1. True about inferior oblique muscle:

a) Supplied by inferior division of 3rd CN

b) Primary eye action-Extorsion, abduction & depression

c) The muscle pass below inferior rectus

d) Origin from lacrimal bone

e) Nerve enters the muscle from ocular surface

Correct Answer - A:C

Ans. (A) Supplied by inferior division of 3rd CN (C) The muscle pass below inferior rectus

- 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.
- Occulomotor nerve in orbit: The larger, lower division divides into 3 branches for the medial rectus, the inferior rectus 6 the inferior oblique. All branches enter the muscle on their ocular surfaces except that for the IO which enters its posterior border'

2. True about Submandibular gland duct obstruction by stone:

a) Presents as a mass below body of mandible

b) Stone in Wharton duct can be palpated below mucous membrane of floor of mouth

c) Starts pain just after starting a meal

d) Pain carried by glossopharyngeal nerve

e) All the above

Correct Answer - E

Ans. e. All the above

- The submandibular salivary gland is a common site of calculus formation.
- The presence of a tense swelling below the body of the mandible, which is greatest before or during a meal and is reduced in size or absent between meals, is diagnostic of the condition.
- Examination of the floor of the mouth will reveal absence of ejection of saliva from the orifice of the duct of the affected gland.
- Frequently, the stone can be palpated in the duct, which lies below the mucous membrane of the floor of the mouth'
- All the 3 pairs of salivary glands are supplied by efferent (Parasympathetic & sympathetic) & afferent nerves (chorda tympani-br. of VII nerve & IX nerw). Afferent fibers carry pain impulse from salivary gland

3. True about palatine tonsil:

a) Crypts is lined by squamous epithelium

b) Supplied by IX CN

c) Tongue depressor is used for examination

d) Arterial supply is by tonsillar ascending branch of grater palatine artery

e) Present in oropharynx

Correct Answer - A:B:C:E

Ans. (A) Crypts is lined by squamous epithelium; (B) Supplied by IX CN; (C) Tongue depressor is used for examination; (E) Present in oropharynx

Palatine tonsil

- The Palatine tonsils are two prominent masses situated one on either side between the glossopalatine and pharyngopalatine arches.
- Each tonsil consists fundamentally of an aggregation of lymphoid tissue underlying the mucous membrane between the palatine arches.
- In the child the tonsils are relatively (and frequently absolutely) larger than in the adult
- The follicles of the tonsil are lined by a continuation of the mucous membrane of the pharynx, covered with stratified squamous epithelium

Arteries supplying the tonsil are the:

- Dorsalis linguae from the lingual
- The ascending palatine and tonsillar from the external maxillary
- The ascending pharyngeal from the external carotid

- The descending palatine branch of the internal maxillary
- A twig from the small meningeal.
- The veins end in the tonsillar plexus, on the lateral side of the tonsil
- The nerves are derived from the sphenopalatine ganglion, and from the glossopharyngeal.

4. True about articular cartilage:

a) In zone l chondrocytes are smaller

b) Zone 2 contains articular cartilage progenitor cells

c) Zone 3 contains calcified cartilage

d) Zone 4 contain calcified cartilage

e) Chondrocytes are active cell

Correct Answer - A:C:E

Ans.(A) In zone l chondrocytes are smaller; (C) Zone 3 contains calcified cartilage; (E) Chondrocytes are active cell

There are four zones (layers) of articular cartilage from the articular surface to subchondral bone.

1. Superficial zone (Zone-1)

- It is the thinnest zone.
- It consists of two layers : (i) A sheet of densly packed collagen with little polysaccharide and to cells, covers the joint surface, and (ii) flattened el ipsoid-shaped chondrocytes, with their major axis parallel to joint surface.

2. Transition zone (Zone2)

- Composition is intermediate between superficial zone and middle zone.

3.Middle zone or radial zone or deep zone (Zone-3)

- The chondrocytes are spheroidal in shape with their major axis perpendicular to joint surface.
- Chondrocytes are most active synthetically in this zone.
- This zone contains the largest diameter collagen fibrils, the highest concentration ofproteoglycans and the lowest concentration of water.

4. Calcified cartilage zone (Zone-4)

- It separates the middle zone from subchondral bone.
- The cells are small with small amount of endoplasmic reticulum and golgi apparatus with very little metabolic

5. True about innervation of parotid gland:

a) Postganglionic parasympathetic fibre secretomotor

b) Preganglionic parasympathetic fibre relay in Otic ganglion

c) Preganglionic parasympathetic nerve begin in inferior petrosal nucleus

d) Sympathetic nerve are vasomotor

e) Postganglionic parasympathetic fibres pass through the glossopharyngeal nerve

Correct Answer - A:B:D

Ans: a. Postganglionic parasympathetic fibre secretomotor. b. Preganglionic parasympathetic fibre relay in Otic ganglion. d. Sympathetic nerve are vasomotor.

Development:

- Parotid gland is the first salivary gland to appear, in early 6' week.
- It is ectodermal in origin and develops from the buccal epithelium just lateral to the angle of mouth

Structures emerging from parotid

The following structures emerge from the parotid gland:

Anterior border:

- Parotid duct

3 Terminal branches of facial nerve:

- The zygomatic and buccal branches: toward the temporal region, eyelids and cheek, respectively.
- Mandibular branch : Run along the body of the mandibletowards the mouth

Apex:

- 5th terminal branch of facial nerve: Cervical branch continues into

the neck (to platysma).
- Anterior & posterior divisions of retromandibular vein

Posterior border:
- Posterior auricular nerve
- Posterior auricular artery
- Posterior auricular vein

Along base:
- superficial temporal artery
- temporal branch of facial nerve
- Auriculotemporal nerve

STRUCTURES WITHIN GLAND:

Arteries:
- External carotid artery enters through posteromedial surface
- Maxillary artery
- Superficial temporal vessel
- Posterior auricular artery

Veins:
- The retromandibular veins

Facial Nerve

Parotid Duct (Stenson's duct)
- The duct turns opens into the vestibule of the mouth (gingivo- buccal vestibule) opposite the crown of the upper 2nd molar tooth

Nerve supply:
- **PARASYMPATHETIC:auriculo temporal nerve**
- **SYMPTHETIC SUPPLY-** plexus around the external carotid artery.
- **SENSORY NERVES: auriculotemporal nerve**, except for parotid fascia & overlying skin which are innervated by **Great auricular nerve (C2, C3).**

6. Which of the following muscle is supplied by median nerve :

a) Oppenenspollocis

b) Adductor pollicis

c) Lateral half of the Flexor digitorumprofundus

d) Superficial head of flexor pollicis brevis

e) Deep part of flexorpollicis brevis

Correct Answer - A:C:D

Ans. a. Oppenenspollocis; c. Lateral half of the Flexor digitorumprofundus; d. Superficial head of flexor pollicis brevis

- There are four short muscles of thumb (pollex), they are abductor pollicis brevis, opponenspollicis, flexor pollicis brevis and adductor pollicis. The first three of these muscles form the thenar eminence.
- All these muscles are supplied by median nerve except for adductor pollicis which is innervated by ulnar nerve.

7. True about abduction at shoulder joint:

a) Supraspinatus initiates abduction

b) Serratus anterior & trapezius also help in abduction

c) Multipennate deltoid clavicular fiber is main abductor

d) Axillary nerve injury has no effect on abduction

e) Musculotendinous cuff stabilizes shoulder joint

Correct Answer - A:B:E

Ans. (a) Supraspinatus initiates abduction (b) Serratus anterior & trapezius also help in abduction (e) Musculotendinous cuff stabilizes shoulder joint.

MOVEMENTS OF SHOULDER JOINT

- **Movement in every direction (Flexion, extension, abduction, adduction, rotation, circumduction)**
- Spinal Cord regulating Shoulder movements (C5, C6, C7 & C8)
- Flexion, Abduction, & lateral rotation (C5, C6,).
- Extension, Adduction, & Medial rotation is (C6, C7, C8)
- **Movements that take place during abduction of shoulder are axial rotation of humerus at acroclavicular joint ,elevation of humerus& movement at clavicular end of sternoclavicular joint.**

TYPE OF MOVEMENT	PLANE OF MOTION	AXIS OF MOTION	MUSCLES INVOLVED	HUMERAL HEAD GLIDING	RANGE OF MOTION	FA LI
					Total-0-165º or 175º Full internal	-In gl l T

Abduction	Frontal plane	Saggital axis	Deltoid, Supraspinatus	Inferiorly in glenoid cavity	rotation of humerus0-60º Full external rotation of humerus0-90º	I th j ca th hu

8. Organ which have no lymphatic supply:

a) Eyeball

b) Brain

c) Liver

d) Kidney

e) Spinal cord

Correct Answer - A:B:E

Ans. a. Eyeball; b. Brain & e. Spinal cord

- Lymph capillaries are absent from the cellular structures like brain, spinal cord, splenic pulp, bone morrow, articulate cartilage, epidermis, hair, nail & cornea.
- Lymphatic vessel are found in all tissue & organ of body except the central nervous system, eyeball, internal ear, epidermis of the skin, cartilage & bone.

9. Which of the following statement(s) is/are true about sphincters of body:

a) Lower 5 cm of oesophageal act as oesophageal sphincter & it is not morphologically different from other portion of oesophagus

b) Oesophageal & pyloric sphincter remains in topically contracted state

c) Pre-capillary sphincter is present in b/w metarteriole & capillary

d) Pudendal nerve supplies the sphincter urethrae

e) Sphincter of oddi lies at junction of duodenum & CBD

Correct Answer - B:C:D:E

Ans. b. Oesophageal & pyloric sphincter remains in topically contracted state; c. Pre-capillary sphincter is present in b/w metarteriole & capillary; d. Pudendal nerve supplies the sphincter urethrae ; e. Sphincter of oddi lies at junction of duodenum & CBD

- The common bile duct enters the duodenum at duodenum papilla. Its orifice is surrounded by the sphincter of Oddi 6 it usually unites with the main pancreatic duct just before entering the duodenum
- At the lower end of the esophagus, extending upward about 3 cm above its junction with stomach, it is broad lower esophageal sphincter.
- Lower oesophageal sphincter, a specialize zone of circular smooth muscle surrounding the oesophagus at its transit through the diaphragm and for much of its short abdominal floor
- At the point where each true capillary originates from a metarteriole, a smooth muscle fiber usually encircles the capillary. This is called,

the precapillary sphincter. This sphincter can open & close the entrance to the capillary

- Pyloric sphincter remain slightly tonically contracted almost all the time. Despite normal tonic contraction of the pyloric sphincter, the pylorus usually is open enough for water & other fluids to empty from the stomach into the duodenum with ease.

10. Muscle(s), which form the floor of pelvic floor:

a) Obturator internus

b) Piriformis

c) Puborectalis

d) Pubococcygeus

e) Ischiococcygeus

Correct Answer - C:D:E

Ans. c. Puborectalis; d. Pubococcygeus; e. Ischiococcygeus

- The pelvic floor is formed by the large levator ani (with parts including the pubococcygeus, puborectalis, and iliococcygeus) and the much smaller coccygeus.

11. True about Atlanto-axial joint:

a) Vertebral artery pass through grove on arch of atlas vertebrae to foramen magnum

b) Permits flexion & extension

c) Permit side to side movement of head

d) Permits flexion only

e) Permits rotation

Correct Answer - A:C:E

Ans. a. Vertebral artery pass through grove on arch of atlas vertebrae to foramen magnum;c. Permit side to side movement of head ; e. Permits rotation

- There are 3 atlantoaxial articulations- two lateral atlantoaxial joints b/w the lateral masses of Cl & C2 vertebrae & one median atlantoaxial joint b/w the dens of C2 & the anterior arch transverse ligament of the atlas
- Movement(mainly rotation) at all three atlantoaxial joints permits the head to be turned from side to side, as occurs when rotating the head to indicate disapproval(the 'NO' movement)
- The most important factors maintaining stability are the ligaments, of which the transverse atlantal ligament is the strongest.
- The alar ligaments are weaker

12. All are true about CSF except:

a) Total volume is 250 ml

b) Pressure is 60-180 mm of H2O

c) Formed from choroid plexus of 3rd ventricle

d) Formed from choroid plexus of lateral ventricle

e) None of the above

Correct Answer - A

Ans.a. Total volume is 250 ml

- The major source of CSF is the choroidal plexus of all 4 ventricles, mainly in two lateral ventricles.
- Other sources of CSF are ependymal cells of the ventricles and the brain itself, via perivascular spaces.
- The total volume of CSF in an adult is about 125-150 ml.
- The rate of formation of CSF is about 500-550 ml/day. Thus the CSF is replaced 3-4 times every day.
- CSF pH is 7.33
- 112 mm H_20 is the average normal CSF pressure

13. Which of the following play most important role in memory:

a) Synaptic network

b) Electric conduction network

c) Conductivity circuit

d) Conductivity network

e) None

Correct Answer - A
Ans: a. Synaptic Net.
[Ref: Ganong 25th/283-88; Guyton 12th/ 67; A K Jain 6th/1039-40]

- Synaptic network s single best answer "Long-term memory involves changes in the structure of neurons including growth of new processes and synapses.
- So, to the extent that you remember anything about this material on memory tomorrow, or next week, or next year, it will be because structural changes in synapses are beginning in your brains.

14. Cyanide poisoning block K influx & Na efflux. But ATP reverse this effect. So true statement(s) related to mechanism of action of cyanide is/are:

a) K influx & Na efflux is regulated by Na-K ATPase enzyme

b) K influx & Na efflux is regulated by Na-K pump

c) ATP provide energy for this channel

d) Na-K ATPase channel is ATP independent

e) None

Correct Answer - A:B:C

Ans: a. K influx & Na Efflux Is Regulated By Na-K-ATpase Enzyme b. K influx & Na Efflux Is Regulated By Na-K pump c. ATP provides energy for this channel.

[Ref: Reddy 32nd/595; Katzung 13th/1010; Guyton 12th/ 357; A K Jain 6th/459; Harrison 19th/262e-7]

Cyanide:

- Directly poisons the last step in the mitochondrial electron transport chain, cytochrome a3, which results in a shutdown of cellular energy production.
- This poisoning results from cyanide high affinity for certain metals, notably Co and Fe+++. Cytochrome a3 contains Fe+++, to which CN- binds.

Cyanide Poisoning:

- It inhibits the action of cytochrome oxidase, carbonic anhydrase & probably of other enzyme system.
- It blocks the final step of oxidative phosphorylation & prevents the

formation of ATP & its use as an energy source.

15. True about Carbon monoxide poisoning:

a) CO has 100 times more affinity than 02 for Hb

b) Cause right side shifting of 02 dissociation curve

c) Oxygen-haemoglobin saturation curve becomes hyperbolic shape

d) Pulse oximetry can accurately detect level of CO

e) 10-15% level of CO normally may occur in healthy nonsmoker

Correct Answer - C

Ans: c. Orygen-haemoglobin saturation saturation Curve Becomes Hyperbolic Shape

[Ref Ganong 25th/650-51; Guyton 12th/352; A K Jain 6th/ 431; httpst/pedclerk. bsd. uchicago. edu/page/ (www. nebi. Nlm. nih. gov)

Carbon-monoxide-poisoning:

- Carbon monoxide shifts the oxygen-haemoglobin saturation curve to the left and changes it to a more hyperbolic shape.
- Less oxygen is available for the tissues.
- plasma level of carboxyhemoglobin is normally quite low.
- At baseline, levels up to 3 percent ,nay be seen in nonsmokers, while smokers may have levels up to 10-15 % percent.
- Left shift of O2-Hb dissociation curve occur in - CO poisoning HbF, myoglobin eb decrease in body temperature.
- CO has about 240 times the affinity of O2for Hb; this means that CO will combine with the same amount of Hb as 02 when the CO partial pressure is 240 times lower.

