic lesion in children (6 years) associated with suprasellar calcification is craniopharyngioma which is the single best answer of choice.

716. Where does capacitation of sperms occur in the reproductive tract?

a) Epididymis

b) Vas deferens

c) Vagina

d) Uterus

Correct Answer - D

After ejaculation into the female, spermatozoa move up the uterus to the isthmus of the uterine tubes where they slow down and undergo capacitation.

- *Capacitation involves* two components : increasing the motility of spermatozoa and facilitating their preparation for the acrosome reaction. From the isthmuses the capacitated spermatozoa move rapidly to the tubal ampullas, where fertilization takes place.
- Spermatozoa attain progressive motility in the epididymis. It involves activation of a unique set of proteins from the CatSper family, which are localized to the principal piece of the sperm tail.
- Ejaculation of the spermatozoon involves contractions of the vas deferens mediated in part by P2X receptors, ligand-gated cation channels that respond to ATP.

Ref: Ganong's Review of Medical Physiology, 24th Edition, Chapter 23

717. All of the following are true about Krukenberg's tumor except :

a) Has a rough surface

b) Shape of ovary is maintained

c) Usually bilateral

d) Arises usually from stomach carcinoma

Correct Answer - A

Ans. is a i.e. Has a rough surface

Krukenberg tumour :

- Krukenberg tumour by definition **represent carcinoma of stomach metastasised to ovary**. But the eponym is commonly used to **denote any gastric carrier metastatic to ovary**
- Tumour arise by *retrograde lymphatic spread*° i.e. carcinoma cells pass from the stomach to the superior gastric lymphnode which also receive lymphatics from ovary.

Characteristics of Krukenberg **Tumour** :

1. Always bilateral°
2. Have smooth surface°
3. No tendency to form adhesions
4. Freely mobile
5. No infiltration through the capsule.
6. Histologically tumour has signet ring cells in the background of myxomatous stroma.
7. They retain the shape of normal ovary.°
8. Have waxy consistency.°

First Type

- They are metastatic tumors from Intestine, Gall bladder, pancreas, corpus, and cervix.

- They are most commonly bilateral.
- They have irregular surface
- The method of ovarian infiltration is by surface implantation or retrograde implantation

Second Type (*Krukenberg Tumour*)

- They are metastatic tumors from stomach (70%), large bowel (15%) and breast (6%).
- They are always bilateral.°
- They have a smooth surface which may be slightly bossed.
- Always arise by retrograde lymphatic spread.

Extra edge :

Immunochemistry can help to distinguish between a primary mucinous ovarian and a metastatic colon Ovarian tumour is expected to stain positive for cytokeratin 7(CK7) and negative for CK 20. In contrast a metastasis lesion from a primary mucinous adenocarcinoma of colon is likely to show reverse pattern.

718. The pseudomyxoma peritonei occurs as a complication of the following ovarian tumours :

a) Serous cyst adenoma

b) Mucinous cyst adenoma

c) Dysgerminoma

d) Gonadoblastoma

Correct Answer - B

Ans. is b i.e. Mucinous cyst adenoma

Pseudomyxoma peritonei is a condition in which the neoplastic epithelium secretes large amounts of gelatinous mucinous material.

It is most commonly seen secondary to :

- Ovarian mucinous carcinoma; mucinous cystadenoma.
- Appendicular carcinoma (*well differentiate carcinoma*).
- Mucocoele of appendix (less commonly seen)

Even after removal of the ovarian tumours, these cells continue to secrete mucin.

Tendency of *recurrence* is present.

Prognosis is Poor.

Management : Hysterectomy with BSO with removal of mucin peritoneal implants along with appendix.

719. True about Brenner tumo

a) Usually bilateral

b) Resembles fibroma

c) Common in postmenopausal age group

d) Option b and c both

Correct Answer - D

Ans. is b and c i.e. Resembles fibroma; and Common in postmenopausal age group

Brenner tumour is also called as Transitional cell tumour :

- It is a rare epithelial neoplasm of ovary resembling fibroma.°
 - It is an essentially benign tumour.°
 - Tumour is generally seen in women around menopause and is generally unilateral.°
 - Cause menopausal bleeding and Pseudomeig syndrome (ascites and hydrothorax).°
 - Malignant change is very rare.
- Histologically it shows walthard cell rests of transitional cells°. cells have coffee bean nuclei. cut section is gritty.

720. Prognosis of Gestational Trophoblastic Disease depends on all, except :

a) Number of living children

b) Blood group

c) Parity

d) Previous HCG titre

Correct Answer - A

Ans. is a i.e. Number of living children

Gestational Trophoblastic Disease :

i) Low Risk (Good Prognosis) :

- Disease is present < 4 months duration
- Initial serum hCG level < 40,000 mIU/ml
- Metastasis limited to lung and vagina
- No prior chemotherapy
- No preceding term delivery

ii) High Risk (Poor Prognosis) :

- Long duration of disease (> 4 months)
- Initial serum hCG level > 40,000 mIU/ml
- Brain or liver metastasis
- Failure of prior chemotherapy
- Following term pregnancy
- WHO score > 8

721. Treatment of choice for placental site trophoblastic disease is -

a) Observation

b) Surgery

c) Chemotherapy

d) Radiotherapy

Correct Answer - B

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

Placental Site Trophoblastic Tumor

- Arises from the placental bed trophoblasts and invades the myometrium.
- Most of these tumors run a benign course, malignancy is rare.
- Tumor is resistant to chemotherapy.
- Hysterectomy is the recommended treatment.

722. Treatment for Gardnerella -

a) Metronidazole

b) Doxycycline

c) Azithromycin

d) Erythromycin

Correct Answer - A

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

Treatment for Bacterial vaginosis/ Gardnerella vaginosis is:

- Metronidazole 500 mg orally twice a day for 7 days
- Metronidazole gel, 0.75%, one full applicator (5g) intravaginally, once a day for 5 days.
- Clindamycin cream, 2%, one full applicator (5g) intravaginally at bedtime for 7 days.

723. Which is not a risk factor of endometrial carcinoma -

a) Obesity

b) Smoking

c) Infertility

d) Tamoxifen

Correct Answer - B

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

Endometrial carcinoma

o Endometrial carcinoma is *the most common invasive cancer of the female genital tract* and accounts for 7% of all invasive cancer in women.

o The peak incidence is in the *55- to 65-year-old woman*.

o Clinicopathological studies & molecular analysis support its classification into two major broad categories.

Type-I Carcinoma

o *Most common type*.

o Majority are *well differentiated & mimic proliferative endometrial glands*.

o They are associated with- *obesity, diabetes, hypertension, infertility and unopposed estrogen stimulation*. Tamoxifen also increases the risk of endometrial cancer.

o *Endometrial hyperplasia is a precursor* to endometroid carcinoma.

o Mutation in *PTEN tumor suppressor gene* have been seen in 30-80% of endometroid carcinoma & 20% patients with endometrial hyperplasia.

o Additional molecular changes that are common are microsatellite instability & mutations in KRAS & beta catenin oncogenes.

Type-H Carcinoma

- o These occur in women a decade later than type I carcinoma.
- o These usually arise in setting of *endometrial atrophy*.
- o They are *poorly differentiated*. The most common subtype is serous carcinoma, clear cell type & malignant mixed mullerian tumor.
- o The most frequent alteration described is mutation *in p53 tumor suppressor gene*.

724. Civatte bodies are found in :

a) Lichen Planus

b) Psoriasis

c) Dermatophytosis

d) Vitiligo

Correct Answer - A
A. i.e. Lichen planus

**725. 24 years old male complains of mild urethral mucoid discharge after sexual contact with a sex-worker. Examination is normal. Drug used to treat such a patient:
*September 2012***

a) Azithromycin 1 mg single dose

b) Azithromycin 1 mg for 3 weeks

c) Azithromycin 500 mg single dose

d) Azithromycin 1 gram single dose

Correct Answer - D

Ans. D i.e. Azithromycin 1 gram single dose

The clinical presentation corresponds to a diagnosis of NGLI/ non gonococcal urethritis

726. In donovanosis-

a) Pseudolymphadenopathy

b) Penicillin is used for treatment

c) Painful ulcer

d) Suppurative lymphadenopathy

Correct Answer - A

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

Donovanosis

- Caused by *Calymmatobacterium granulomatis*.
- *C. granulomatis* is ?
 - Gram negative
 - Encapsulated
 - Nonmotile
 - Intracellular
- *It shares many morphologic and serologic characteristic (antigenic) and > 99% homology at the nucleotide level with Klebsiella.*
- Clinical manifestations
 - IP —) 1-4 weeks
 - Begins as one or more subcutaneous nodules that erode through skin to produce clean, *granulomatous*, sharply defined, usually *painless* lesions.
 - The genitalia are involved in 90% of cases.
 - Genital swelling, particularly of labia, is common.
 - In donovanosis, heaped-up granulomatous tissue may follow and via subcutaneous extension to inguinal area may form "*pseudo-buboes*"; however, the absence of true lymphadenopathy is the hallmark of this infection.
 - Complications Pseudoelephantiasis, phimosis and

paraphimosis.

- Diagnosis:
 - *The preferred diagnostic method involves demonstration of typical intracellular Donovan bodies within large mononuclear cells visualized in smears prepared from lesions or biopsy specimens.*
 - Stain used is wright - Giemsa
- Treatment:
 - *Azithromycin (DOC)*
 - Doxycycline (2^d choice)
 - Chloramphenicol

727. 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

728. In pemphigus foliaceus, Acantholysis is seen in which layer -

a) Stratum corneum

b) Stratum granulosum

c) Stratum basale

d) Spinous layer

Correct Answer - C

Ans. is 'c' i.e., Stratum basale

[Ref : Behl I p .282]

- Acantholytic cells are from basal layer (stratum basale) as acantholysis occurs in basal layer

729. Pitted keratolysis affects -

a) Palm and soles

b) Face

c) Nails

d) All of the above

Correct Answer - A

Ans. is 'a' i.e., Palm & soles

[Ref : Khopkar #/e p. 42]

Pitted keratolysis

- Caused by opportunistic bacteria *Corynebacterium dermatophilus congolensis*. Overgrowth of this bacteria occurs in people involved in wet work eg :-dishwashers.
- Lesions looks like pits or craters due to sharply circumscribed round areas of keratolysis (loss of keratin). Affects palm and soles.

730. Histological feature of lichen planus is ?

a) Acanthosis

b) Interphase dermatitis

c) Non specific

d) Basal cell degeneration

Correct Answer - D

Ans. is 'd' i.e., Basal cell degeneration > Acanthosis

- The basic pathology in lichen planus is the damage to the basal cell layer of epidermis leading to hydropic degeneration of basal cells".

—Venkataram Pie 59

Histopathology in Lichen planus

1. The basic pathology in lichen planus is the damage to the basal cell layer of epidermis leading to hydropic degeneration of basal cells.
2. Epidermal thickening especially of granular cell layer ---> Hypergranulosis.
3. Hyperkeratosis (Thickening of stratum corneum)
4. Acanthosis (Thickening of Stratum) malpighi.
5. Subepidermal - lichenoid band due to deposition of lymphocytes & histiocytes in upper dermis.
6. Dropping of melanin pigment from damaged keratinocytes of epidermis into dermis --> pigment incontinence.
7. This melanin is engulfed by macrophages which results in formation of cytoplasmic bodies (Civatte or colloid bodies).
8. Mox Joseph Histological cleft -3 Separation of epidermis in small clefts.