16. Dead space is increased in:

a) Positive pressure ventilation

b) Extension of neck

c) Anticholinergic drug

d) Endotracheal tube intubation

e) Emphysema

Correct Answer - A:B:C:E

Ans: a. Positive pressure ventilation b. Extension of neck c. Anti Cholinergic drug e. Emphysema

Ref Ajay Yadav 5th/4-5; Ganong 25th/632-33; Guyton323; A Klain 6th/421

Anatomical Dead Space Increased in:

- OId age
- Neck extension
- jaw protrusion
- Bronchodilators
- Increasing lung volume (more in inspiration)
- Atropine(cause bronchodilation)
- Anaesthesia mask, circuits
- Intermittent positive pressure ventilation (IppV) & positive end expiratory pressure(PEEP)

Alveolar Dead Space increased by:

- Lung pathologies affecting diffusion at capillary membrane like interstitial lung disease, pulmonary embolism, pulmonary edema & ARDS
- General anaesthesia
- IPPV

- PEEP
- HYPotension

17. Which of the following is true about cardiac innervation:

a) T1 -T5 is sympathetic supply

b) Inferior & superior cervical ganglia not involve in innervation

c) Parasympathetic supply is from vagus nerve

d) Great cardiac nerve arise from superior cervical ganglia

e) Inferior cervical ganglia gives off Inferior cardiac nerve

Correct Answer - A:E

Ans: a. T1-T5 is sympathetic e. Inferior cervical ganglia gives off inferior cardiac nerve

[Ref: BDC 6th/ Vol. I 267;Grayb 40th/982; Guyton 12th/178; A K lain 6th/ 324]

Cardiac Innervation

- The cervical ganglia are paravertebral ganglia of the sympathetic nervous system.
- The cervical ganglion has three paravertebral ganglia.
- Superior cervical ganglion (largest) - adjacent to C2 & C3
- Middle cervical ganglion (the smallest) - adjacent to C6; target: heart,neck.
- Inferior cervical ganglion. The inferior ganglion may be fused with the first thoracic ganglion to form a single structure, the stellate ganglion adjacent to C7.
- The middle cardiac nerve (great cardiac nerve), the largest of the three cardiac nerves, arises from the middle cervical ganglion.
- Nerves emerging from chemical sympathetic ganglia contribute to the cardiac plexus.

- SymPathetic supply: T 1 to T 5 spinal segments.
- Sympathetic preganglionic fibres pass into the symPathetic trunk to superion middle & inferior cardiac ganglion
- Sympathetic postganglionic fibres passes via superior middle & inferior cardiac sympathetic nerves
- Parasympathetic supply to heart is via two vagus nerves with their cell bodies located in the medulla in the nucleus ambiguus.

18. True about cortisol level in blood plasma:

a) Morning concentration is 17-18nmol/d1

b) Morning concentration is 5-23 pg/dL

c) Evening concentration is almost half of morning concentration

d) Evening concentration is 5-23 i.ig/dL

e) None

Correct Answer - B:C

Ans: b. Morning concentration is 5-23 microg/dL c. Evening concentration is almost Half Of Morning Concentration

- Evening concentration is almost half of morning concentration (a/c below reference values).
- Cortisol concentration at 8. 00 am in morning 5-20 mcg/dL (140-550 nmol/L).

19. Saccadicc eye movement is controlled by:

a) Parietal lobe

b) Prefrontal lobe

c) Temporal lobe

d) Frontal cortex

e) Occipital lobe

Correct Answer - D

Ans: d. Frontal cortex

[Ref Ganong 25th/189, 195-96; Guyton 12tlt/786; A K Jain 1115-16]

- Normally saccadic movements are voluntary but can be aroused by peripheral visual or auditory stimuli by stimulation of frontal eye fields(area 8).
- Thus these movements are programmed in the frontal cortex.
- The bilateral frontal eye fields in this part of the cortex are concerned with the control of saccades, and an area just anterior to these fields is concerned with vergence and the near response.

20. True about normal ECG:

a) Normal PR interval is 0.12-0.20 s

b) PR internal correspondence initiation of P wave to initiation of R wave

c) QT internal correspondence initiation of Q wave to initiation of T wave

d) Normal QRS interval < 0.12 s

e) Normal QTc interval

Correct Answer - A:D

Ans: a. Normal PR interval is 0.12-0.20 s d. Normal QRS interval

[Ref: Ganong 25th/524; Guyton 12th/179-80; ECG made Easy by Hamptot 4th/6-71]

- The PR interval is measured from the beginning of P wave to the beginning of QRS complex.
- A QTc interval longer than 0. 45 s is likely to be abnormal.
- Normal QRS interval duration is no greater than 0. 12s.
- QT interval is a measure of the time between the start of the Qwave and the end of the T wave in the heart's electrical cycle.

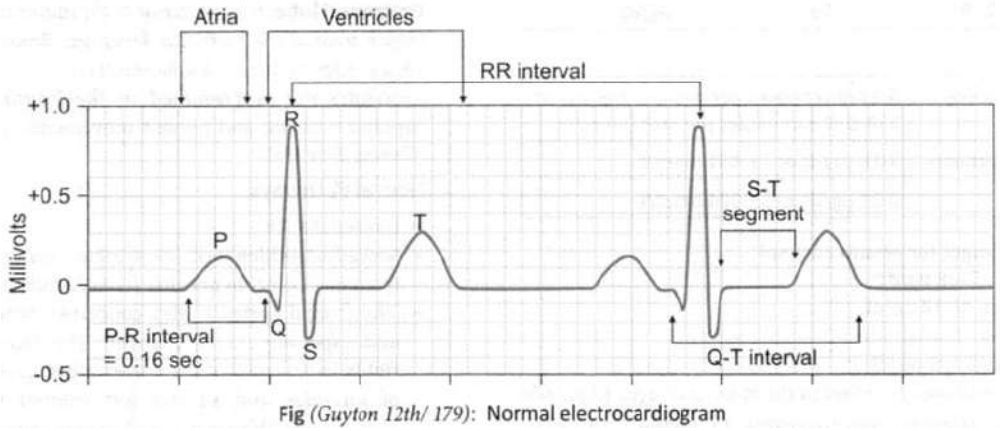


Fig *(Guyton 12th/ 179)*: Normal electrocardiogram

21. Which of the following is/are true about SIADH:

a) Desmopressin is used for treatment

b) Vasopressin level is inappropriately high

c) Plasma osmolality is higher than urine osmolality

d) Ted Osmolality of urine

e) Ted Osmolality of plasma

Correct Answer - B:D

Ans: b. Vasopressin level is inappropriately High d. Ted Osmolality of urine

[Ref Harrison 19th/2280; Ganong 25th/698; A K Jain 6th/ 673-74]

- Desmopressin is very useful in the management of diabetes insipidus.

Syndrome of Inappropriate Antidiuretic Hormone

- The syndrome of "inappropriate' hypersecretion of antidiuretic hormone (SIADH) occurs when vasopressin is inappropriately high relative to serum osmolality.
- Vasopressin is responsible not only for dilutional hyponatremia (serum sodium < 135 mmol/L) but also for loss of salt in the urine when water retention is sufficient to expand the ECF volume, reducing aldosterone secretion

Features:

- Hyposmolality
- Increased urine osmolality
- Urine osmolality becomes higher than plasma osmolality
- Urinary Na+ exceeds 20 mEq/L

22. Which of the following feature(s) is/are suggestive of nehogrnic DI in comparison to central DI :

a) Desmopressin nasal spray restore urine output to normal level

b) Basal vasopressin level > 1 pg/ml

c) Normal posterior pituitary bright spot is not visible on MRI scan

d) Change in water loss during fluid deprivation test

e) None

Correct Answer - B

Ans: b. Basal vasopressin level > 1 pg/ml

[Ref Ganong 25th/698; Guyton 12th/488-89; A K Jain 6th/674]

Failure to Produce ADH: "Central" Diabetes Insipidus.

- The treatment for central diabetes insipidus is administration of a synthetic analog of ADH, desmopressin, which acts selectively on V2 receptors to increase water permeability in the late distal and collecting tubules.
- Desmopressin can be given by injection, as a nasal spray, or orally, and it rapidly restores urine output toward normal.
- The polyuria anil polydipsia of nephrogenic DI are not affected by treatment *ith standard doses of DDAVP.

23. All are Urea cycle enzymes except:

a) Ornithine transcarbamylase

b) Carbamoyl-phosphate synthetase I

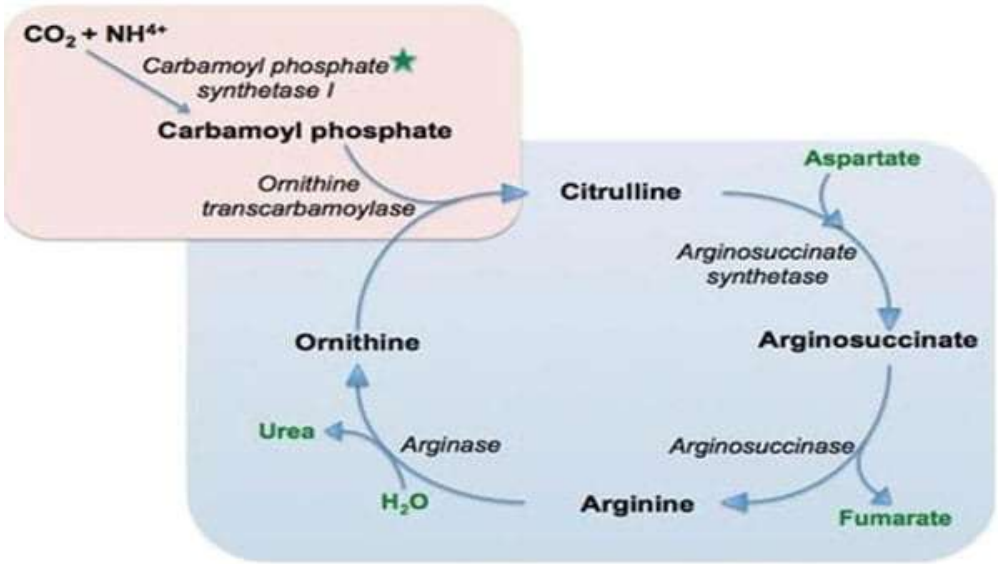
c) Argininosuccinase

d) Citrulline synthase

e) Argininosuccinic acid synthetase

Correct Answer - D

Answer: (D) Citrulline synthase [Ref Harper 30th/290-96, 29th/274-88; Lippincott



24. Non-polar amino acids are:

a) Proline

b) Lysine

c) Isoleucine

d) Arginine

e) Asparginine

Correct Answer - A:C

Ans: a. Proline c. Isoleucine [Ref Harper 30th/16-22; Lippincott 6th/1-9; Satyanarayan 4th/ 48]

- Acidic and Polar side chains Aspartic Acid→ Glutamic Acid
- Basic and Polar side chains→ Arginine, Lysine, Histidine
- Uncharged & Polar side chains→ Asparginine, Glutamine, Serine, Threonine, Tyrosine
- Non Polar Amino Acids with Non Polar side chains→ Glycine, Alanine, Valine, Leucine, Isoleucine, Proline.

25. True about squalene:

a) Present in subhuman primate only

b) It is one of the major carbohydrates of body

c) It involves in the synthesis of cholesterol

d) It involves in the synthesis of steroids

e) None

Correct Answer - C:D

Ans: (C) It involves in synthesis of cholesterol, (D) It involves in synthesis of steroids

- Squalene is a hydrocarbon and a triterpene, and is a natural and vital part of the synthesis of all plant and animal sterols, including cholesterol, steroid hormones, and vitamin D in the human body.
- Squalene is used in cosmetics, and more recently as an immunologic adjuvant in vaccines.
- It is a natural 30-carbon organic compound originally obtained for commercial purposes primarily from shark liver oil (hence its name), although plant sources (primarily vegetable oils) are now used as well, including amaranth seed, rice bran, wheat germ, and olives.
- Squalene and omega 2 fatty acid has unlike omega 3 fish oils more complete and effective chemical groups.

26. Molecular weight of protein can be determined/estimated by:

a) SDS-PAGE

b) Gel filtration chromatography

c) Agarose gel electrophoresis

d) Ultracentrifugation

e) FRET microscopy

Correct Answer - A:B:D

Ans: (A) SDS-PAGE (B) Gel filtration chromatography (D) Ultracentrifugation *[Ref Harper 30th/28; Shinde 7th/772-74; Satyanarayan 4th/ 725, 60; Vasudevan 5th/482-851*

- "SDS-PAGE is commonly used for molecular weight determination of proteins" (Vasudevan 5th/482)
- "SDS-PAGE is a popular technique for determination of molecular weight of proteins" (Satyanarayan 4th/ 725)
- " Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) is a reliable method for determining the molecular weight **(MW)** of an unknown protein".
- "The gel filtration chromatography technique is used for "Separation of protein molecules, purification of proteins & molecular weight determinations" **Ultra centrifugation** is an indispensable tool for the isolation of subcellular organelles, proteins, & nucleic acids. In addition, this technique is also employed in determination of molecular weight of macromolecules\

27. Gel used in RNA electrophoresis:

a) Agarose gel

b) Polyacrylamide plain gel

c) Polyacrylamide SDS (Sodium dodecyl sulphate) impregnated Polyacrylamide gel

d) A & C

e) None

Correct Answer - A

Ans: a. Agarose gel

- Separation of RNA in agarose gels is used for a number of different purposes, including Northern blots to monitor RNA expression levels, checking RNA integrity and size selection of RNA for cloning experiments.
- Separation of RNA based on fragment length requires conditions that are different from DNA analysis.
- The most frequently used denaturants for RNA agarose gel electrophoresis are formaldehyde, formaldehyde/formamide, and glyoxal plus DMSO.
- The most efficient RNA denaturant is methylmercury hydroxide. Because of the hazards associated with this denaturant, it is the least used system for RNA

28. Which of following releases/provide energy:

a) Conversion of ADP to ATP

b) Breaking of high energy bond to low energy bond

c) Conversion of pyruvate to lactate

d) Electrical gradient across inner & outer side of mitochondria] membrane

e) Passage of e- through FAD in electron transport chain

Correct Answer - B:D:E

Ans: (B) Breaking of high... (D) Electrical gradient across ... (E) Passage of e- through FAD...

- In absence of 0xygen pyruvate is reduced to lactic acid (without producing ATP). In anaerobic glycolysis, pyruvate acts as a temporary H-store.
- It dehydrogenation (oxidizes), the reduced NADH + H+ back to oxidized NAD+, so that glycolysis can continue even in the absence of 02. In presence of 02, lactic acid can be oxidized into pyruvic acid again.
- Electron transport is coupled to the phosphorylation of ADP by the transport ("pumping") of protons (H+) across the inner mitochondrial membrane from the matrix to the inter membrane space at Complexes I, III, and IV.
- This process creates an electrical gradient (with more positive charges on the outside of the membrane than on the inside) and a pH gradient (the outside of the membrane is at a lower pH than the inside).

- The energy generated by this proton gradient is sufficient to drive ATP synthesis. Thus, the proton gradient serves as the common intermediate that couples oxidation to phosphorylation.

29. Which of the following is feature(s) of diabetic ketoacidosis:

a) Decreased triglyceride level

b) Increased fatty acid level

c) TLipoprotein

d) Decreased ketone bodies

e) High Anion gap acidosis

Correct Answer - B:C:E

Ans: (B) Increased fatty acid level (C) TLipoprotein (E) High Anion gap acidosis *[Ref Harper 30th/ 231; Lippincott 6th/339, 345; Satyanarayan 4th/481, 682; Harrison 19th/2417-18]*

- DKA is characterized by hyperglycemia, ketosis, and metabolic acidosis (increased anion gap) along with a number of secondary metabolic derangements, Leukocytosis, hypertriglyceridemia, and hyperlipoproteinemia are commonly found as well
- Increased lactic acid production also contributes to the acidosis. The increased free fatty acids increase triglyceride and VLDL production. VLDL clearance is also reduced because the activity of insulin-sensitive lipoprotein lipase in muscle and fat is decreased.
- Hypertriglyceridemia may be severe enough to cause pancreatitis.
- Reduced insulin levels, in combination with elevations in catecholamines and growth hormone, increase lipolysis and the release of free fatty acids. Normally, these free fatty acids are converted to triglycerides or very-low-density lipoprotein (VLDL) in the liver.

30. Which of the following is/are true about pH of solution:

a) Absolute concentration of acid & salt

b) Relative concentration of acid & salt in solution

c) Increase of temperature increases pH

d) A rise in H+ concentration decreases pH

e) None

Correct Answer - B:D

Ans: (B) Relative concentration..., (D) A rise in H* concentration....