731. Becker's nevus is -

a) Epidermal nevus

b) Melanocytic nevus

c) Vascular nevus

d) None

Correct Answer - A

Ans. is'a' i.e., Epidermal nevus

[Ry': Fitzpatrick Vh/e p. 639]

732. Pseudo bubo is seen in ?

a) Donovanosis

b) LGV

c) Chancroid

d) Leprosy

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

733. Pseudo Koebner's phenomenon is seen in -

a) DLE

b) Lichen planus

c) Kaposi sarcoma

d) Plane warts

Correct Answer - D
Ans. is 'd' i.e., Plane warts

734. The most potent topical corticosteroids is ?

a) Hydrocortisone butyrate cream 0.1%

b) Betamethasone valerate cream 0.5%

c) Clobetasol propionate cream 0.5%

d) Clobetasone butyrate cream 0.5%

Correct Answer - C

Ans. 'c' i.e., Clobetasol propionate cream 0.5%

735. Thiopentone is contraindicated in ?

a) Acute intermittant porphyria

b) Electro convulsive therapy

c) Sarcoidosis

d) Diabetic patients

Correct Answer - A

Ans. is 'a' i.e., Acute intermittant porphyria

Thiopentone

- It is an ultrashort acting barbiturate.
- It has short duration of action due to rapid redistribution.
- It causes fall in BP due to vasodilatation - Cardiovascular collapse may occur if hypovolemia, shock or sepsis are present.
- It can cause respiratory depression.
- It has anticonvulsant action - agent of choice for neurosurgical procedures.
- It is the agent of choice for cerebral protection. because it decreases ICT, and cerebral metabolic rate.
- Miller 6th/e - 330, 332 .o It is poor analgesic -f painful procedure should not be done.It produces hyperalgesia.
- It has poor muscle relaxant property.
- Extravasation of the solution or inadvertent intrarterial injection produces intense pain - thrombosis and vasoconstriction can cause necrosis and gangrene.
- Treatment of this condition includes.
- Leaving needle insitu
- Brachial block
- Heparin injection to → prevent thrombosis
- Dilution of thiopentol t by injection of saline into the artery.

- Papaverine injection → to relieve spasm.
- Urokinase, streptokinase, vasodilators, steroid and lignocaine can also be used.

Contraindications

Acute intermittant porphyria
or shock.

Respiratory obstruction
equipments.

Status asthmaticus

Cardiovascular instability

No availibility of airway

736. Standard method to differentiate between endotracheal and esophageal intubation is?

a) End tidal CO₂

b) Chest X-rays

c) Auscultation

d) Partial pressure of O₂

Correct Answer - A
Ans. is 'a' i.e., End tidal CO₂

737. Inducing agent of choice in shock ?

a) Isoflurane

b) Desflurane

c) Ketamine

d) Thiopentone

Correct Answer - C

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

- Inducing agent of choice in Asthma & COPD Ketamine.
- Inhalational agent of choice in Asthma & COPD —) Halothane.

738. Pre-anaesthetic medication is given to ?

- a) Reduce anxiety and fear
- b) Reduction of secretion of saliva
- c) To prevent undesirable reflexes
- d) All of the above

Correct Answer - D

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

Preanaesthetic medication

- Premedication (Preanaesthetic medication) refers to the use of drugs before anaesthesia to make it more pleasant and safe. The aims are :
 1. Relief of anxiety and apprehension preoperatively and to facilitate smooth induction.
 2. Amnesia for preoperative and postoperative events.
 3. Supplement analgesic action of anaesthetics and potentiate them.
 4. Decrease secretions and vagal stimulation (undesirable reflex).
 5. Antiemetic effect extending into postoperative period.
 6. Decrease acidity and volume of gastric juice so that it is less damaging if aspirated.

Drugs used in premedication

1. *Sedative - antianxiety* → Diazepam / Lorazepam / Midazolam.
Lorazepam is used most commonly.
Midazolam is used for day care surgery.
2. *Opioids* → Morphine / pethidine
3. *Anticholinergics* → Atropine / Hyoscine / Glycopyrrolate.
4. *Neuroleptics* Haloperidol / chlorpromazine / triflupromazine.

5. H₂ blocker or proton
pump inhibitor

Ranitidine / Famotidine, omeprazole /
Pantoprazole.

6. Antiemetics

→ Metoclopramide / Domperidone /
Ondansetron.

739. Anaphylaxis is caused by-

a) N₂ O

b) Althesin

c) Halothane

d) Halothane

Correct Answer - B

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

Althesin

o Althesis is a *neurosteriod*

o It was used as a parenteral anaesthetic

o It was withdrawn from the market because of several severe *anaphylactic reactions*

740. Agent causing malignant hyperthermia is?

a) Succinylcholine

b) 1120

c) Ether

d) Verapamil

Correct Answer - A

Succinylcholine REF: Goodman and Gillman p. 152 11th edition
"Succinylcholine is the most common drug used in anesthesia to cause Malignant Hyperthermia"

MALIGNANT HYPERTHERMIA

Malignant hyperthermia is a potentially life-threatening event triggered by certain anesthetics and neuromuscular blocking agents. Clinical features: contracture, rigidity, and heat production from skeletal muscle resulting in severe hyperthermia, accelerated muscle metabolism, metabolic acidosis, and tachycardia.

Mechanism: Uncontrolled release of Ca^{2+} from the sarcoplasmic reticulum of skeletal muscle is the initiating event. Although the halogenated hydrocarbon anesthetics (e.g., halothane, isoflurane, and sevoflurane) and succinylcholine alone reportedly precipitate the response, most incidents arise from the combination of depolarizing blocking agent and anesthetic. Susceptibility to malignant hyperthermia, an autosomal dominant trait

Treatment: Intravenous administration of dantrolene (DANTRIUM), which blocks Ca^{2+} release and its sequelae in skeletal muscle. Rapid cooling, inhalation of 100% oxygen, and control of acidosis should be considered adjunct therapy in malignant hyperthermia

741. Nephrotoxic agent is

a) Methoxy flurone

b) Isoflurone

c) Halothane

d) N₂O

Correct Answer - A
A i.e. Methoxy flurane

742. Inhalational agent of choice in children:

a) Sevoflurane

b) Isoflurane

c) Desflurane

d) Halothane

Correct Answer - A
A. i.e. Sevoflurane

**743. Stages of anesthesia were established
by**

a) Ether

b) N₂O

c) Halothane

d) Chloroform

Correct Answer - A
A i.e. Ether

744. Which of the following are theories of regional anesthesia

a) Specificity Theory & Gate Control Theory

b) Specific Receptor Theory & Gate Control Theory

c) Specific Receptor Theory & Membrane Expansion Theory

d) Specificity Theory & Membrane Expansion Theory

Correct Answer - C

(Ref: Malamed, Ed. 5th Pg-12)

- The nerve membrane is the site at which local anesthetics exert their pharmacological actions.

The following theories have been given over the years to explain the mechanism of action of local anesthetics-

- The Acetylcholine theory.
- The Calcium Displacement theory.
- The Surface Charge (Repulsion) theory.
- The membrane Expansion theory.
- The Specific Receptor theory.

- The Specific Receptor theory is the most accepted one. It proposes that the local anesthetics act by binding to specific receptors on the sodium channel.

745. Drug of choice in lignocaine toxicity -

a) Bretylium

b) Amiodarone

c) Isoprenaline

d) Diazepan

Correct Answer - D

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

o If lignocaine toxicity is suspected, stop the injection immediately.

o Ensure adequate oxygenation, whether by face mask or by intubation.

o Anticonvulsants such as benzodiazepines and barbiturates are the drug of choice for seizure control. o *Succinylcholine* is sometimes also used to terminate the neuromuscular effects of seizures.

o If CVS symptoms occur (cardiac depression and hypotension), *IV fluid and vasopressor agents* may be required.

o If metabolic acidosis develops, use of *sodium bicarbonate* can be considered, although, as in other instances of acute metabolic acidosis, this is controversial.

746. All are surface anaesthetics except -

a) Lignocaine

b) Bupivacaine

c) Procaine

d) Cinchocaine

Correct Answer - B

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

o Topical anaesthesia (surface anaesthesia) is produced by topical application of local anaesthetics to mucous membrane or abraded skin.

o Surface anaesthetics are

Dibucaine (Cinchocaine) *Lignocaine* Benoxinate

Oxethazaine Prilocaine

Tetracaine (Amethocaine) Cocaine Benzocaine

Butamben

o Procaine has very less potent surface anaesthetic action (1/10) —
> not used as surface anaesthetic.

o But amongst the given options best answer is bupivacaine, it does not have surface anaesthetic action.

747. Which of the following is NOT an amide ?

a) Lignocaine

b) Procaine

c) Mepivacaine

d) Dibucaine

Correct Answer - B
Ans. is 'b' i.e., Procaine

748. Thickness of lead apron to prevent radiation:

a) 1 mm

b) 3 mm

c) 0.5 mm

d) 7 mm

Correct Answer - C
Ans. 0.5 mm

749. MRI utilizes -

a) Hydrogen atoms

b) X-rays

c) Helium ion

d) Radioactivity

Correct Answer - A

Ans. is 'a' i.e., Hydrogen atoms

[Ref' Essential Clinical Neuroanatomy p. 263]

- MRI is a technique that produces tomographic images by means of magnetic fields and radio;frequency waves.
- It causes some alignment of the hydrogen atoms within the body along the magnetic field.

750. Amount of radiation used in mammography -

a) 0.5 mSv

b) 0.7 mSv

c) 0.9 mSv

d) 1 mSv

Correct Answer - B

Ans. is'b'i.e.,0.7 mSv

- Screening mammography and radiation A screening mammogram is an X-ray of the breast tissue for women without any breast symptoms.
- It uses low doses of radiation (about 0.7mSv for 4 X-rays).

751. Air on X-rays appears -

a) White

b) Black

c) Grey

d) None of the above

Correct Answer - B

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

- Structures that are dense (such as bone) will block most of the x-ray particles, and will appear white.
- Metal and contrast media (special dye used to highlight areas of the body) will also appear white.
- Structures containing air will be black, and muscle, fat, and fluid will appear as shades of gray.

752. Prominent left border of heart is formed by all the following *except*:

a) Azygous vein

b) Pericardial cyst

c) Coronary artery aneurysm

d) Enlarged left auricular aneurysm

Correct Answer - A
Ans. Azygous vein

753. In which of the following form of imaging, Harmonic Imaging is related -

a) Sonography

b) Digital radiography

c) MRCP

d) Nuclear imaging

Correct Answer - A

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

[Ref: Ultrasound teaching manual p. 16]

- Harmonic imaging is a technique in ultrasonography that provides images of better quality as compared with conventional ultrasound technique.

754. Which one is non-ionising radiation -

a) MRI

b) CT Scan

c) X-ray

d) Position emission scintigraphy

Correct Answer - A

Ans. is'a'i.e., MRI [Ref Grainger Sth/ep.703]

- Ionizing Radiation: X-ray, Barium studies, IVU, CT scan, Mammography, fluoroscopy DEXA
- Non Ionizing radiation: USG, MRI, microwaves, UV rays, Radiofrequency waves, Thermography (infrared rays)

755. Which of the following is true regarding cardiac MRI

a) Infarcted myocardium is hypointense on T2-MRI

b) Viable myocardium can be differentiated from infarcted myocardium

c) Prosthetic heart valves are an absolute contraindication for MRI

d) It is better than CT for non-invasive assessment of coronary arteries

Correct Answer - B

Ans. is 'b' i.e., Viable myocardium can be differentiated from infarcted myocardium.

- Infarcted myocardium appears hypointense on T1-MRI and hyperintense on T2-MRI
- Viable myocardium can be easily differentiated from infarcted tissue.
- Prosthetic heart valves are a relative contraindications for MRI.
- Multislice CT is a better modality than cardiac MRI for the non invasive assessment of coronary arteries.