- "When pH measured at room temperature there is no direct correlation between pH and temperature.
- A rise in H+ concentration decreases pH while a fall in H+ concentration increases pH. The reverse is true for OH- concentration
- The ratio of salt to acid concentration- Actual concentrations of salt a acid in a buffer solution may be varying widely, with no change in pH, so long as the ratio of the concentrations remains the same

31. True statement(s) about Magnetic-activated cell sorting:

a) It is a method to separate specific cell from complex mixture

b) Fluorescent dyes are uses

c) Antibody-coated magnetic nanoparticles are used

d) Antibodies used are specific for certain cell surface markers

e) Magnetic field is applied

Correct Answer - A:C:D:E

Ans: (A) It *is* a method..., (C) Antibody-coated magnetic..., (D) Antibodies used are..., (E) Magnetic field is appli...

- MACS, is a procedure developed by Miltenyi Biotec to separate cells from complex mixtures using antibody-coated magnetic nano particles.
- The antibodies are specific for certain cell surface markers, either expressed on your population of interest (positive selection), or expressed on undesired cell types (negative selection).
- After adding the antibody-coated beads to the cell mixture and incubating, the suspension is added to a special single-use separation column affixed to a magnet, to which the beads stick, while unlabeled cells flow through.

32. Silver staining is done for:

a) DNA

b) RNA

c) Karyotyping analysis

d) Protein

e) Collagen

Correct Answer - A:B:C:D:E

Answer- (A) DNA (B) RNA (C) Karyotyping analysis (D) Protein (E) Collagen

- Silver staining is a highly sensitive method for detecting proteins and nucleic acids (dsDNA & RNA) in polyacrylamide slab gels.
- Silver staining is the use of silver to selectively alter the appearance of a target in microscopy of histological sections; in temperature gradient gel electrophoresis; and in polyacrylamide gels.
- Silver staining is the most sensitive method for permanent staining of proteins or nucleic acids in polyacrylamide gels.
- Histological characterization: Silver staining aids the visualization of targets of interest, namely intracellular and extracellular cellular components such as DNA and proteins, such as type III collagen and reticulin fibres by the deposition of metallic silver particles on the targets of interest.

33. Non-coding RNA is/are:

a) miRNA

b) Si RNA

c) tRNA

d) mRNA

e) rRNA

Correct Answer - A:B:C:E

Ans: a. miRN..., b. Si RNA..., c. tRNA..., e. rRNA..., *[Ref Harper 30th/394-95, 368; en. wikipedia. org; Lippincott 6th/417]*

- All eukaryotic cells have two major classes of RNA, the protein coding RNAs, or messenger RNAs (mRNAs), and two forms of abundant non-protein coding RNAs delineated on the basis of size: the large ribosomal RNAs (rRNA) and long noncoding RNAs (lncRNAs) and small noncoding RNAs transfer RNAs (tRNA), the small nuclear RNAs (snRNAs) and the micro and silencing RNAs (miRNAs and siRNAs).
- The mRNAs, rRNAs and tRNAs are directly involved in protein synthesis while the other RNAs are participate in either mRNA splicing (SnRNAs) or modulation of gene expression by altering mRNA function (mi/SiRNAs) and/or expression (lncRNAs). These RNA differ in their diversity, stability, and abundance in cells

34. Polymerase III synthesizes:

a) Fragment 28S of rRNA

b) Fragment 23S of rRNA

c) Fragment 5 S of rRNA

d) tRNA

e) mRNA

Correct Answer - C:D

Ans: c. and d *[Ref Harper 30th/395-98; Lippincott 428]*

- "RNA polymerase III synthesizes tRNA, 5S rRNA, and some snRNA and snoRNA" *(Lippincott 428)*

35. Two strands of DNA is/are held by:

a) Glycosidic bond

b) Hydrogen bond

c) Covalent bond

d) Ionic bond

e) Van der waal force

Correct Answer - B

Answer(b) hydrogen bond *[Ref Harper 30th/359; Lippincott 6th/396-97; Satyanarayan 4th/75]*

- The two strands are held together by *hydrogen bond* formed by *complementary base pairs" (Satyanarayan 4th/75)*
- "The *base pairs are held together by hydrogen bonds:* two between A and T and three between G and C. These *hydrogen bonds,* plus the hydrophobic interactions between the stacked bases, *stabilize the structure of the double helix.*

36. Which of the following is/are true about Translation:

a) N-formyl methionine is first amino acid in prokaryotes

b) Uses energy in form of GMP

c) Elongation factor EF-1 & EF-2 used in prokaryotes

d) Elongation factor P is used in eukaryotic organism

e) Three initiation factors are required in prokaryotes

Correct Answer - A:E

Ans: a. N-formylmethionine..., *e.* Three initiation *[Ref Harper 30th/419-23; Lippincott 6th/438-42; Satyanarayan 4th/554-60]*

- In eukaryotes, the first amino acid incorporated is methionine (AUG codon). But in prokaryotes, the same codon attracts N-formyl methionine, which is the first amino acid" *(Vasudevan 5th/432)*
- "Elongation factor P is a *prokaryotic protein translation factor* required for efficient peptide bond synthesis on 70S ribosomes from fMet-tRNAf Met. It probably functions indirectly by altering the affinity of the ribosome for aminoacyl-tRNA, thus increasing their reactivity as acceptors for peptidyl Steps in Protein Synthesis
- In prokaryotes, *three initiation factors are known (IF-1, IF-2, and IF-3),* whereas in *eukaryotes, there are over ten (designated eIF to indicate eukaryotic origin).* Eukaryotes also require ATP for initiation.

37. Nucleic acid amplification techniques are:

a) PCR

b) Real time PCR

c) DNA Cloning

d) Next generation DNA sequencing

e) None

Correct Answer - A:B

Ans: a. PCR ..., b. Real time ....[Ref Harper 30th/458; Robbins 9th/180; Lippincott 6th/479;Harrison 19th/ 150e-7; http://link. springer. corn]

- Real-time PCR automates the laborious process of amplification by quantitating reaction products for each sample in every
- Cycle.
- There are several methods for amplification (copying) of small numbers of molecules of nucleic acid to readily detectable levels.
- These NAATs include PCR, LCR, strand displacement amplification, and self-sustaining sequence replication.
- The amplified nucleic acid can be detected after the reaction is complete or (in real-time detection) as amplification proceeds. The sensitivity of NAATs is far greater than that of traditional assay methods such as culture.

38. Second messenger is/are:

a) Ca2+

b) DNA

c) Histone

d) *cDNA*

e) None

Correct Answer - A

Ans: a. Ca2+ [Ref Harper 30th/501, 91-92, 179, 343; Lippincott 6th/94-951

- Nucleotides, such as cyclic adenosine mono-phosphate (cAMP) and cyclic guanosine monophosphate (cGMP), serve as second messengers in signal transduction pathways.
- Two of the most widely recognized second messenger systems are the calciumlphosphatidy linositol system, and the adenylyl cyclase system, which is particularly important in regulating the pathways of intermediary metabolism.

39. True about genetic code:

a) Follow Mendelian law

b) It is total number of chromosome in the body

c) It is nucleotide sequence which codes for amino acids

d) It codes for DNA

e) None

Correct Answer - C

Ans: c.It is nucleotide sequence which codes for amino acids

- **M**endelian Genetics is widely regarded as the cornerstone of classical genetics. It is a set of primary beliefs relating to the transmission of hereditary characteristics from parent organisms to their offspring
- The genetic code is a dictionary that identifies the correspondence between a sequence of nucleotide bases and a sequence of amino acids.
- The Nucleotide Sequence of an mRNA Molecule Consists of a Series of Codons That Specify the Amino Acid Sequence of the Encoded Protein

40. Restriction endonuclease cleaves:

a) dsDNA

b) RNA

c) Histone

d) Protein

e) ssDNA

Correct Answer - A
Ans: a. dsDNA

- Restriction endonucleases (restriction enzymes), which cleave *double-stranded (ds) DNA* into smaller, more manageable fragments, has opened the way for DNA analysis"
- Restriction enzyme (RE or Restriction Endonuclease) is an enzyme that *cleave double-stranded DNA*Q *at specific recognition nucleotide known as restriction sites*Q
- The cut DNA fragments by RE may have *sticky ends (cohesive ends)*° or *blunts ends*° depending on the mechanism used by enzyme
- DNA fragments with sticky ends are particularly useful for recombinant DNA experiments (hybrid or chimeric DNA molecules)
- Restriction enzyme is *named according to the organism from which it was isolated*

41. Phospholipase A2 act on:

a) Phosphoglyceric acid

b) Phosphate

c) Ca+

d) Phosphatidyl-inositol

e) None

Correct Answer - D

Ans: d. Phosphatidyl-inositol

- Phospholipases hydrolyze the phosphodiester bonds of phosphoglycerides, with each enzyme cleaving the phospholipid at a specific site.
- Phospholipases release molecules that can serve as messengers (for example, DAG and IP3), or that are the substrates for synthesis of messengers (for example, arachidonic acid.
- *P*hospholipases are responsible not only for degrading phospholipids, but also for "remodeling" them. For example, phospholipases AI and A2 remove specific fatty acids from membrane-bound phospholipids; these can be replaced with alternative fatty acids using fatty acyl CoA transferase**.**

42. Enzyme used in DNA repair is/are:

a) DNA gyrase

b) DNA polymerase

c) Restriction endonuclease

d) DNA ligase

e) None

Correct Answer - B:D

Ans: b. DNA poly..., d. DNA (Ref Harper 30th/382, 389-92; Lippincott 6th/ 411-131

- When the strand containing the mismatch is identified, an endonuclease nicks the strand and the mismatched nucleotide(s) is/are removed by an exonuclease.
- Additional nucleotides at the 5'- and 3'-ends of the mismatch are also removed. The gap left by removal of the nucleotides is filled, using the sister strand as a template, by a DNA polymerase.
- The 3'-hydroxyl of the newly synthesized DNA is joined to the 5'-phosphate of the remaining stretch of the original DNA strand by DNA ligase

43. Nucleosome contains:

a) DNA

b) RNA

c) Chromatin

d) Histone

e) None

Correct Answer - A:D

Ans: a. DNA d. Histone [Ref Harper 30th/371-72; Lippincott 6th/ 409]

- Histones are highly alkaline proteins found in eukaryotic cell nuclei that package and order the DNA into structural units called nucleosomes.
- They are the chief protein components of chromatin, acting as spools around which DNA winds, and playing a role in gene regulation.
- When the histone octamer is mixed with purified dsDNA under appropriate ionic conditions, the same x-ray diffraction pattern is formed as that observed in freshly isolated chromatin. Biochemical and electron microscopic studies confirm the existence of reconstituted nucleosomes.
- In the nucleosome, the DNA is super coiled in a left handed helix over the surface of the disk-shaped histone octamer

44. Serotonin, a mediator of inflammation in our body, is secreted /released by:

a) Leukocytes

b) Endothelial cell

c) Mast cell

d) Platelet

e) Macrophage

Correct Answer - D
Answer- D. Platelet

- Serotonin :It is found in the intestinal mucosa, brain tissue & platelets.
- Release of serotonin (and histamine) from platelets is stimulated when platelets aggregate after contact with collagen, thrombin, adenosine diphosphate (ADP), and antigen-antibody complexes.

45. Autosomal recessive disease(s) is/are :

a) Sickle cell anaemia

b) Phenylketonuria

c) Tuberous scelerosis

d) Familial polyposis coli

e) Marfan syndrome

Correct Answer - A:B

Answer- (A) Sickle cell anaemia (B) Phenylketonuria

1. Metabolic-

- Cystic fibrosis
- Phenylketonuria
- Galactosemia
- Homocystinuria
- Wilson disease
- Hemochromatosis

2. Hematopoietic

- Sickle cell anemia
- Thalassemias

3. Endocrine

- Congenital adrenal hyperplasia

4. Skeletal

- Ehlers-Danlos syndrome

5. Nervous

- Friedreich ataxia
- Spinal muscular atrophy

46. Which of the following is/are features(s) of lewy body dementia:

a) Plaque containing beta-amyloid peptide

b) Deposition of a-synuclein protein

c) Often resistant to standard treatment

d) Common in elderly

e) Risk of falling may present

Correct Answer - B:C:D:E

Answer- (B) Deposition of a-synuclein protein (C) Often resistant to standard treatment (D) Common in elderly (E) Risk of falling may present

- Alpha- synuclein containing Lewy bodies occur in the brainstem, midbrain, olfactory bulb, and neocortex.
- This is a neuro degenerative disorder clinically characterized by dementia and signs of Parkinson's disease.
- Common in elderly.
- The DLB clinical syndrome is characterized by visual hallucinations, parkinsonism, fluctuating alertness, falls.

47. True about Alzheimer's disease:

a) More common in older age

b) Impairment of the ability to remember new information

c) Mainly affects long term memory

d) General cognitive behavior impaired in prodromal phase

e) Atrophy of frontal & parietal lobe

Correct Answer - A:B:D:E

Answer- (A) More common in older age (B) Impairment of the ability to remember new information (D) General cognitive behavior impaired in prodromal phase (E) Atrophy of frontal & parietal lobe

- Alzheimer's disease (AD) is a slowly progressive disease of the brain that is characterized by impairment of memory.
- Alzheimer's disease is Common in 5th and 6th decade.

Early Stage-

- This is considered as a mild/early stage and the duration period is 2-4 years.
- Frequent recent memory loss.
- Writing and using objects become difficult and depression and apathy can occur.

Second stage-

- This is considered as a middle/moderate stage and the duration is 2-10 years.
- Dementia of Alzheimer's type is associated with Depressive symptoms, Delusions ,Apraxia and aphasia.
- Pervasive and persistent memory loss impacts life across settings.

Moderate stage-

- Increased memory loss and confusion.

Last stage-

- This is considered as the severe stage and the duration is 1-3 years.
- Extreme problems with mood, behavioral problems, hallucinations, and delirium.

48. True about Hypersensitivity pneumonitis:

a) Occurs due to inorganic antigen

b) Increased CD8+ T cells in bronchoalveolar lavage

c) Manifests mainly as an occupational and environment disease

d) For severe acute cases, oral steroids is given for 3-4 weeks

e) Interstitial inflammatory infiltrate is seen in lung

Correct Answer - B:C:D:E

Answer- (B) Increased CD8+ T cells in bronchoalveolar lavage (C) Manifests mainly as an occupational and environment disease (D) For severe acute cases, oral steroids is given for 3-4 weeks (E) Interstitial inflammatory infiltrate is seen in lung

- It is manifested mainly as an occupational disease, in which exposure to inhaled organic agents leads to acute and eventually chronic pulmonary disease.
- Bronchoalveolar lavage specimens also consistently demonstrate increased numbers of both CD4+ and CDB+ T lymphocytes.
- Histology shows evidence of an interstitial inflammatory infiltrate in the lung.
- In acute cases, prednisolone should be given for 3-4weeks, starting with an oral dose of 40 mg per day.

49. RS cell having same immunophenotyping are present in which subtypes of Hodgkin's lymphoma:

a) Nodular sclerosis

b) Lymphocyte predominant

c) Lymphocyte rich

d) Mixed cellularity

e) Lymphocyte depletion

Correct Answer - A:C:D:E

Answer- (A) Nodular sclerosis (C) Lymphocyte rich (D) Mixed cellularity (E) Lymphocyte depletion

- In the first four subtypes- nodular sclerosis, mixed cellularity, lymphocyte-rich, and lymphocyte cells.

50. True about Lyonisation of X chromosome:

a) Inactivation of X chromosome only in somatic cell

b) Inactivation of X chromosome only in germ cell

c) Inactivation of X chromosome in somatic & germ cell both

d) Maximun number of Barr body is equal to X chromosome

e) All

Correct Answer - A

Answer- A. Inactivation of X chromosome only in somatic cell

- In female, one of two X-chromosome (either paternal or maternal) is inactivated during embryogenesis as stated in Lyon hypothesis.
- This inactivation is passed to all the somatic cell while the germ cells in the female remain unaffected.

51. Two most common cancer in Indian woman is:

a) Carcinoma breast

b) Carcinoma cervix

c) Carcinoma colon

d) Carcinoma stomach

e) Carcinoma lung

Correct Answer - A:B

Answer- (A) Carcinoma breast (B) Carcinoma cervix

- In women, cancer breast, cervix uteri, colorectum, ovary, lip & oral cavity.