756. All of the following appear hypo-intense on MRI except

a) Air in lung

b) Ligaments

c) Adipose tissue

d) CSF

Correct Answer - C

Ans. is'c'i.e., Adipose tissue

757. The causes of homogenous opacity on X-ray is all *except*:

a) Pleural effusion

b) Diaphragmatic hernia

c) Massive consolidation

d) Emphysema

Correct Answer - D
Ans. Emphysema

758. Sievert is a unit of

a) Radioactivity

b) Radiation exposure

c) Absorbed dose

d) Dose equivalent

Correct Answer - D

Ans. is'd'i.e., Dose equivalent

Ref: A Textbook of Science for the Health Professions p. 132

- Sievert is new (SI) unit of dose equivalent replacing Rem

759. Which of the following is a late complication of radiotherapy -

a) Nausea

b) Erythema

c) Thrombocytopenia

d) Radiation pneumonitis

Correct Answer - D

Ans. is'd'i.e., Radiation pneumonitis

[Ref Cancer in Children: Clinical Management p. 132

- Radiation pneumonitis is a late complication.
- **Late effects : - Appearance within a few to many years : -**
- Pericardial involvement is the most common and includes asymptomatic pericardial effusion & constrictive pericarditis.
- Radiation pneumonitis
- Post radiation transverse myelitis develop after 12-24 months.
- Leukemia is the most common radiation induced cancer.
- Other cancers are thyroid and breast carcinoma.
- Papillary carcinoma of the thyroid may develop due to radiation exposure in infancy.
- Gliomas, Meningiomas, Sarcomas, Lung cancer

760. Dysphagia lusoria is best diagnosed by

a) Plain radiography

b) Fluoroscopy

c) CT Angiography

d) Ultrasound

Correct Answer - C

Ans. is'c'i.e., CT Angiography

Ref: Human Malformations and Related Anomalies p. 130

- Dysphagia lusoria is an impairment of swallowing due to compression from an aberrant right subclavian artery (arteria lusoria)
- CT angiography and MRI thorax are the best diagnostic modalities that could identify the arteria lusoria.

761. X-rays showing widening of sella but neurological and endocrinological investigations are normal, diagnosis is

a) Pseudotumor cerebri

b) Empty sella sign

c) Chromophobe adenoma

d) Prolactinoma

Correct Answer - A

Ans. is'a'i.e., Pseudotumor cerebri

Ref: Principles and Practice of Endocrinology and Metabolism p. 107

- "Elevated intracranial pressure is a potentially important contributory factor because it has been documented in patients with primary empty sella syndrome.
- Ten percent of the patients with benign intracranial hypertension have a co-existing empty sella."

762. A 30 year-old-female presented in the emergency with sudden onset tachycardia and sense of impending dooms. Possible diagnosis is:
AIIMS 10

a) Conversion reaction

b) Anxiety disorder

c) Acute psychosis

d) Panic attack

Correct Answer - D
Ans. Panic attack

763. Which of the following is true about Wernicke's encephalopathy

- a) Extraparamidal symptoms
- b) Auditory hallucinations
- c) Vagus nerve palsy
- d) Presence of horizontal nystagmus

Correct Answer - D

Answer- D. Presence of horizontal nystagmus

Wernicke's disease is a common and preventable disorder due to deficiency of thiamine.

- It is commonly seen in alcoholic patients with chronic thiamine deficiency.
- Wernicke's encephalopathy is characterized by clinical triad of
 - Global confusion
 - Ophthalmoplegia
 - **Ataxia**
- It includes horizontal nystagmus on lateral gaze lateral rectus palsy.
- **Gait Ataxia**
- It results from combination of polyneuropathy, cerebellar involvement and vestibular paresis.

764. Vascular dementia is characterized by

a) Disorientation

b) Memory deficit

c) Emotional liability

d) All

Correct Answer - D

Ans. D. All

- These all are features of dementia
- Dementia is characterized by multiple cognitive defects that include impairment in memory, without impairment in consciousnessQ.
- The cognitive functions that can be affected in dementia include general intelligence, learning & memory, language, problem solving, orientation, perception, attention & concentration, judgement & social abilities (key words : think about a very old man who is unable to learn new things, concentrate, judge & solve problems with poor personal care, general intelligence, social abilities & communication skills.)
- Vascular dementia characteristically presents with - sudden onset in early age, stepwise & patchy progression with focal neurological signs & symptomsQ & greater preservation of personality.

765. Delirium is a disorder of:
UP 08

a) Thought

b) Perception

c) Insight

d) Cognition

Correct Answer - D
Ans. Cognition

766. Hypnagogic hallucinations are seen in ?

a) Depression

b) Mania

c) Narcolepsy

d) Schizophrenia

Correct Answer - C

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

Narcolepsy

- This is characterized by *excessive day time sleep, often disturbed night time sleep and disturbances in the REM sleep*. Age of onset is between 10-20 years. There is irresistible desire to sleep and bouts of sudden sleep each lasting for 10-30 minutes occurring during day time. In majority of cases narcolepsy is associated with one or more accessory symptoms :?
 1. Cataplexy :- It is the most common accessory symptom and is characterized by sudden decrease in muscle tone either, local or generalized.
 2. Hypnagogic hallucination :- Hallucination occurring just before falling asleep. When hallucination occurs just before awakening it is called hypnopompic hallucinations.
 3. Sleep paralysis (least common).

767. Di-acetyl morphine is -

a) Bhang

b) Ganja

c) Heroin

d) Hashih

Correct Answer - C

Ans. is 'c' i.e. Heroin

[Ref: Kaplan's synopsis of Psychiatry IFh/e p. 446, K.D.T. 6h/e p. 457]

- Di-acetyl morphine is the chemical name of heroin.
- Heroin (smack) is the most commonly abused opioid.

768. The sensation of creeping bugs over the body is a feature of which of the following poison?

a) Cocaine

b) Diazepam

c) Barbiturates

d) Brown sugar

Correct Answer - A

Magnan's symptom or cocaine bugs is a characteristic feature of cocaine poisoning.

In this patient's feels as if grains of sand are lying under the skin or small insects (cocaine bugs) are creeping on the skin (formication) giving rise to itching sensation, with resultant excoriation leading to irregular scratches and ulcers.