52. Which of the following is paraganglioma:

a) Adrenal Pheochromocytoma

b) Extra-adrenal Pheochromocytoma

c) Carotid body tumour

d) Carcinoid tumour

e) Glomus tympanicum

Correct Answer - B:C:E

Answer- (B) Extra-adrenal Pheochromocytoma (C) Carotid body tumour (E) Glomus tympanicum

- Pheochromocytorna is a chromaffin-cell neoplasm that can arise an adrenal (adrenal medulla) or extraadrenal tumor.
- Extraadrenal pheochromocytoma is also referred to as paraganglioma.
- The carotid body tumor is a prototype of a parasympathetic paraganglioma.
- Glomus tympanicum: Most common tumour in middle ear.

53. Feature(s) of XIII factor deficiency is/are:

a) Delayed wound closure

b) Clot solubility tests are abnormal

c) TaPTT

d) TPT

e) TBT

Correct Answer - A:B

Answer- A,Delayed wound closure B,Clot solubility tests are abnormal

- It characteristically leads to delayed bleeding that occurs hours to days after a hemostatic challenge.
- Clot solubility tests are abnormal.

54. Which of the following statement(s) is/are correct except:

a) Increased PT in extrinsic pathways

b) Increased aPTT in instrinsic pathways

c) If platelet count is > 1.5 lac/microL, then normal homeo-stasis present

d) BT is decreased in platelet abnormality

e) None

Correct Answer - D

Aswer- D. BT is decreased in platelet abnormality

- Hemostasis is spontaneous arrest of bleeding by physiological Process.
- Prothrombin time (PT):
- This assay tests the extrinsic and common coagulation pathways.
- Partial thromboplastin time (PTT):
- This assay tests the intrinsic and common clotting pathway.
- Prolongation generally indicates a defect in platelet numbers or function.

55. True about Dentigerous cyst:

a) Arises in relation to unerupted teeth

b) It most commonly encroaches maxillary antrum

c) Mandibular third molar is common site

d) Common in mandible

e) All

Correct Answer - A:C:D

Answer- A,Arises in relation to unerupted teeth C,Mandibular third molar is common site D,Common in mandible

- Common in lower jaw (mandible) in women 30-40 years.
- It occurs in relation to unerupted, permanent, molar tooth, most commonly the upper or lower third molar.

56. Prognostic factors for carcinoma esophagus is/are:

a) Depth of invasion

b) Lymph node status

c) Tumour grading

d) Stage of the disease

e) All

Correct Answer - E
Answer- E, All

- Stage The most reliable prognostic facfor for esophageal cancer is the stage of the tumour at the time of diagnosis.
- Tumour size
- Lymph nodes status
- Cancer has spread to distant organs
- Cancer that remains after surgery
- Tumour grade

57. True about surgical jaundice:

a) Increase of serum bilirubin

b) Increase acid phosphatase

c) Increase alkaline phosphatase

d) Urine bilirubin is absent

e) Stool sterocobilinogen absent

Correct Answer - A:C:E

Answer- A,Increase of serum bilirubin C,Increase alkaline phosphatase E,Stool sterocobilinogen absent

Obstructive jaundice-

1. Biluribin
Direct & Indirect- increased
2. Urine bilirubin- increased
3. Serum albumin- generally unchanged
4. Alkaline phosphatase- Increased
5. Sterocobilinogen- absent

58. Which of the following marker favours diagnosis of preinvasive & invasive cervical cancer:

a) Ki67

b) Oncoprotein E6

c) p16INK4, cyclin E, and Ki-67

d) Oncoprotein E8

e) None

Correct Answer - A:B:C

Answer- A,Ki67 B,Oncoprotein E6 C,p16INK4, cyclin E, and Ki-67

- The expression of E7 determines the inactivation of pRb with a consequent increase of free E2F in the cell, leading to both an increase of cyclin-dependent kinase inhibitor pl6 (p16INK4a) and aberrant proliferation (marked by increased levels of Ki-67 expression).

59. Which of the following marker/mutation is/are seen in papillary carcinoma of thyroid:

a) Synaptophysin

b) RET/PTC

c) P53

d) NTRK1

e) RAS

Correct Answer - B:D:E

Answer- B,RET/PTC D,NTRK1 E,RAS

- Genetic Alterations in Thyroid Neoplasia-
- RET/PTC
- BRAF
- TRK
- RAS

60. Which of the following is/are true about pregabalin:

a) Approved drug for diabetic neuropathy

b) Approved for treatment of generalized tonic clonic seizure

c) Peripheral edema is side effect

d) Somnolence is side effect

e) Approved for use in Partial seizure

Correct Answer - A:C:D:E

Ans. a. Approved drug For Diabetic neuropathy; c. Peripheral edema is side effect; d. Somnolence is side effect; e. Approved for use in partial seizures.

[Ref KDT 7th/419; Katzung 13th/4M, 419; Harrison tgth/2682; Pharmacology by Satoskar 24th 139)

- Pregabalin side-effect includes: Cognitive changes, sedation & peripheral edema.
- GABA analog.
- Anti seizure activity and for its analgesic property.
- Approved for use in neuropathic pain, including painful diabetic peripheral neuropathy, post herpetic neuralgia & complex regional pain syndrome.
- Toxicity included- Somnolence, dizziness, ataxia

61. Drug(s) used for overactive bladder:

a) Oxybutinin

b) Tolterodine

c) Mirabegron

d) Onabotulinum toxin A

e) Pirenzepine

Correct Answer - A:B:C:D

Ans . a. Oxybutynin; b. Tolterodine; c. Mirabegron; D. Onabotulinum toxin A

[R4 KDf 7th/117-18; Katzung 13th/ 127-28; Rang & Date 8th/366; Pharmacology by Satoskar 24th/ 3OS - 07]

Overactive Bladder:

- Antimuscarinic drugs such as Oxybutynin, Flavoxate, tolterodine & trospium are used for both neurogenic & non- neurogenic overactive bladder.
- Sollfenacin & darifenacin are the new drugs(M3 antagonist) for use in overactive bladder.
- Mirabegron is beta-3 adrenergic agonist used for overactive bladder.
- Onabotulinum toxin A is used as single intradetrusor injection, to treat overactive bladder.

62. All are true about warfarin except:

a) Act through inhibition of coagulation factor IX

b) Protamine sulphate reverses its action

c) Monitoring is done through INR

d) Target of INR with warfarin is generally 2-3

e) Skin necrosis is usually occur in 3-10 days of initiation of warfarin

Correct Answer - B

Ans: b. Protamine sulphate reverses its action.

[Ref KDT 7th/620-24; Katzung 13th/ 590-92; Rang & Dale Sth/ 30q Pharmacology by Satoskar 24th/ jN-301]

- Warfarin induced skin necrosis is a rare complication characterized by the appearance of skin lesion 3-10 days after initiation of treatment.
- Dose of warfarin adjusted to give an INR of 2-4, the precise target depending on the clinical situation.
- The reference range for prothrombin time is usually around 12-13 seconds and the INn in absence of anticoagulation therapy is 0. 8-1. 2
- Warfarin: Dose regulation is done by prothrombin time & INR (Heparin/aPTT/clotting time.
- Antagonist is Vit K (c. f Heparin- Protamine sulphate).

63. True about M/A of doxorubicin:

a) Intercalate b/w DNA strands

b) Inhibition of DNA polymerase

c) Inhibition of RNA polymerase

d) Inhibition of topoisomerase II

e) Inhibition of protein synthesis

Correct Answer - A:D

Ans. A. Intercalate b/w DNA strands; D. Inhibition Of Topoisomerase II

[Ref: KDT 7th/867; Katzung 13th/932'j5; G 6 G 1lth/1358; Pharmacology by Satoskar 24th/ 835)

- Doxorubicin: It acts as a non-specific inhibitor of topoisomerase- II, thus interfering with DNA replication.

64. Anticholinergic drug side-effect includes:

a) Constipation

b) Urinary retention

c) Mydriasis

d) Hypothermia

e) Blurring of vision

Correct Answer - A:B:C:E

Ans: A. Constipation. B. Urinary retention C. Mydriasis E. Blurring of vision

[Ref: KDT 7th/120;G dz G 11th/194; Katzung 13th/ 129; Rang & Dale \th/ 164-65; Pharmacology by Satoskar 24th/301).

- Body temperature is frequently elevated.
- Unfortunately, children, especially infants, are very sensitive to hyperthermic effects of atropine.
- Constipation & urinary retention(precipitation especially in elderly) can occur with atropine
- Difficulty in swallowing, dry mouth, ferer, dry-flushed & hot skin, difficulty in micturition, Mydriasis, photophobia, blurring of near vision, palpitations, dreadful visual hallucination, ataxia, delirium, psychotic behavior, weak & rapid pulse, hypotension, cardiovascular collapse with respiratory depression, convulsion & coma.

65. Which of the following is/are true about benefits of Sustained release formulation of drugs:

a) Decreased incidence and/or intensity of undesired effects

b) Increases potency of the drug

c) Release of drug is less influenced by pH

d) Prolong drug effect

e) Decreased frequency of administration

Correct Answer - A:C:D:E

Ans A. Decreased Incidence and/or Intensity of undesired effects; c. Release Of Drug Is Less Influenced By pH; D. Prolong drug effect; E. Decreased Frequency of administration.

[Ref: KDf 7th/35; G 6'G 11th/5; Pharmacology by Satoskar 24th/7; http://www. pharmatutor. org/articles/review-sustained-release-dosage' forms).

- Sustained release implies slow release of the drug over a time period.
- It may or may not be controlled release

Advantages of sustained release dosage forms:

- Control of drug therapy is achieved.
- Rate and extent of drug absorption can be modified
- Frequency of drug administration is reduced.
- Patient compliance can be improved.
- Drug administration can be made convenient
- Maximizing the availability of drug with minimum dose.
- The safety margin of high potency drug can be increased.

66. True about drug-response curve(DRC):

a) Steepest in middle portion of the DRC

b) Inverted U shaped curve may be for some drug

c) Rectangular hyperbola- when plotted in logarithmic scale

d) Sigmoid shape- when plotted in logarithm is used

e) Enables comparison of potency of drugs

Correct Answer - A:B:C:E

Ans. (A) Steepest in middle portion of the DRC (B) Inverted U shaped curve may be for some drug (C) Rectangular hyperbola- when plotted in logarithmic scale (E) Enables comparison of potency of drugs

Dose-Response Relationship:

- Rectangular hyperbola.
- Sigmoidal curve in dose -response relationship: the steepest portion in the middle-wiki.
- DRC is used to measure- drug potency, drug efficacy & drug safety-slideshare.
- Some drugs cause low-dose stimulation and high-dose inhibition of response.
- These U-shaped relationships for some receptor systems are said to display hormesis.
- Several drug-receptor systems can display this property e.g., prostaglandins, endothelin, and purinergic and serotonergic agonists, among others), which is likely to be at the root of drug toxicity.

67. True about organophosphorus poisoning:

a) Atropine is best for early treatment & maintenance

b) Pralidoxime is important for restoring neuromuscular transmission

c) Phenytoin is the primary drug used for seizure control

d) Mydriasis present

e) Pralidoxime & atropine works synergistically

Correct Answer - A:B:E

Ans. (A) Atropine is best for early treatment & maintenance (B) Pralidoxime is important for restoring neuromuscular transmission (E) Pralidoxime & atropine works synergistically

[Ref Reddy 32nd/495-97;G & G ltth/21};KDT 7th/111: 1 3th/979-80; Pharmacology by Satoskar 24th/ 297]

OrganophosPhorus Poisoning:

- AII case of Anti-ChE poisoning must be promptly given atropine 2 mg i. V repeated every 10 min till dryness & other signs of atropinization appear.
- Continued treatment with maintenance doses may be required for 1-2 weeks
- The use of oximes in organophosphate poisoning is secondary to that of atropine. Moreven the clinical benefit of oximes is highly variable.
- Control of convulsions with judicious use of diazepam.
- Ocular manifestations include marked miosis' ocular pain' conjunctival congestion, diminished vision, ciliary spasm, And brow ache.
- Atropine in sufficient dosage effectively antagonizes the actions at

muscarinic receptor sites, and to a moderate extent at peripheral ganglionic and central sites

68. Which of the following drug(s) act by inhibiting protein synthesis by attaching to 50 S ribosome:

a) Tetracycline

b) Ampicillin

c) Isoniazid

d) Imipramine

e) Ethionamide

Correct Answer - B:C

Ans. (B) Ampicillin (C) Isoniazid

[KDT 7th/734,768; Katzung 13th/789]

- Tetracyclines bind to 30S ribosome & inhibit aminoacyl RNA attachment to the A site
- Erythromycin & clindamycin bind to 50S ribosome & hinder translocation of the elongated peptide chain back from A site to P site. Peptide synthesis may be prematurely Terminated.
- ChloramPhenicol binds to 50S subunit' It interfere with peptide bond formation & transfer of peptide chain from P site
- Aminoglycosides bind to several sites at 30S & 50S subunits- freeze initiation, interfere with polysome formation & cause misreading of mRNA code

69. OCP efficacy decreases with concurrent administration of which of the following drug(s):

a) Phenytoin

b) Ampicillin

c) Isoniazid

d) Imipramine

e) Ethionamide

Correct Answer - A:B

Ans. (A) Phenytoin (B) Ampicillin

[Ref KDT 7th/ 326; Katzung 13th/712; Rang & Dale 9th/ 434: Pharmacology by Satoskar 24th/ 967).

Contraceptive failure may occur with concurrent administration of:

- Enzyme inducer: Phenytoin, phenobarbital, primidone, carbamazepine, rifampin, ritonavir - Metabolism of estrogenic & progestational component is increased.
- Tetracyclines-ampicillin.
- Deconjugation of estrogens secreted in bile fails to occur their enterohepatic circulation is interrupted → blood level fal

70. All are true about tamoxifene except:

a) Used as adjuvant therapy in estrogen receptor positive breast cancer

b) Approved for the primary prophylaxis of breast cancer in high risk woman

c) No effect on uterus

d) Pro-estrogen effect on bone

e) Cause endometrial Ca

Correct Answer - A:C:D:E

Ans. (A) Used as adjuvant therapy in estrogen receptor positive breast cancer (C) No effect on uterus (D) Pro-estrogen effect on bone (E) Cause endometrial Ca

[Ref; KDT 7th/101'02; Katzung 13th/ 106]

- NM is located in neuromuscular junction 6 cause depolarization of muscle end Plate
- NN located on autonomic ganglia, adrenal medulla & CNS
- Most smooth muscles & glands have M2 6 M3 subtypes; M3 Predominates.
- Ach is a major neurotransmitter at autonomic, somatic as well as central sites. Release of Ach from nerve terminal help in synaptic transmission

71. Which of following true regarding acetylcholine receptors:

a) M2 receptor- heart

b) MI receptor- smooth muscle

c) NM receptor is present on neuromuscular junction

d) Synaptic junction-Ach is transmitter

e) NN located on adrenal medulla

Correct Answer - A:C:D:E

Ans. (A) M2 receptor- heart (C) NM receptor is present on neuromuscular junction (D) Synaptic junction-Ach is transmitter (E) NN located on adrenal medulla

[Ref; KDT 7th/101'02; Katzung 13th/ 106]

- NM is located in neuromuscular junction 6 cause depolarization of muscle end Plate
- NN located on autonomic ganglia, adrenal medulla & CNS
- Most smooth muscles & glands have M2 6 M3 subtypes; M3 Predominates.
- Ach is a major neurotransmitter at autonomic, somatic as well as central sites. Release of Ach from nerve terminal help in synaptic transmission

72. Which of the following drug(s) comes in risk category B of FDA teratogenic risk categories for pregnancy:

a) Phenytoin

b) Resperidone

c) Olanazapine

d) Clozapine

e) Arpirazole

Correct Answer - D

Ans. D. Clozapine

[Ref: KDT 7th/90; Katzung 13th/1018; Rang 6 Dale 8th/700; Pharmacology by Satoskar 24th/ 1 122; http://schizophrenia bulletin-oxford journal]

Category A:

- No risk to fetus in human studies
- Levothyroxine
- Potassium
- Supplementation
- MgSO4

Category B

- Animal studies show no risk
- Human studies are lacking
- Penicillins
- Cephalosporins
- Macrolides
- Brimonidine

Category C

- Animal studies show Positive teratogenic risk
- Human studies are not available
- Albuterol
- Zidovudine
- CCB
- Morphine
- Atropine

Category D

- Human and animal studies show positive teratogenic risk
- Can be used in pregnancy because of benefits greater than risk might be acceptable.
- Corticosteroids
- Azathioprine
- Carbamazepine
- Valproate
- Methotrexate
- Lithium

Category X

- Human and animal studies show positive teratogenic risk
- Absolutely contraindicated in pregnancy because of risk greater than benefits.
- Thalidomide
- isotretinoin
- Fluoroquinolones
- Tetracyclines
- Chloramphenicol
- Warfarin
- ACE inhibitors

73. Which of the following is true regarding ropinirole wrt L-dopa :

a) Cognitive symptom improves

b) Lower incidence of hallucination

c) Cause excessive sleepiness

d) More effective in the treatment of patients who have developed on/off phenomena

e) Provide neuroprotective effect

Correct Answer - C:D:E

Ans. C,Cause excessive sleepiness D,More effective in the treatment of patients who have developed on/off phenomena E,Provide neuroprotective effect

[Ref: KDT 7th/430-31; G & G 535-j8;Katzung 13th/478; Rang 6 Date 8th/494-95; Pharmacology by Satoskar 24th/237

- All the dopamine agonists in larger doses can coute tevere neuropsychiatric adverse effects.

Ropinirole & Pramipexole

- Selective D2/D1 receptor agonists
- Better tolerated dt do not show the fluctuations in efficacy associated with levodopa.
- They do, however, cause somnolence 6 sometimes hallucinations (recent evidence suggests that they may predispose to compulsive behaviours, such as excessive gambling, overeating 6 sexual excess, related to the reward functions of dopamine
- A disadvantage of current dopamine agonists is their short plasma half Life(6-8 hr), requiring 3 times daily dosage though slow release

once daily formulations are now available

- Trial have found them to afford symptom relief comparable to levodopa.
- Some trials have noted lower incidence of dyskinesias 6 motor fluctuations among Patients treated with these drugs than dose treated with levodopa
- It is longer acting than levodopa.
- High incidence of hallucination & sleepiness

74. True about methanol poisoning:

a) Gastric decontamination is helpful

b) Formate & formaldehyde are active metabolite

c) Taking with Ethanol cause more toxicity

d) Fomipezole a specific antagonist, is given for treatment

e) Cause high anion gap acidosis

Correct Answer - A:B:D:E

Ans. A,Gastric decontamination is helpfu B,Formate & formaldehyde are active metabolite D,Fomipezole a specific antagonist, is given for treatment E,Cause high anion gap acidosis

[Ref: KDT 7th/ 394-96; Katzung 13th/393; Pharmacology by Satoskar 24th/ 9s-96).

Treatment of Methyl Alcohol

- Fomepizole, an alcohol dehydrogenase inhibitor, is approved for the treatment of ethylene glycol poisoning and methanol poisoning.
- Ethanol used intravenously as treatment for methanol poisoning.
- Methanol concentrations higher than 50 mg/dl are thought to be an absolute indication for hemodialysis and treatment with fomepizole or ethanol, although formate blood levels are a better indication of clinical pathology.
- Hospitalisation, nursing care
- Gastric lavage, activated charcoal
- Treatment of acidosis/hypoglycemia
- Inhibition of methanol metabolism- Giving ethyl alcohol dt fomepizole (a specific inhibitor of alcohol dehydrogenase & drug of choice for methanol poisoning)

- Promote metabolic degradation of formate: folinic acid together with folic acid
- Diuretics, urine alkalinisation
- Hemodialysis in severe case
- Maintenance of nutrition

75. S/E of Bevacizumab includes:

a) Hypertension

b) Hemoptysis

c) Malena

d) Cerebellar stroke

e) Not cause gastrointestinal perforation

Correct Answer - A:B:C:D

Ans. A,Hypertension B,Hemoptysis C,Malena D,Cerebellar stroke

[Ref: KDT 7th/871: Katzung 13th/ 937-38; Rang & Dale 8th/; Pharmacology by Satoskar 24th/840).

S/E of Bevacizumab:

- Hypertension
- Arterial thromboembolism-heart attack 6 stroke
- Vessel injury 6 haemorrhages
- Heart failure
- Proteinuria
- Gastrointestinal perforation
- Healing defect

76. TNF-a Inhibitors are used for :

a) Ulcerative colitis

b) Crohn's disease

c) Rheumatoid arthritis

d) Psoariasis

e) Lichen planus

Correct Answer - A:B:C:D

Ans. A,Ulcerative colitis B,Crohn's disease C,Rheumatoid arthritis D,Psoariasis

[Ref Hanison 19th/1961;Neena Khanna 5th/58, 68;CMDT 2016/641; KDT 7th/883-84).

TNF-alpha Inhibitors: Use

- Etanercept -Rheumatoid arthritis, severe/refractory ankylosing spondylitis, plaque psoriasis, polyarticular idiopathic juvenile arthritis.
- Infliximab- refractory rheumatoid arthritis, ankylosing spondylitis, psoriasis, fistulating Crohn's disease, ulcerative colitis
- Adalimumab- Use as like infliximab
- Certolizumab - Crohn's disease
- Golimumab - ulcerative colitis Psoriasis: Treatment includes TNF blockers like etanercept, infliximab.

77. Antibiotic of choice for Stenotrophomonas maltophilia infection is:

a) Ampicillin

b) Trimethoprim-sulfamethoxazole (TMP-SMX)

c) Penicillin

d) Ciprofloxacin

e) None

Correct Answer - B
Ans: b. Trimethoprim-sulfamethoxazole (TMP-SMX)

78. Which of the following is/are paraphilia:

a) Pedophilia

b) Sodomy

c) Frotteurism

d) Voyeurism

e) Exhibitionism

Correct Answer - A:C:D:E

Ans: A. Pedophilia C.Frotteurism D. Voyeurism E. Exhibitionism

[Ref Synopsis of Psychiatry by Kaplon dr Saddock llth/593-97; Reddy 32nd/ 411; Neeraj Ahuja 7th/124-26; Parikh 7th/ 411-12J

- Paraphilias or perversions are sexual stimuli or acts that are deviations from normal sexual behaviors, but are necessary for some persons to experience arousal and orgasm.
- According to the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5), the term paraphilic disorder is reserved for those cases in which a sexually deviant fantasy or impulse has been expressed behaviorally.
- Individuals with paraphilic interests can experience sexual pleasure, but they are inhibited from responding to stimuli that are normally considered erotic. The paraphiliac person's sexuality is mainly restricted to specific deviant stimuli or acts.
- DSM-5 lists pedophilia, frotteurism, voyeurism, exhibitionism, sexual sadism, sexual masochism, fetishism, and transvestism with explicit diagnostic criteria because of their threat to others and/or because they are **relatively common paraphilias.** There are many other paraphilias that may be diagnosed

79. Which of the following joint is best predictor of age of 16-17 year by X-ray:

a) Knee

b) Elbow

c) Hip

d) Wrist

e) Ankle

Correct Answer - D:E

Ans: (D) Wrist (E) Ankle [Ref Reddy 32nd/78, 77, 74; Parikh 7th/ 61-63]

For estimation of age: Take X-ray

- **6-12 years** Elbow joint, Wrist joint, 6 yr- center for lower end of ulna (A); medial epicondyle of the humerus (A)
- **9 years:** Olecranon (A)
- **9 to 11 years:** Trochela of humerus (A)
- 10th **to 11th year:** Pisiform (A)
- **11th year:** Lateral epicondyle of humerus (A)
- **13 to 16 years:** X-ray of pelvis elbow joint &pelvis (13thyr -separate centers in triradiate cartilage of acetabulum (A)
- 12 **to 14 years:** Lesser trochanter of femur (A)
- **14th year:** Crest of ilium (A), fusion of medial epicondyle of humerus, lateral epicondyle with trochlea
- **15th year: fusion** of triradiate cartilage of acetabulum
- **16-17 year: wrist**
- **Crest of ilium: 18-19.**
- **Ischeal tuberostty,clavicle(inner end):** 21-22(F), 23-24(M)

80. Which of the following is/are feature(s) of human hair:

a) Medullary index: <0.3

b) Cortex is thin

c) Cortex is thick

d) Medulla-narrow

e) Medulla-wider

Correct Answer - A:C:D

Ans: a. Medullary index..., c. Cortex is thick..., d. Medullanar....

[Ref Reddy 32nd/91; Parikh 7th/ 499]

Trait	Human Hair	Animal hair
Character	Fine & thin	Coarse & thick
Cuticle	Cuticular scales are short, broad, thin & irregularly annular	Cuticular scales are very large & have step-like or wavy projections
Cortex	Thick, well -striated & 4 to 10 times as broad as medulla	Thin, rarely more than twice as broad as medulla
Medulla	Varies considerably, usually narrow, discontinuous, fragmented or entirely absent	Continuous & wider
Pigment	Evenly distributed	Mostly present in the medulla

Precipitin	Specific for human	Specific for different animals
Medullary index (Diameter of medulla/ Diameter of shaft)	Below 0.3	Above 0.5

81. Which of the following is true statement(s)about exhumation?

a) Police can order for exhumation

b) Executive magistrate can order for exhumation

c) Postmortem can not be done on exhumated body

d) Cr PC 176(4) is related to enquiry of exhumated body

e) CrPC 174 is related to enquiry of exhumated body

Correct Answer - B:D

Ans: b. Executive magistrate..., d. Cr PC 176 (4) is related...
[Ref Reddy 32nd/ 128-29; Parikh 7th/133-34]

- **I**t is digging out of an already buried body legally from the grave
- There is no time limit for exhumation in India
- Autopsies are performed on exhumed bodies:
  (1) In criminal cases, such as homicide, suspected homicide disguised as suicide or other types of death, suspicious poisoning, death as a result of criminal abortion & criminal negligence;
  (2) In civil cases, such as accidental death claim, insurance, workmen's compensation claim, liability for professional negligence, survivorship & inheritance claims or disputed identity
- Authorisation: The body is exhumated only when, there is a written order from the executive magistrate. The body can he exhumated by any government doctor
- The body is exhumated under the supervision of a medical officer & magistrate in the presence of a police officer
- Whenever practicable, the magistrate should inform the relatives of the deceased & allow them to remain present at the enquiry (176 (4)

Cr. P. C)

82. True about cadaveric spasm:

a) Same mechanism as rigor mortis

b) Mechanism is unknown

c) Also k/a instantaneous rigor

d) Occur only in cold environment

e) Can be seen in some drowning case

Correct Answer - B:C:E

Ans: b. Mechanism..., c. Also 1c/a..., e. Can be seen....

- Cadaveric Spasm (Cataleptic Rigidity or Instantaneous Rigor) is a rare condition. In this, the muscles that were contracted during life become stiff and rigid *immediately after death* without passing into the stage of primary relaxation, and its Mechanism is unknown
- It occurs especially in *cases of sudden death, excitement, fear, severe pain, exhaustion, cerebral haemorrhage, injury to the nervous system, firearm wound of the head, drowning, convulsant poisons (such as strychnine) .*

83. Cause(s) of Opisthotonus is/are:

a) Cocaine

b) Strychnos Nux Vomica seed

c) Strychnine

d) Codeine

e) Curare

Correct Answer - B:C

Ans: B. Strychnos Nux Vomica seed C. Strychnine

- **Strychnine** (alkaloid from seeds of strychnosnux-vomica) cause opisthotonus (Parikh 7th/639-40)
- **"Strychnine :** The convulsions are most marked in antigravity muscles, so that the body typically arches in hyperextension (opisthotonus)" (Reddy 32nd/581)
- **Causes of Opisthotonus:** Arnold-Chiari syndrome, Meningitis, Brain tumor, Gaucher disease, Growth hormone deficiency (occasionally), Glutaricaciduria and organic acidemias (forms of chemical poisoning).

84. Which of the following is NOT rape:

a) Sexual intercourse with wife, of age below 15 year, with consent

b) Sexual intercourse with wife, of age 16 year, with consent

c) Sexual intercourse with a girl below 18 years of age, with consent

d) Sexual intercourse with a girl of 18 year with consent

e) Sexual intercourse with wife who is living separately from him under a decree of separation, or any custom or usage with her consent

Correct Answer - B:D:E

Ans: b. Sexual intercourse with..., d. Sexual intercourse with a girl..., e. Sexual intercourse with wife who is living ..... *[Ref Reddy 32nd/ 392-95; Parikh 7th/389-911*

Rape: The Criminal Law (Amendment) Bill, 2013 (5.375, I.P.C)

- Acc to Gazette Notification of GOI regarding Criminal Law (amendendment) Act, 2013 released on 2 april, 2013, 1t is age 15 year .
- **Exception to S. 375, I.P.C: Sexual intercourse or sexual acts by a man with his own wife, the wife not being under 15 years.**
- There is controversial reference regarding age of wife, either 16 or 15 year in Reddy (old & new ed.) & Parikh.
- *With her consent, when the man knows that he is not her husband and that her consent is given because she believes that he is another man to whom she is or believes herself to be lawfully married.*
- *With her consent when, at the time of giving such consent, by*

reason of unsoundness of mind or intoxication or the administration by him personally or through another of any stupefying or unwholesome Substance, she is unable to understand the nature and consequences of that to which she gives consent.

- *With or without her consent, when she is under eighteen years of age.*
- *When she is unable to communicate consent*

85. In which of the following condition(s), children are prone to fungal & viral infection:

a) Thymic aplasia

b) Agammaglobulinemia

c) Lymphocytopenia

d) Severe combined immune deficiencies (SCID)

e) Chediak-Higashi syndrome

Correct Answer - A:C:D

Ans: (A) Thymic aplasia (C) Lymphocytopenia (D) Severe combined immune deficiencies (SCID)

[Ref Harrison 19th/2104-08; Ananthanarayan 9th/171-76; Jawetz 27th/146-47; Greenwood 16th/148J

- T cell disorders affect both cell-mediated and humoral immunity making the patient susceptible to viral, protozoal and fungal infections. Viral infections such as those by cytomegalovirus and attenuated measles in the vaccine can be fatal in these patients.
- Lymphocytopenia is most often due to AIDS or undernutrition, but it also may be inherited or caused by various infections, drugs, or autoimmune disorders. Patients have recurrent viral, fungal, or parasitic infections.
- Hypogammaglobulinemia leads to recurrent bacterial infections. Viral & fungal infections are controlled by cell-mediated immunity, which is normal in hypogammaglobulinemic individual.

86. Which of the following is type 3 hypersensitivity reaction (immune complex disease):

a) SLE

b) Diabetes Mellitus I

c) Goodpasteur syndrome

d) Multiple sclerosis

e) Bronchial asthma

Correct Answer - A

Ans: a. SLE

[Ref Ananthanarayan 9th/162-67; Robbins 9th/201; lawetz 27th/145-46; Greenwood 16th/144]

- Type 3 Hypersensitivity reaction (Immune complex disease) Ananthanarayan 9th/162, It is two types-arthus reaction & serum sickness.
- the damage is caused by antigen-antibody complexes. These may precipitate in & around small blood vessels causing damage to cells secondarily, or on membranes, interfering with their function .