Ref: Essentials of Forensic Medicine and Toxicology By Dr K S Narayan Reddy, 27th Edition, Pages 535-6

769. Clouding of Consciousness is seen in:

a) Dementia

b) Delirium

c) Delusion

d) Hallucination

Correct Answer - B
Delirium

770. ECT is contraindicated in -

a) Very ill patients

b) Raised ICT

c) Heart disease

d) Pregnancy

Correct Answer - B
Ans. is 'b' i.e., Raised ICT

771. Morbid jealousy is diagnostic of :

a) Cocaine

b) Cannabis

c) Alcoholism

d) Tabacco Intoxication

Correct Answer - C
C i.e. Alcoholism

772. All of the following are true about paranoid schizophrenia except:

a) Most common type of schizophrenia

b) Onset in 3rd / 4th decade

c) Delusions of grandeur

d) Rapid deterioration of personality.

Correct Answer - D

D. i.e. Rapid deterioration of personality

773. Akathisia is treated by A/E

a) Trihexyphenidyl

b) Diazepam

c) Haloperidol

d) Promethazine

Correct Answer - C

C i.e. Haloperidol

- Akathisia is characterised by *inner restlessness* (feeling of discomfort & agitation) and *external restlessness* (*compulsion to move extremities & fidgety movements*). It is seen in basal ganglia disorders (eg Parkinson's disease) and alongwith extrapyramidal side effects of antipsychotic drugs.

- In acute dystonia (neurolept induced), there are *linguofacial bizarre muscle spasm* (1/t grimacing, torticollis, locked jaw, chewing, puffing of cheeks) occurring *within few hours or the most 1 week* of starting or rapidly increasing the dose of neuroleptic drug. DOC is anticholinergic, antihistaminic drugs.

- Anhedonia: It means not getting interest or happiness in pleasurable stimuli & nihilism (helplessness, worthlessness hopelessness). It is a *feature of depression*.

- The development of subjective *symptoms of restlessness within 4 weeks* of initiating or increasing the dose of neuroleptic with *Pacing, Rocking, Fidgety movements & inability to sit or stand for atleast several minutes* are diagnostic of neuroleptic induced acute akathisia.

- *Haloperidol, a neurolept causes akathisia (not used in treatment)*. Treatment of akathisia (internal & external restlessness): 1. *α Blockers (drug of choice)*, 2. *Centrally acting*

(antiparkinson) anticholinergics ex. trihexyphenidyl, benztropine etc are less effective, 3. Amantidine, Cyproheptadine & Diazepam are used in resistant cases only.

774. All are features of catatonia except :

a) Automatic obedience

b) Cataplexy

c) Catalepsy

d) Negativism

Correct Answer - B
B. i.e. Cataplexy

775. Which of the following subtype of Schizophrenia is associated with best prognosis?

a) Simple Schizophrenia

b) Paranoid Schizophrenia

c) Catatonic Schizophrenia

d) Hebephrenic Schizophrenia

Correct Answer - B

According to the DSM IV, Schizophrenia is classified into 5 types, paranoid, catatonic, disorganized, undifferentiated and residual.

Simple schizophrenia is included only under the ICD 10 classification.

Among the following, paranoid subtype has a more favorable prognosis.

Prognosis of catatonic is nearly as good as paranoid, undifferentiate type is associated with intermediate prognosis and hebephrenic type is associated with poor prognosis.

Ref: Current Diagnosis and Treatment : Psychiatry 2e, chapter 16.

776. Hypomania is differentiated from mania when -

- a) Clinical symptoms are less
- b) Clinical symptoms are present for fewer days
- c) When symptoms cause social impairment
- d) All of the above

Correct Answer - B

Ans. is 'b' i.e. Clinical symptoms are present for fewer days

[Ref Kaplan & Sadock's Lfr/e p. 535]

- If the symptoms occur for 4 days. and do not cause impairment of social/occupational functioning. and psychotic features are absent. then the diagnosis is hypomania.

777. Treatment of choice of bipolar mood disorder?

a) Fluoxetine

b) Imipramine

c) Lithium

d) Chlorpromazine

Correct Answer - C

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

Treatment of bipolar disorder

"Lithium carbonate is the mainstay of treatment in bipolar disorder, although sodium valproate and olanzapine are equally effective in acute mania, as is lamotrigine in the depressed phase" - Harrison.

Other drugs used in bipolar disorder

- Carbamazepine → Used for acute mania as well as bipolar illness.
- Valproate → Particularly useful for rapid cyclers.
- Atypical antipsychotics → Olanzapine, risperidone, aripiprazole or quetiapine with or without benzodiazepine is the treatment of choice for acute mania.
- Lamotrigine → Useful in rapidcycling bipolar depression.
- Topiramate and Gabapentin have shown some prophylactic effect in bipolar disorder.

Remember

- DOC for prophylaxis in bipolar disorder → Lithium
- DOC for acute mania → Olanzapine or other atypical antipsychotics with or without BZDs.

778. Rett's syndrome occurs due to deficiency of ?

a) Niacin

b) Biotin

c) Carotene

d) Vit D

Correct Answer - B
Ans. is 'b' i.e., Biotin

779. A child finds difficulty to spell and read, otherwise his IQ is normal, interacts well with parents and friends. Vision is normal. Most probable diagnosis of this condition is?

a) ADHD

b) Dyslexia

c) Autism

d) Asperger syndrome

Correct Answer - B

Dyslexia REF: Kaplan and sadock 10' ed p. 1162

Reading Disorder:

Reading disorder is characterized by an impaired ability to recognize words, slow and inaccurate reading, and poor comprehension. The term developmental alexia was accepted and defined as a developmental deficit in the recognition of printed symbols. This term was simplified by adopting the term dyslexia in the 1960s. *Dyslexia* was used extensively for many years to describe a reading disability syndrome that often included speech and language deficits and right-left confusion. Reading disorder is frequently accompanied by disabilities in other academic skills, and the term dyslexia has been replaced by broader terms, such as learning disorder.

Differential diagnosis:

- A recent study indicates that children with reading disorder consistently present difficulties with linguistic abilities, whereas children with ADHD do not.