87. Which of the following infection has incubation period

a) Brucella

b) Gonorrhoea

c) Syphilis

d) HBV

e) Leishmaniasis

Correct Answer - A:B:C

Ans: (A) Bruce...,(B) Gonorrho..., (C) Syphilis

[Ref Harrison 19th/1134, 194e-2, 1005; Ananthanarayan 9th/341 .1]

- **Brucella:** The incubation period is usually about 10-30 days, but may be sometimes be very prolonged" (Ananthanarayan 9th/341)
- **"Brucella:** The incubation period varies from 1 week to several months, and the onset of fever and other symptoms may be abrupt or insidious" (Harrison 19th/194e-2)
- **Syphilis:** Clinical disease sets in after an incubation period of about a month(range 10-90 days)" (Ananthanarayan 9th/372)
- **"Syphilis:** The median incubation period in humans (-21 days) suggests an average inoculum of 500-1000 infectious organisms for naturally acquired disease; the incubation period rarely exceeds 6 weeks.
- Gonococcal infection in men: Acute urethritis is the most common clinical manifestation of gonorrhea in male patients. The usual incubation period after exposure is 2-7 days, although the interval can be longer & some men remain asymptomatic (Harrison 19th/1005)

88. Stain used for Mycobacterium tuberculosis is/are:

a) Ziehl-Neelsen technique of staining

b) Auramine-rhodamine stain

c) Gomori methenamine silver stain

d) Kinyoun stain

e) Gram staining

Correct Answer - A:B:D

Ans: a. Ziehl-Neelsen techni..., b. Auramine-rhodamine sta..., d. Kinyoun stain

[Ref Harrison 19th/1113; Ananthanarayan 9th/346-48; Lippincott Microbiology 3rd/ 21; Jawetz 27th/38; Text Book of Diagnostic microbiology by Connie R. Mohan 3rd/691;Greenwood 16th/15]

- When stained with carbol fuchsin by Ziehl-Neelsen method or by fluorescent dyes(Auramine 0, Rhodamine), mycobacterium tuberculosis reist decolourisation by 20% sulphuric acid & are therefore called acid fast.
- Ziehl-Neelsen method d phenol-auramine procedures are methods of great practical importance in the diagnosis of mycobacterial diseases" .
- The Kinyoun method, or Kinyoun stain, is an acid-fast procedure used to stain any species of the genus Mycobacterium and Nocardia species. It involves the application of a primary stain (carbol fuchsin), a decolorizer (acid-alcohol), and a counter stain (methylene blue)"

89. Food borne diseases are:

a) Japanese encephalitis

b) Hemophilia

c) HBV

d) Botulism

e) Typhoid fever

Correct Answer - D:E

Ans: d. Botuli..., e. Typhoid ...,*[Ref Park 23rd/657]*

- The term" food-borne disease" is defined as: "A disease, usually either infectious or toxic in nature, caused by agents that enter the body through the ingestion of food." With the catering systems, food-borne diseases are on the increase throughout the world.
- Due to toxins produced by certain bacteria LIKE Botulism, Staphylococcus poisonS
- Bacterial diseases:- Typhoid,fever, Paratyphoid fever, salmonellosis, staphylococcal intoxication, C. perfringens, Shigellosis brucellosis etc.

90. Which of the following is NOT lysine positive non-fermentor:

a) Burkholderia pseudomallei

b) Burkhomelia mallei

c) Burkholderia cepacia

d) Stenotrophomonas maltophilia

e) Pseudomonas aeruginosa

Correct Answer - A:B:E

Ans: a. Burkholderia..., b. Burkhomelia..., e. Pseudomonas Aeru .....

- The Burkholderia cepacia complex (BCC) and Stenotrophomonas maltophilia are closely related groups of non fermenting gram-negative bacilli (NFGNBs) having a similar spectrum of infections ranging from superficial to deep-seated and disseminated infections.
- Identification of these lysine decarboxylase-positive NFGNBs lags behind in most Indian laboratories. A simplified identification scheme was devised for these two pathogens that allowed us to isolate them with an increasing frequency at our tertiary care institute.

91. A person is suffering from acquired immunodeficiency disease(AIDS) & visited the zoo. After some days, he is complaining of headache & cough. He has also have some neurological symptoms. On staining of CSF sample, it shows capsulated yeast. Likely infection is:

a) Histoplasma

b) Aspergillus

c) Cryptococcus

d) Blastomycosis

e) Coccidioidomycosis

Correct Answer - C

Ans: C, Cryptococcus

- Like CNS disease, pulmonary cryptococcosis can follow an indolent course, and the majority of cases probably do not come to clinical attention.
- Pulmonary cryptococcosis can be associated with antecedent diseases such as malignancy, diabetes, and tuberculosis.
- **Cryptococcus** Infection can be acquired by inhalation of desiccated yeasts(or basidiospores) from feces of pigeon or other birds
- Direct microscopic examination of India ink-stained wet films of material from lesions reveals capsulated, budding yeast cells; the

capsule are prominent in the India ink preparatio

92. Normal flora of Oral cavity is/are except:

a) Veillonella

b) Anerobic micrococci

c) Geotrichum

d) Gemella

e) Yersinia

Correct Answer - A:B:C:D

Ans: a. Veillone..., b. Anerobic microc..., c. Geotrich..., d. Gemell.

- More than 700 bacterial species or phylotypes, of which over 50% have not been cultivated, have been detected in the oral cavity.
- The mouth contains a plethora of organisms- pigmented & non-pigmented micrococci; some of which are aerobic, gram positive, aerobic, spore bearing bacilli, coliforms, proteus & lactobacilli
- The gum pocket b/w the teeths, & the crypts of the nostrils have a wide spectrum of anaerobic flora- anerobic micro-cocci, microaerophilic & anaerobic streptococci, vibrios, fusiform bacilli, corynebactrium species, actinomyces, leptothrix, mycoplasma, Neisseria eb• bacteriodes are all found in varying extents. Among fungi, candida er geotrichum have been reported.

93. Gold standard diagnostic test for babeiosis is:

a) Peripheral blood smear examination

b) Blood Culture

c) PCR

d) ELISA

e) Indirect fluorescent antibody (IFA) test

Correct Answer - A

Ans: a. Peripheral blood smear ...,

[Ref Harrison 19th/1385-86; Paniker Parasitology 7th/85;Chatterjee Parasitology 13th/137; Lippincott Microbiology 3rd/225; Jawetz 27th/708; Greenwood 16th/599]

- Microscopic examination of stained blood smear is gold standard test for babesiosis"
- A specific diagnosis usually is established by microscopic examination of Giemsa-stained thin blood smears. Babesia trophozoites appear round, pear-shaped, or ameboid.
- The ring form is most common and lacks the central brownish deposit (hemozoin) typical of Plasmodium falciparum trophozoites. Other distinguishing features are the absence of schizonts and gametocytes and the occasional presence of tetrads ("Maltese cross").
- If parasites cannot be identified by microscopy and the disease is still suspected, amplification of the babesial 18S rRNA gene by polymerase chain reaction (PCR) is recommended. Quantitative PCR has greatly lowered the threshold for detection of B. microti

DNA

94. True about listeria monocytogens infection:

a) Common in pregnant women

b) Common in elderly

c) Common in children

d) Common in newborns

e) Ampicillin is drug of choice

Correct Answer - A:B:D:E

Ans: a. Common in pregnant..., b. Common in elderly...,d. Common in newborns..., e. Ampicillin.
[Ref Harrison 19th/982-84; Ananthanarayan 9th/395-96; Lippincott Microbiology 3rd/ 98; Jawetz 27th/ 197-98; Greenwood 16th/195-96]

- Listeria infections are most common in pregnant women, fetuses and newborns, and in immunocompromised individuals, such as older adults and patients receiving corticosteroids" (Lippincott Microbiology 3rd/ 98).
- The disease affects pregnant women, newborns, adults with weakened immune systems, and the elderly,
- Listeria monocytogenes is a food-borne pathogen that can cause serious infections.
- Meningitis in older adults (especially with parenchymal brain involvement or subcortical brain abscess) should trigger consideration of L. monocytogenes infection.

95. True about Japanese encephalitis:

a) Most severe epidemic spread occured in 2006

b) Main vector in India is culex tritaeniorhynchus

c) Spread by aedes mosquito

d) India still not able to develop vaccine indigenously

e) Pigs are amplifier host

Correct Answer - B:E

Ans: (B) Main vector in India is culex tritaeniorhynchus (E) Pigs are amplifier host

[Ref Park 23rd/284-87;Harrison 19th/1315; Ananthanarayan 9th/52022, 519]

- During 2006, there was a large outbreak of chikungunya in India, with 1. 39 million officially reported cases spread over 16 states; attack rates were estimated at 45% in some areas**"**
- The virus is particularly common in areas where irrigated rice fields attract the natural avian vertebrate hosts and provide abundant breeding sites for mosquitoes such as Culex tritaeniorhynchus, which transmit the virus to humans.
- Additional amplification by pigs, which suffer abortion, and horses, which develop encephalitis, may be significant as well. Vaccination of these additional amplifying hosts may reduce the transmission of the virus.

96. Not AIDS defining cancer:

a) Anal carcioma

b) Hodgkin's lymphoma

c) Cervial cancer

d) Non -Hodgkins lymphoma

e) Kaposi carcinoma

Correct Answer - A:B

Ans: (A) Anal carcioma (B) Hodgkin's lymphoma

[Ref Harrison 19th/1268; Ananthanarayan 9th/576-77; Lippincott Microbiology 3rd/ 302]

- **T**he neoplastic diseases considered to be AIDS defining conditions are Kaposi's sarcoma, non-Hodgkin's lymphoma, and invasive cervical carcinoma.
- In addition, there is also an increase in the incidence of a variety of non-AIDS-defining malignancies including Hodgkin's disease; multiple myelotna; leukemia; melanotna;and cervical, brain, testicular, oral, lung, gastric, liver, renal, and anal cancers.

97. True about Plasmodium falciparum:

a) Increased size of infected RBC

b) Crescentric shaped gametocyte

c) Delicate ring present

d) Small & multiple rings common

e) Erythrocyte preference- old cells

Correct Answer - B:C:D

Ans: (B) Crescentric shaped gametocyte (C) Delicate ring present (D) Small & multiple rings common

[Ref Harrison 19th/1369; Parasitology by Chatterjee 13th/103; Parasitolgy by Paniker 7th/75]

- Ring stage- delicate, small, double chromatin, multiple rings common, Accole forms found
- Macrogametocyte- Crescentric, deep blue cytoplasm, large diffuse nucleus
- The mature gametocytes are round in shape, except in P, falciparum, in which they are crescent-shaped
- Schizont: Fills two-third of red blood cell which is not enlarged- Chatterjee 13th/103
- Infected erythrocyte- Normal size, Maurer's cleft, sometimes basophilic stippling
- Erythrocyte preference- young erythrocyte, but can infect all stages

98. Which of the following statement is/are true about Giardia:

a) Cause bloody diarrhorea

b) Invasive to GI mucosa

c) More common in hypogammaglobulinemic person

d) Less common in achlorohydria

e) Metronidazole is effective in treatment

Correct Answer - C:E

Ans: (C) More common in hypogammaglobulinemic person (E) Metronidazole is effective in treatment *[Ref Parasitology by Chatterjee 13th/47-48;Parasitolgy by Paniker 7th/32-33;Harrison 19th/1406]*

- Metronidazole, trimidazole, furazoilidone have been found to be effective for giardiasis
- G. lamblia is typically seen within the crypts of duodenal & jejunal mucosa. It does not invade the tissue, but remains tightly adhered to intestinal epithelium by means of the sucking disc
- Te person having agammaglobulinemia, malnourished persons are more susceptible to giardiasis

99. In which organism can be isolated:

a) CSF specimen of tetanus infection

b) CSF specimen of listeria monocytogenes

c) From valves in rheumatic valvulitis

d) From myocardium in diphtheric myocarditis

e) Meningococcal rash

Correct Answer - B:E

Ans: (B) CSF specimen of listeria monocytogenes (E) Meningococcal rash

- **L.** monocytogenes : The diagnosis is typically made by culture of blood, cerebrospinal fluid (CSF), or amniotic fluid. L. monocytogenes may be confused with "diphtheroids" or pneumococci in gram-stained CSF or may be gram-variable and confused with Haemophilus spp.
- Petechial lesion: Meningococci may sometimes be demonstrated in petechial lesions by microscopy & culture.

100. True about cytomegalovirus -

a) Characteristic owl eye appearance

b) Type 5 Human herpesvirus type

c) Lymphocyte enlargement

d) Cause congenital infection

e) Lymphoproliferative

Correct Answer - A:B:D

Ans: a. Characteristic..., b. Type 5 Human..., d. Cause congenital ....

[Ref Harrison 19th/1190-91; Ananthanarayan 9th/473-74; Jawetz 27th/470-74]

- It is cytomegalic (not lymphoproliferative, which occur in HHV4, 6 & 7)
- Characterized by enlargement of infected cells
- Congenital infection- Intrauterine infection leads to fetal death or cytomegalic inclusion disease of newborn which is often fatal

101. Which of the following is/are true about Mycoplasma pneumonia infection except:

a) Causes many extrapulmonary manifestations

b) Cold agglutinin titer is not increased

c) Cause atypical pneumonia

d) Paucity of respiratory signs on physical examination

e) Cough is typically productive

Correct Answer - B:E

Ans: b. Cold agglutinin..., e. Cough is typically

- Cold hemagglutinins for group 0 human erythrocyte appear in about 50% of untreated patients, in rising titer, with the maximum reached in the third or fourth week after onset.
- A titer of 1:64 or more supports the diagnosis of M. pneumoniae infection.
- The cough is typically nonproductive, but some patients produce sputum. Headache, malaise, chills, and fever are noted in the majority of patients.

102. True about enteroviruses:

a) In 1999, wild polio virus 2 was eradicated from world

b) Vaccine associated paralytic poliomyelitis(VAPP) most frequently caused by serotype 1 vaccine

c) Bivalent OPV contains type 1 & type 3 strain

d) Primary course of OPV consists of only 1 dose

e) Coxasackie A7 & enterovirus type 71 causes aseptic meningitis

Correct Answer - A:C:D:E

Ans: (A) In 1999, wild polio virus 2 was eradicated from world (C) Bivalent OPV contains type 1 & type 3 strain (D) Primary course of OPV consists of only 1 dose (E) Coxasackie A7 & enterovirus type 71 causes aseptic meningitis

[Ref Park 23rd/ 202-09; Harrison 19th/1289-91; Ananthanarayan 9th/485]

- Of the 3 strains of wild poliovirus, wild poliovirus type 2 was eradicated in 1999 & case numbers of type 3 are down to the lowest-ever levels with the last case reported in Nov 2012 from Nigeria.
- The WHO programme on immunization(EPI) & the national immunization programme in India recommended a primary course of 3 doses of OPV at one-month intervals, commencing the first dose when infant is 6 weeks old.
- Poliovirus type 1 is responsible for most epidemics of paralytic poliomyelitis. Type 3 also causes epidemics to a lesser extent. . Type 2 usually causes inapparent infections in western countries but in India paralysis due to type 2 is quite common"

GROUP	SEROTYPE
Poliovirus	1-3
Coxsackie virus A	1-22 AND 24
Coxsackie virus **B** s	1-6
Echovirus	1-9, 11-27, 29-34
Numbered echovirus	(EV) 68-78

103. True about chickengunya fever:

a) Caused by single stranded RNA arbovirus

b) Excruiting arthralgia in peripheral joints

c) Antiviral therapy is very effective

d) Absolute lymphocytosis is present

e) Vector is aedes mosquitoes

Correct Answer - A:B:E

Ans: (A) Caused by single stranded RNA arbovirus (B) Excruiting arthralgia in peripheral joints (E) Vector is aedes mosquitoes.[Ref Harrison 19th/13j3; park 23ril/289; Ananthanarayan gth/440,519; Jawetz 27th/ 548.

- Chickengunya: Blood counts may be normal, or patients may have leukopenia with relative lymphocytosis.
- The vector is Aedes aegypti, It is caused by arbovirus (Family-Togaviridae, Genus- Al?phavirus) (Ananthanarayan 9th/517)
- The Chikungunya virus by single stranded RNA virus?
- Chikungunya is a local word meaning doubling up owing to excruciating joint pains
- There is no specific treatment & usually self limiting. Analgesics & antipyretics along with fluid supplementation are recommended to manage infection & relieve fever, joint pains & swelling. Drugs like aspirin & steroids should be avoided

104. True about Zika virus:

a) Sexually transmitted

b) 50% infected person develop symptoms

c) Effective therapy available

d) Transmitted by Aedes vector

e) Transmission in utero

Correct Answer - A:D:E

Ans: a. Sexually transmitted d. Transmitted by Aedes vector e. Transmission in utero[Ref Harrison 19th/1314;

- It is spread mostly by the bite of an infected Aedes species mosquitoes (A. aegypti and A. albopictus). These mosquitoes are aggressive daytime biters.
- It can be passed from a pregnant woman to her fetus. Infection during pregnancy can cause certain birth defects.
- It can be passed through sex from a person who has Zika to his or her partners. It can be passed through sex, even if the infected person does not have symptoms at the time.
- The majority of people infected with Zika virus do not display any symptoms

105. Biosafety level 4 infection includes:

a) Hantavirus

b) Nile virus

c) Ebola virus

d) Crimean-Congo HF

e) Lyssa Fever

Correct Answer - C:D:E

Ans: c. Ebola virus d. Crimean-Congo HF e. Lyssa Fever [Ref Harrison 19th/1323, 1328; consteril. corn/biosafety-levels; thecerebrallounge. wordpress. corn]

- Filoviruses (includes three genera: Cueva virus, Ebola virus, and Marburg virus) are categorized as World Health Organization (WHO) Risk Group 4 Pathogens.
- Biosafety Level 4- Hemorrhagic fevers, Marburg virus, Ebola virus, Lassa virus, Smallpox

106. Serological test is/are useful in diagnosis of which of the following disease:

a) Typhoid

b) Q fever

c) Acanthamoeba infection

d) Scrub typhus

e) Brucellosis

Correct Answer - A:B:D

Ans: a. Typhoid b. Q fever d. Scrub typhus

- The diagnosis of Q fever is based mainly on serological tests, such as microagglutination, complement fixation, immunofluorescence & ELISA.
- Serological tests: There are not used for early diagnosis of rickettsia! diseases(including Q fever, scrub typhus), from a treatment perspective, but to confirm the diagnosis for epidemiological investigations.
- Scrub typhus: Serological assay (indirect fluorescent antibody, indirect immunoperoxidae & enzyme immunoassays), are mainstays of laboratory diagnosis.
- Tube agglutination is routinely used for serological diagnosis of typhoid, brucellosis & typhus fever.