- Reading disorder must be differentiated from mental retardation syndromes in which reading, along with other skills, is below the achievement expected for a child's chronological age. Intellectual testing helps to differentiate global deficits from more specific reading difficulties.

**780. Which of the following is the drug of choice for medication-resistant schizophrenia:
*September 2009***

a) Haloperidol

b) Chlorpromazine

c) Clozapine

d) Flupentixol

Correct Answer - C

Ans. C: Clozapine

Clozapine

- It may inhibit serotonin, muscarinic, and dopamine effects.
- Revolutionized treatment of medication-resistant schizophrenia.
- Effective in 30% of patients in whom other medications have failed.
- May improve tardive dyskinesia resulting from long-term use of traditional antipsychotics.
- Major drawback of reversible agranulocytosis occurs in 1-2%
- Interactions-Epinephrine and phenytoin may decrease effects; tricyclic antidepressants, neuroleptics, CNS depressants, guanabenz, and anticholinergics may increase effects
- Contraindications-Documented hypersensitivity; WBC (less than 3500 cells per millimeter cube) before or during therapy.
- Precautions-Pregnancy, Do not abruptly stop the medication; to minimize risk of agranulocytosis.

781. A 26-year-old man with schizophrenia and tardive dyskinesia. Which is the most appropriate pharmacotherapeutic agent?

a) Clozapine

b) Valproic acid

c) Haloperidol

d) Paroxetine

Correct Answer - A

Valproic acid is an anticonvulsant used as a mood stabilizer. It is found useful in the treatment of mania in a bipolar disorder.

It has also been valuable in the treatment of rapid cycling bipolar patients.

Paroxetine is an example of a selective serotonin reuptake inhibitor (SSRI), which is a newer form of antidepressant.

The SSRIs are being found to be as effective as the tricyclic antidepressants.

Haloperidol is an example of a neuroleptic or antipsychotic medication useful in the management of acute psychosis, as well as long-term care. ***Clozapine is a newer atypical antipsychotic medication.***

It is not associated with tardive dyskinesia as are the older neuroleptics.

This makes it a drug of choice for individuals who have developed signs of tardive dyskinesia after using other neuroleptics.

Problems with agranulocytosis prevent clozapine from being used as a "first line" neuroleptic.

Ref: Meltzer H.Y., Bobo W.V., Heckers S.H., Fatemi H.S. (2008). Chapter 16. Schizophrenia. In M.H. Ebert, P.T. Loosen, B. Nurcombe, J.F. Leckman (Eds), *CURRENT Diagnosis & Treatment: Psychiatry*, 2e.

782. As a side effect the metabolic syndrome is most commonly associated with which of the following group of medications -

a) Anti-anxiety drugs

b) Anti-depressant drugs

c) Anti-psychotic drugs

d) Anti-cholinergic drugs

Correct Answer - C

Ans. is 'c' i.e., Anti-psychotic drugs

Metabolic syndrome (svndrome-X1

- Metabolic syndrome is a combination of medical disorders that increase the risk of developing cardiovascular disorder and diabetes.
- The components of metabolic syndrome are obesity, insulin resistance (resulting in high insulin level), elevated serum triglyceride and LDL, low HDL and hypertension.
- Antipsychotics can cause weight gain, diabetes and metabolic syndrome.
- Antipsychotics commonly implicated are clozapine, olanzapine, chlorpromazine and thioridazine.

783. All are symptoms of morphine withdrawal except?

a) Mydriasis

b) Yawning

c) Lacrimation

d) Fall in BP

Correct Answer - D

Ans. is 'd' i.e., Fall in BP

Morphine withdrawal

- Manifestations of morphine withdrawal
 1. Lacrimation
 2. Anxiety & fear
 3. Mydriasis
 4. Diarrhea
 5. Palpitation
 6. Sweating
 7. Restlessness
 8. Insomnia
 9. Dehydration
 10. Rapid weight loss
 11. Yawning
 12. Gooseflash (Piloerection)
 13. Abdominal colic
 14. Rise in BP
- Delirium and convulsions are not a characteristic features (contrast barbiturates) and are seen only occasionally.
- Treatment consists of withdrawal of morphine and substitution with oral methadone followed by gradual withdrawal of methadone.

- Recently the NMDA antagonists and nitric oxide synthetase inhibitors have been

784. Which of the following produces neuropsychiatric symptom?

a) Cycloserine

b) Cyclosporine

c) Cephalosporine

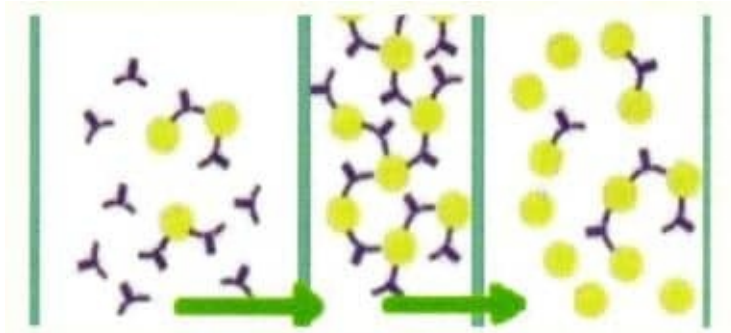
d) Ethambutol

Correct Answer - A

Cycloserine is an antibiotic effective against **Mycobacterium tuberculosis**.

The side effects are mainly **central nervous system (CNS) manifestations**, i.e. headache, irritability, depression, psychosis and convulsions. *Co-administration of pyridoxine can reduce the incidence of some of the CNS side effects (e.g. convulsions).*

785. Identify the Antigen-Antibody reaction in the figure shown in which Lattice hypothesis is used to explain the basis of this reaction .



a) Precipitation.

b) Opsonization.

c) Complement fixation.

d) Neutralization.

Correct Answer - A

Ans:A. Precipitation

Lattice hypothesis is used to explain the basis of Precipitation.