107. All are true about gas gangrene except:

a) Type 1 gangrene is fournier's gangrene

b) Devitalized tissue predispose to gas gangrene

c) High 02 tension in tissue is important precondition

d) a -toxin is main cause of the toxaemia associated with gas gangrene

e) Mainly caused by C. perfringens

Correct Answer - E

Ans: E. Mainly caused by C. perfringens[Ref Harrison 19th/990-95; Ananthanarayan 9th/257-59; Jawetz 27th/186-87;Greenwood 16th /231-35]

- C. perfringens in association with mixed aerobic and anaerobic microbes can cause aggressive life-threatening type I necrotizing fasciitis or Fournier's gangrene**.**
- Predisposing host factors include debility, old age & diabetes
- a -toxin is generally considered to be the main cause of the toxaemia associated with gas gangrene
- "a-toxin: This is the most important toxin biologically & is responsible for profound toxaemia of gas gangrene"

108. Which are transmitted by Dog:

a) Echinococcus granulosus

b) Toxocara Canis

c) Echinococcus multiocularis

d) Toxoplasma Gondii

e) None

Correct Answer - A:C

Ans: A. Echinococcus granulosus C. Echinococcus multiocularis" [Ref Park 23rd/ 3}4;Hanison 1 9th/ 1 432, 1 67 e- 1 : Chatterjee Parasitology 1 3th/ 1 59; CMDT 20 16/ 12801.

- **Alveolar echinococcosis (AE)** is caused by infection with the larval stage of Echinococcus multilocularis. The adult tapeworm is normally found in foxes, coyotes, and dogs. Infection with the larval stages is transmitted to people through ingestion of food or water contaminated with tapeworm eggs.
- Toxocara canis: Human infection is by ingestion of eggs, which are shed in feces of dog.
- Toxoplasma gondii: Man acquires infection by ingestion of contaminated food and water containing sporulated oocyst (from cat) or by ingestion of undercooked meat containing tissue cysts"

109. Follow up is not required in which of the following study:

a) Prospective study

b) Retrospective study

c) Cross-sectional study

d) Longitudinal study

e) Cohort study

Correct Answer - B:C

Ans: b. Retrospective study, c. Cross-sectional study. ***[Ref Park 23rd/ 62, 69; Community***

- Cohort (Known by a variety of names- prospective study, longitudinal study, incidence study & forward looking study) is follow up study with individual as unit of study (Park 23rd/ 62, 75) Case control studies, often called retrospective studies:
- No attrition problems, because case control studies do not require follow-up of individual into the future .
- Cross-sectional studies (Also k/a prevalence study) is single examination (so no follow up) of a cross-section of population at one point in time- the results of which can be projected on the whole population .
- Longitudinal studies: Observations are repeated in the same population over a prolonged period of time by means of follow-up examinations .

110. Special protection includes:

a) Personalitydevelopment

b) Immunization against specific disease

c) Specific nutritional diet

d) Protection from occupational hazard

e) Environmental modification

Correct Answer - B:C:D

Ans: b. Immunization against..., c. Specific nutritional diet..., d. Protection from occupational

Specific Protection

- Immunization
- Use of specific nutrients
- Chemoprophylaxis
- Protection against occupational hazards
- Protection against accident
- Protection from carcinogens
- Avoidance of allergens
- The control of specific hazards in the general environment e.g., air pollution, noise control
- Control of consumer product quality & safety of foods, drugs, cosmetics etc

111. True about Civil registration system in India:

a) Dual record system

b) Deficient

c) Head of institution or officer-in charge is responsible for registration

d) Birth & Death both are registered

e) Cause of death is recorded

Correct Answer - B:C:D:E

Ans: b. Deficie..., c. Head of institution..., d. Birth & Death both..., e. Cause of death

- The registration system in India tended to be very unreliable, the data being grossly deficient in regards to accuracy, timeliness, completeness & coverage. This is because of illiteracy, ignorance, lack of concern, & motivation
- The central births & Death Registration Act, 1969 fixes the responsibility for reporting births & deaths. While the public (e.g, parents, relatives) are to report events occurring in their households, the heads of hospital, nursing homes, hotels, jails or dharmashalas are to report events occurring in such institutions to be concerning registrar
- The time limit for registering the events of birth & that of deaths is 21 days uniformly all over India. In case of default a late fee can be imposed.

112. True about silicosis all except:

a) Caused by exposure of silica oxide

b) Severe exposure- whole lung lavage may helpful in alleviat_ing symptoms

c) Fibrosis of upper lung

d) Fibrotic change can be reversed after stopping exposure

e) More risk ofTB & lung cancer.

Correct Answer - D

Ans: d -Fibrotic change can be reversed after stopping exposure

- Silicosis is progressive & what is more important is that *silicotics are prone to tuberculosis*
- There is *no effective treatment for silicosis.* Fibrotic changes that have already taken place cannot be reversed
- Nodular fibrosis, more frequent in apex & posterior border *(upper part of lung) (c.f in asbestosis fibrosis in lower half of lung)*
- Silicotics are more prone to develop pulmonary tuberculosis (but in recent year there is doubt whether silicotics really develop T.B.)
- For acute silicosis, *bronchoalveolar lavage* may alleviate symptoms, but does not decrease overall mortality.

113. Which of the following is/are true about use of Bar diagram:

a) Comparison of 2 categorial data which are not-additive

b) Comparison of 2 categorial data which are proportional percentage contribution of categories

c) Pie chart is used for comparison of 2 categorial data which are proportional percentage contribution of categories

d) Comparison of magnitude of different frequencies in discrete data

e) Comparison of continuous data

Correct Answer - A:C:D

Ans: a. Comparison..., *c. Pie chart is...,* d. Comparison of magnitude

Bar Diagram

- Length of bar represents frequency of a character
- Popular er easy method
- Used for comparison of magnitude of different frequencies in discrete data
- Spacing b/w any two bars should be nearly equal to half of the width of the bar
- 3 Type- simple, proportionate & multiple.

Categories on x-axis	**Quantity to be represented on y-axis***	**Appropriate diagram**
Continuous	Additive (frequency or percentage),	Pie if proportional contribution of the categories is to be represented, otherwise

		histogram
Discrete or categorical	Addictive (frequency or percentage), (number, rate or ratio)	Line for depiction of trend, otherwise bar Pie if proportional percentage contribution of the categories is to be represented, otherwise bar bar

114. Benefit of vertical health programme includes:

a) More focus on efficiencY

b) More rapid results

c) Dedicated worker always available

d) Many programs can run at one time

e) Effective way of maximizing the impact of the available resources

Correct Answer - A:B:C:E

Ans: a. More focus..., b. More rapid..., c. Dedicated worker..., e. Effective way of.

- Vertical programmes are "so called because they are *directed, supervised, and executed, either wholly or to a great extent, by a specialized service using dedicated health workers"*
- In contrast, an integrated programme is "the process of bringing together common functions within and between organizations to solve common problems, developing a commitment to shared vision and goals and using common technologies and resources to achieve these goals"
- Vertical programmes (also known as stand-alone, categorical or free-standing programmes or the vertical approach) refer to instances where "the solution of a given health problem [is addressed] through the application of specific measures *through single-purpose machinery"*

115. True about Reinke's oedema:

a) Usually unilateral

b) Common in smoker

c) Corticosteroid is mainstay of treatment

d) Involve whole of membranous part of the vocal cords

e) Patient has low pitch voice

Correct Answer - B:D:E

Answer- B,Common in smoker D,Involve whole of membranous part of the vocal cords E,Patient has low pitch voice

- It is bilateral symmetrical swelling of the whole of membranous part of the vocal cords.
- This is due to oedema of the subepithelial space (Reinket space) ofthe vocal cords.

Etiology-

- Heavy smoking,
- Chronic sinusitis &
- Laryngopharyngeal reflex

C/F-

- Patient uses false cords for voice production & this gives him a low-pitched & rough voice.

Treatment-

- Decortication of the vocal cords i.e., removal of strip of epithelium, is done first on one side & 3-4 weeks alter on the other.

116. Feature(s) of Scheibe's syndrome is/are:

a) Semicircular canal fistula

b) Abnormality in bony labyrinth

c) Dysplasia of cochlea

d) Middle ear anaomaly

e) All

Correct Answer - C

Answer- C. Dysplasia of cochlea

- It is most common inner ear anomaly.
- Dysplasia is seen in the cochlea & saccule; hence also called cochleosaccular dysplasia.
- It is inherited as an autosomal recessive nonsyndromic trait.

117. True about nasopharyngeal carcinoma:

a) Level 4 cervical lymph node not involved

b) Radiotherapy is treatment of choice

c) Also c/a Guangdong tumour

d) May associated with U/L otitis media

e) Associated with EBV

Correct Answer - A:B:C:D:E

Answer- A,Level 4 cervical lymph node not involved B,Radiotherapy is treatment of choice C,Also c/a Guangdong tumour D,May associated with U/L otitis media E,Associated with EBV

- It is mostly seen in fifth to seventh decades.
- Males are three times more prone than female.
- Epstein-Barr virus is closely associated with nasopharyngeal carcinoma.
- Due to obstruction of Eustachian tube, there is conductive hearing loss, serous or suppurative otitis media.
- Radiotherapy: It is treatment of choice for nasopharyngeal carcinoma.

118. True about tubercular otitis media are all except?

a) Spreads through eustachian tube

b) Causes painless ear discharge

c) May cause multiple perforations

d) Usually affects both ears

e) None

Correct Answer - D

Answer- D. Usually affects both ears

- Tuberculosis of middle ear is a comparatively rare entity usually seen in association with or secondary to pulmonary tuberculosis, infection reaches the middle ear through eustachian tube.

Clinical features

- Generally, tuberculosis of middle ear is unilateral.
- It is characterized by painless otorrhoea which fails to respond to the usual antimicrobial treatment. There is painless watery otorrhea.
- Single or multiple perforation of tympanic membrane.

119. Evidence based therapy of Bell's palsy include(s):

a) Facial nerve massage

b) Facial nerve stimulation

c) Steroid

d) Acyclovir

e) All

Correct Answer - C

Answer- C. Steroid

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.

120. A person has vertigo without CNS involvement. Causes is/ are:

a) Perilymph fistula

b) Otolithiasis

c) Vestibular neuritis

d) Meniere's disease

e) Multiple sclerosis

Correct Answer - A:B:C:D

Answer- A,Perilymph fistula B,Otolithiasis C,Vestibular neuritis D,Meniere's disease

Peripheral (Lesions of end organs vestibular nerve)

- Meniere's disease
- Benign paroxysmal positional
- vertigo
- Vestibular neronitis
- Labyrinthitis
- Vestibulotoxic drugs
- Head trauma
- Perilymph fistula
- Syphilis
- Acoustic neuroma

121. Cause(s) of in Mydriasis:

a) Organophosphorus poisoning

b) Homer syndrome

c) Oculomotor nerve palsy

d) Parasympathetic stimulation

e) All

Correct Answer - C

Answer- C. Oculomotor nerve palsy

- Carbolic acid, Chloral hydrate, Organophosphorus, Morphine (opiate) and 'New Horn' i.e. neurosyphilis/tabes dorsalis (spinal miosis or small, irregular Argyll Robertson pupil) and Horner's syndrome, Oculomotor nerve palsy.
- Atropine and cocaine cause mydriasis.

122. True about primary open angle glaucoma:

a) Also k/a Chronic simple glaucoma

b) Hypermeteropeas are more predisposed

c) Polygenic inheritance

d) Laser iridotomy is used for treatment

e) Fundus examination reveals large cup

Correct Answer - A:C:E

Answer- (A) Also k/a Chronic simple glaucoma (C) Polygenic inheritance (E) Fundus examination reveals large cup

- Also known as chronic simple glaucoma of adult onset and is typically characterized by slowly progressive raised intraocular pressure.
- Associated with characteristic optic disc cupping and specific visual field defects.

Pathogenesis-

- Heredity: POAG has a polygenic inheritance.
- Age- elderly between 5th and 7th decades.
- Myopes are more predisposed than the normals.
- Diabetics have a higher prevalence of POAG.
- POAG is more in hyPertensives.
- C/F
- patients usually complain of frequent changes in presbyopic glasses.
- Patients develop delayed dark adaptation.
- Fundus examination show large cup. (0.6 or more)
- Laser iridotomy is used for treatment of primary angle closure

glaucoma.

123. Cloudy cornea is/are seen:

a) Klinefelter syndrome

b) Turner syndrome

c) Megalocornea

d) Mucopolysaccharidosis

e) All

Correct Answer - D
Answer- D. Mucopolysaccharidosis
S-Sclerocornea

- T-Trauma
- U-Ulcer
- M- Mucopolysaccharidosis
- P-Peter anomaly
- ED- Congenital hereditary endothelial dystrophy

124. Ectopia lentis is associated with all except -

a) Homocystinuria

b) Weil - Marchesani syndrome

c) Marfan syndrome

d) Cockayne syndrome

e) Osteogenesis imperfecta

Correct Answer - D:E

Answer- (D) Cockayne syndrome (E) Osteogenesis imperfecta

- More common:
- Marfan syndrome
- Homocystinuria
- Weil-Marchesani syndrome
- Sulfite oxidase deficiency
- Hyperlysinemia

125. Not feature of Fuch's heterochromiciridocyclitis:

a) White nodules on the anterior surface of the iris

b) Koppeprecipitates present at back of cornea

c) Granulomatous type of low grade anterior uveitis

d) Topical corticosteroids are used for treatment

e) All

Correct Answer - C

Answer- C. Granulomatous type of low grade anterior uveitis

- Fuchs' heterochromiciridocyclitis is a chronic nongranulornatous type of low grade anterior uveitis.

The disease is characterised by:

- Heterochromia of iris,
- Diffuse stromal iris atrophy,
- Fine KPs at back of cornea,
- Faint aqueous flare,
- Absence of posterior synechiae
- Topical corticosteroids are all that is required.

126. True about iris:

a) Eye colour is due to relative number of melanocytes

b) Stroma is responsible for pigmentation

c) Sphincter pupillae is supplied by parasympathetic fibres

d) Dilator pupillae is supplied by sympathetic fibres

e) Stroma is covered on its anterior surface by two layers of pigmented epithelium

Correct Answer - A:B:C:E

Answer- A,Eye colour is due to relative number of melanocytes B,Stroma is responsible for pigmentation C,Sphincter pupillae is supplied by parasympathetic fibres E,Stroma is covered on its anterior surface by two layers of pigmented epithelium

- Eye color is determined by the relative number of melanocyte in the stroma and of course the density of melanin granules produced.
- Iris is composed of a stroma cantaining branched connective tissue cells, usually pigmented but largely unpigmented in blue irides.
- The stroma is covered on its posterior surface by two layers of pigmented epithelium.
- The iris is richly supplied by sensory nerve fibres derived from the trigeminal nerve.
- The sphincter pupillae is supplied by parasympathetic autonomous secretomotor nerve fibres derived from the oculomotor nerve, while the motor fibres of the dilator muscle arc defived from the cervical sympathetic chain.