Precipitation Antigen-Antibody reaction

- **Marrack (1934) proposed the lattice hypothesis – mechanism of precipitation.**
- Precipitation reactions are based on the interaction of antibodies and antigens.
- They are based on two soluble reactants that come together to make one insoluble product, the precipitate .
- These reactions depend on the formation of lattices (cross-links)

when antigen and antibody exist in optimal proportions.

Precipitation curve shows 3 curves:

- Zone of Antibody excess
- Zone of Equivalence
- Zone of Antigen excess

Antigen-antibody reaction

- It is a specific chemical interaction between antibodies produced by B cells of the white blood cells and antigens during immune reaction.

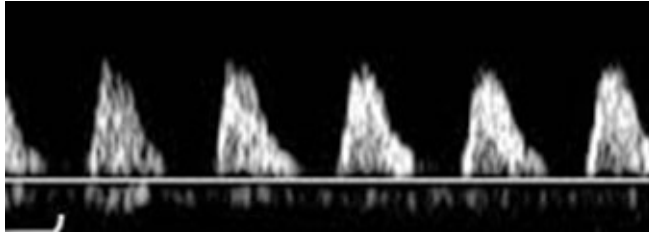
Types of antigen- antibody reactions in vivo:

- Agglutination
- Precipitation
- Complement fixation
- Neutralization
- Antibody dependant cell mediated cytotoxicity (ADCC)
- Immobilization

Types of antigen antibody reactions used in vitro:

- Agglutination
- Precipitation
- Neutralization
- Complement fixation
- Fluorescent Fluorescent-antibody technique antibody technique
- ELISA- Enzyme linked immunosorbent Enzyme linked immunosorbent assay
- Radio immunoassay
- Immunochromatography (ICT)

786. Which of the following have been shown in the image given below?



a) Normal Doppler - umbilical artery

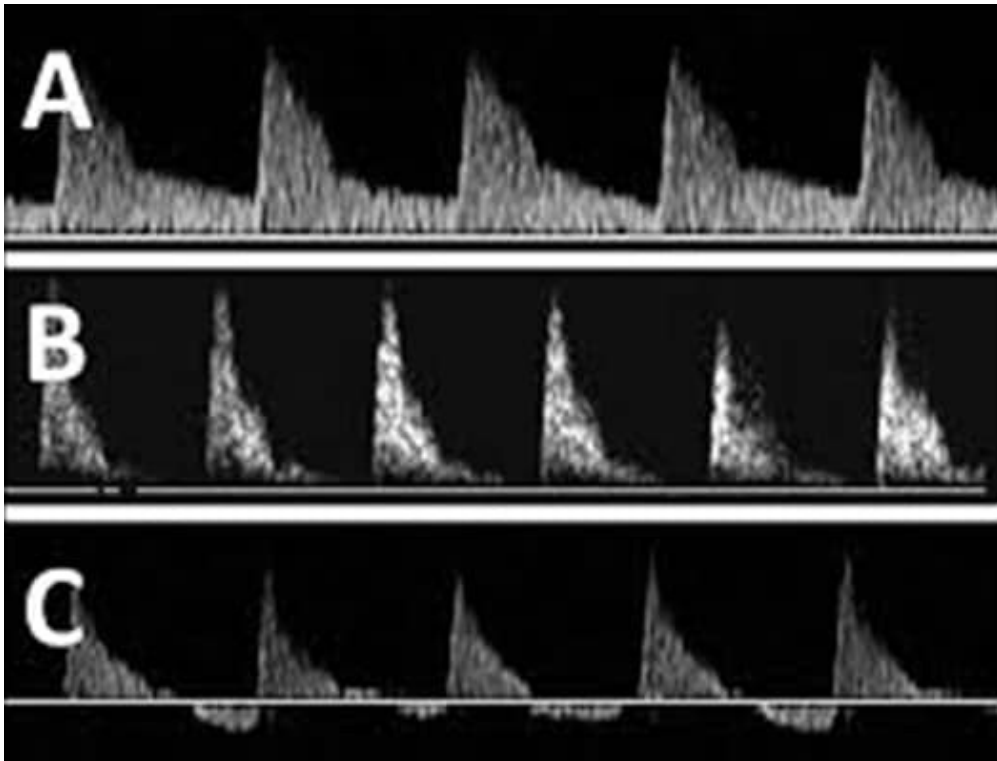
b) Raised S/D ratio

c) Absent end diastolic flow

d) Reversed end - diastolic flow

Correct Answer - C

Ans. is 'c' i.e., Absent end diastolic flow



- The pulsed wave Doppler obtained can demonstrate the presence of ductal steal by assessing the diastolic flow in the vessel.
- Panel (A) demonstrates normal flow.
- Panel (B) demonstrated absent end diastolic flow in moderate PDA steal and
- **Panel (C) demonstrates reversed diastolic flow in severe PDA steal.**

787. Diagnose the skin lesion as marked by a red arrow in the picture below ?



a) Acne vulgaris.

b) Indeterminate Leprosy.

c) Ichthyosis.

d) Molluscum contagiosum.

Correct Answer - D

The skin lesion as marked by a red arrow in the picture above represents **Molluscum contagiosum**.

Molluscum contagiosum (MC)

- It is a viral infection of the skin or occasionally of the mucous membranes, sometimes called water warts.
- It is caused by a DNA poxvirus called the molluscum contagiosum virus (MCV).
- MCV has no nonhuman-animal reservoir (infecting only humans).
- There are four types of MCV, MCV-1 to -4; MCV-1 is the most prevalent and MCV-2 is seen usually in adults.
- The virus that causes molluscum is spread from person to person by touching the affected skin.
- The virus may also be spread by touching a surface with the virus on

it, such as a towel, clothing, or toys.

- Molluscum can be spread from one person to another by sexual contact.
- This common viral disease has a higher incidence in children, sexually active adults, and those who are immunodeficient, and the infection is most common in children aged one to ten years old.
- MC can affect any area of the skin but is most common on the trunk of the body, arms, groin, and legs.
- It is spread through direct contact or shared items such as clothing or towel.

invalid question id