127. Which of the following is/are not the feature(s) of corneal ulcer due to herpes virus:

a) Rose Bengal staining of margin of ulcer

b) Decreased corneal sensitivity

c) Fluorescein staining of floor of the ulcer

d) Ring infiltration

e) All

Correct Answer - A:B:C

Answer- A,Rose Bengal staining of margin of ulcer B,Decreased corneal sensitivity C,Fluorescein staining of floor of the ulcer

- "Dendritic ulcer base stains with fluorescein & the margins with rose Bengal.
- Fluorescein installation illuminated by blue light shows up corneal ulceration at an early stage.
- The cornea is relatively insensitive. In severe forms, dendritic ulcers develop.

128. All are true about chronic fatigue syndrome except:

a) For diagnosis, duration of fatigue should be atleast 6 month

b) Impaired memory and concentration may present

c) Fatigue relieved by rest

d) Physical examination shows no abnormalities

e) Cognitive behavioral therapy is useful for treatment

Correct Answer - C

Answer- C. Fatigue relieved by rest

- Fatigue lasts for at least 6 months
- Fatigue is of new or definite onset.
- Fatigue is not the result of an organic disease or ofcontinuing exertion
- Fatigue is not alleviated by rest.
- Fatigue symptoms are soar throat, tender cervical or axilary lymph nodes, muscle pain, pain in several joints, headaches, malaise

129. All are true about primary aldosteronism except:

a) One of the most common cause of secondary hypertension

b) Hyperkalemia

c) Sodium retention

d) Ratio of plasma aldosterone to plasma renin activity (PA/ PRA) is a useful screening test

e) Tetany may occur

Correct Answer - B

Answer- B. Hyperkalemia

- Primary hyperaldosteronism is one of the most common cause of secondary hypertension.
- Excessive levels of aldosterone cause sodium retention and potassium excretion, with resultant hypertension and hypokalemia.
- Hypokalemia can cause weakness, parethesias, visual disturbances and tetany.
- The diagnosis of primary hyperaldosteronism is confirmed by the elvated level of aldostetone and depressed levels of renin in the circulation (low PRA).
- The ratio of plasma aldosterone to plasma renin activity (PA/PRA) is a useful screening test.

130. All are true about acute pericarditis except:

a) Pain radiate to left shoulder & arm

b) Widespread elevation of the ST segments, often with upward concavity & then return to baseline

c) Pain relieved by lying supine & intensified by sitting up and leaning forward

d) Corticosteroid relieves symptoms

e) High-pitched scratching or crunching noise may heard in auscultation

Correct Answer - C

Answer- C. Pain relieved by lying supine & intensified by sitting up and leaning forward

- The characteristic pain of pericarditis is retrosternal, radiates to the shoulders and neck (retrosternal, and left precoridal).
- Characteristically, pericaridial pain may be relieved by sitting up and leaning forward and is intensified by lying supine.
- A pericardial friction rub is a high-pitched superficial scratching or crunching noise, produced by movement of the inflamed pericardium.
- There are four stages of ECG changes in the evolution of acute pericarditis.
- In stage 1, there is widespread elevation of the ST segments, often with upward concavity, involving two or three standard limb leads and V2 to V6, with reciprocal depressions only in aVR and sometimes V1, as well as depression of the PR segment Usually

there are no significant changes in QRS complexes.

- In stage 2, after several days, the ST segments return to normal, and only then, or even later, do the T waves become inverted (stage 3).
- Ultimately, weeks or months after the onset of acute pericarditis, the ECG returns to normal in stage 4.
- The pain is usually relieved by aspirin.

131. Malignancy associated with hypercalcemia:

a) Breast cancer

b) Small cell lung cancer

c) Non-small lung cancer

d) Prostate cancer

e) Multiple myeloma

Correct Answer - A:C:D:E

Answer- A,Breast cancer C,Non-small lung cancer D,Prostate cancer E,Multiple myeloma

- Lung carcinoma, breast carcinoma, and multlple myeloma account for more than 50% of all cases of malignancy-associated hypercalcemia.
- Gastrointestinal tumars and prostate carcinoma are less common causes of hypercalcemia.

132. Which of the following markers suggest likely primary cancer in carcinoma of unknown primary(CUP):

a) CK7 is found in tumors of the lung, ovary, endometrium & breast

b) CK20+/CDX-2 +/CK7–, suggestive of lower gastrointestinal cancer

c) Calretin & WT-1 for melanoma

d) Chromogranin, synaptophysin & CD56 are marker of neuroendocrine prrimary

e) None

Correct Answer - A:B:D

Answer- A,CK7 is found in tumors of the lung, ovary, endometrium & breast B,CK20+/CDX-2 +/CK7–, suggestive of lower gastrointestinal cancer D,Chromogranin, synaptophysin & CD56 are marker of neuroendocrine prrimary

- CK7, CK20, thrombomodulin- Urothelial
- CK7, CK20, CDX-2, carcinoembryonic antigen (CEA)- intestinal
- Calretinin, WT-1- Mesothelioma
- Chromogranin, synaptophysin, CD56- Neuroendocrine

133. Which is true about thrombolysis in acute ischemic stroke:

a) Most effective if used within 3 hour

b) Contraindicated in h/o prior intracranial haemorrahage

c) Use of heparin within 48 hr is not a contraindication

d) Contraindicated if platelets <100, 000per microliter

e) All

Correct Answer - A:B:D
Answer- A,Most effective if used within 3 hour B,Contraindicated in h/o prior intracranial haemorrahage D,Contraindicated if platelets <100, 000per microliter

- Intravenous thrombolysis with recombinant tissue plasminogen activator (rt-PA) increases the risk of haemorrhagic transformation of the cerebral infarct with potentially fatal results. However, if it is given within 4.5 hours of symptom onset to catefully selected patients, the haemorrhagic risk is offset by an improvement in overall outcome.

134. High anion gap metabolic acidosis is/are present in:

a) Asthma

b) COPD with CO2 retention

c) Poorly controlled diabetes

d) Renal tubular acidosis

e) All

Correct Answer - C
Answer- C. Poorly controlled diabetes

- Ketoacidosis
- Diabetic
- Alcoholic
- Starvation

135. True about McCune-Albright syndrome:

a) Occur in children & during puberty

b) Precocious puberty in female

c) Involve long bone of limb

d) Associated with hypothyroidism

e) All

Correct Answer - A:B:C

Answer- A,Occur in children & during puberty B,Precocious puberty in female C,Involve long bone of limb

- McCune-Albright syndrome (MAS) is characterized by the triad of polyostotic fibrous dysplasia, cafe au lait skin pigmentation, and peripheral precocious puberty.
- Albright syndrome is precocious sexual development, which occurs most often in girls.
- The average age at onset in affected girls is about 3 yr and puberty.

136. Increased portal vein pressure & normal hepatic vein pressure can be seen in all except:

a) Alcoholic cirhhosis

b) Alcholoic hepatitis

c) Budd Chairi syndrome

d) Portal vein thrombosis

e) Inferior vena cava obstruction

Correct Answer - C:E

Answer- C,Budd Chairi syndrome E,Inferior vena cava obstruction

- "Budd-Chiari syndrome (Obstruction of hepatic veins at any site from efferent vein of the lobule to the entry of the IVC into right atrium.
- Posthepatic- Budd-Chiari syndrome, Inferior vena caval webs

137. Which of the following statement(s) is/are regarding American Heart Association(AHA) Guideline-2015 for cardiopulmonary resuscitation(CPR) & Emergency cardiovascular care(ECC):

a) Chest compression: ventilation Compression ventilation ratio without advanced airway – rate 30:2 irrespective of rescuer & age of patient

b) Compression rate- at least 100/min

c) Failure to achieve an ETCO2 of 10 mm Hg by waveform capnography after 20 minutes of resuscitation has been associated with an extremely poor chance of return of spontaneous circulation(ROSC)

d) Limit interruptions in chest compressions to less than 10 seconds

e) None

Correct Answer - C:D

Answer- C,Failure to achieve an ETCO2 of 10 mm Hg by waveform capnography after 20 minutes of resuscitation has been associated with an extremely poor chance of return of spontaneous circulation(ROSC) D,Limit interruptions in chest compressions to less than 10 seconds

- Compression rate is modified to a range of l00 to 120/min.
- Compression ventilation ratio without advanced airway- 1 or 2 rescuers 30: 2

- Failure to achieve an ETCO2 of I0 mm Hg by waveform capnography after 20 minutes of resuscitation has been associated with an extremely poor chance of ROSC and survival.
- The clarified recommendatio-n for cfrest compression depth for adults is atleast 2 inches (S cm) but not greater than 2.4 inches (6 cm) .

138. True about multiple sclerosis:

a) Corticosteroids are used in acute attack

b) Intravenous Immunoglobulin is effective mode of treat¬ment

c) IFN a- used in recurrence

d) IFN-P- used in recurrence

e) Plasmapheresis may be used in severe relapses

Correct Answer - A:D:E

Answer- (A) Corticosteroids are used in acute attack (D) IFN-P- used in recurrence (E) Plasmapheresis may be used in severe relapses

- Main drugs used for treating multiple sclerosis include Interferon-β 1a
- Frequency of relapses in multiple sclerosis patient is decreased by beta-interferon/glatiramer.
- Newer drug approved for relapse in multiple sclerosis patients is Fingolimod.
- Glucocorticoids are used to manage either first attacks or acute exacerbations.
- Natalizumab is a monoclonal antibody against α4 subunit of α4β1 integrin on lymphocytes, useful in treating multiple sclerosis.
- It reduces the relapse rate when given intravenously once monthly.

139. Extrathyroid feature of hypothyroidism includes:

a) Pretibial myxedema

b) Carpal tunnel syndrome

c) Bradycardia

d) Thyroid acropathy

e) Peripheral edema

Correct Answer - B:C:E

Answer- (B) Carpal tunnel syndrome (C) Bradycardia (E) Peripheral edema

- Common symptoms are- Weight gain, Fatigue, Dry skin and hair, Menorrhagia, Hoarseness, coldness
- CVS- Bradycardia, Myxoedema, hypertension
- Nervous system- Carpal tunnel syndrome,
- Facial features- purplish lips, malar flush, periorbital oedema
- Yellowing of skin occurs due to accumulation of increase carotene.

140. Which of the following is true about medication overuse headache:

a) Not associated with triptanuse

b) Restriction of analgesics should be done

c) Opioid is mainly responsible

d) Preventive therapy should be encouraged after stopping/ reducing analgesic

e) None

Correct Answer - B:C:D

Answer- (B) Restriction of analgesics should be done (C) Opioid is mainly responsible (D) Preventive therapy should be encouraged after stopping/ reducing analgesic

- medications that are the most common culprits are compound analgesia (particularly codeine and other opiate containing preparations) and triptans, and MOH is usually associated with use on more than 10-15 days per month.
- Management is by withdrawal of the responsible analgesics
- Migraine prophylactics may be helpful in reducing the rebound headaches.

141. Which of the following is/are feature(s) of acute interstitial nephritis:

a) Eosinophiluria

b) Peripheral eosinophilia

c) WBC cast

d) Gross haematuria

e) Significant proteinuria

Correct Answer - A:B:C

Answer- (A) Eosinophiluria (B) Peripheral eosinophilia (C) WBC cast

- Peripheral eosinophilia can occur, especially with drug induced.
- Microscopic hematuria is invariably present.
- Urinalysis can reveal white blood cell, granular or hyaline cast.
- The presence of urine eosinophils is neither sensitive or specific.
- Proteinuria can be a feature, particularly in NSAIDS-induced interstitial nephritis.

142. Feature(s) of Bulbar palsy is/are:

a) Dysphagia

b) Absent jaw jerk

c) Absent gag reflex

d) Tongue atrophy

e) Tongue wasting & fasciculations

Correct Answer - A:B:C:D:E

Answer- (A) Dysphagia (B) Absent jaw jerk (C) Absent gag reflex (D) Tongue atrophy (E) Tongue wasting & fasciculations

- Paralysis or loss of function supplied by cranial nerve arising from bulb (old name of medulla oblongata).
- Affected CN are 9, 10, 11 & l2th.
- Tongue-flaccid, wasted, fasciculation may be present.
- Involvement of IX & X CN: Nasal twang, nasal regurgitation, hoarse voice, dysphagia, loss of sensation over pl/3 tongue,
- weak cough, absent gag reflex & weak cough reflex.
- In u/l lesion, there is never a complete paralysis of deglutition or of articulation.

143. All are true about hepatorenal syndrome except:

a) Creatinine level raised

b) Albumin infusion given

c) Liver transplantation improves renal functions

d) May occur in cirrhosis

e) Low dose dopamine infusion is very effective

Correct Answer - E

Answer- E. Low dose dopamine infusion is very effective

- The hepatorenal syndrome (HRS) is a form of functional renal failure without renal pathology that occurs in about 10% of patients with advanced cirrhosis or acute liver failure.
- There are marked disturbances in thc arterial renal circulation in Patients with HRS.
- TyPe I HRS- a significant reduction in creatinine clearance within 1-2 weeks of presentation.
- Type 2 HRS- an elevation of serum creatinine level.
- HRS is often seen in patients with refractory ascites.

Treatment-

- dopamine or prostaglandin analogues were used as renal vasodilating medications.
- Patients are treated with midodrine, an alpha-agonist, along with octreotide and intravenous albumin.
- The best theragy for HRS is liver transplantation.

144. Which of the following is/are used for assessment of carbohydrate malabsorption:

a) Schilling test

b) Steatorrhoea

c) D-xylose test

d) Glucose test

e) Urine test

Correct Answer - C

Answer- C. D-xylose test

- D-xylose absorption test is the most commonly employed test for carbohydrate absorption - Harrison
- An endoscopic mucosal biopsy is the more specific test and is now considered essential.
- D-xylose is a carbohydrate that is absorbed almost exclusively in the proximal small bowel without the help of pancreatic enzymes. A positive D-xylose test indicates malabsorption due to intestinal mucosal disease and thus be used as a test for assessment of mucosal function.

145. True about Swan-Ganz catheter:

a) Measures right atrial pressure

b) Measures left ventricular filling pressure

c) Measure PCWP

d) Inserted through left subclavian vein

e) Inserted directly in Right atrium

Correct Answer - A:B:C:D

Answer- (A) Measures right atrial pressure (B) Measures left ventricular filling pressure (C) Measure PCWP (D) Inserted through left subclavian vein

- Continuous cardiac output monitoring.
- Central temPerature monitoring
- Measurement of pulmonary artery pressure (can also measure RA and RV pressures during insertion)
- Measurement of mixed venous saturations
- Estimation of diastolic filling of left heart (normal PCWP 2-12mmHg)

146. Treatment of acute Hyperleukocytosis includes:

a) Hydroxyurea

b) Isotretinoin

c) Leukapheresis

d) Vincristine

e) All

Correct Answer - A:C:D

Answer- (A) Hydroxyurea (C) Leukapheresis (D) Vincristine

- Leukapheresis is the treatment of choice.
- In patients with AML, hydroxyurea should be started.
- In ALL patients, higher than 200, 000/mm3 patients may be treated with vinctistine, steroids, or both.

147. Feature(s) of 3rd degree burn is/are:

a) Blister formation

b) Very painful

c) No spontaneous healing

d) Dry eschar formation

e) Thrombosed vessels can be seen under the skin

Correct Answer - C:D:E

Answer- C,No spontaneous healing D,Dry eschar formation E,Thrombosed vessels can be seen under the skin

- Entire thickness of skin destroyed (into fat)
- Any color (white, black, red, brown), dry, less painful (dermal plexus of nerves destroyed)
- Heal by contraction and scar deposition (no epithelium left in middle of wound)
- Full-thickness Burns (3 degree BURN)- thrombosed vessels can be seen under the skin.

148. True about Babcock forcep:

a) Teeth at end

b) Serration at end

c) Triangular orifice in blades

d) Used for soft delicate tubular structure

e) Curved forcep

Correct Answer - C:D

Answer- C,Triangular orifice in blades D,Used for soft delicate tubular structure

- An instrument with a ratchet & a triangular erpansion with fenestrations at the operating end
- It does not have any teeth
- This instrument can be used to hold intestine, thyroid gland, mesoappendix, uterine tube etc.

149. Gas used in creating pneumoperitonem :

a) Water

b) CO2

c) 02

d) Air

e) CO

Correct Answer - B:C:D

Answer-B,CO2 C,02 D,Air

- Gases used for pneumoperitoneum include carbon dioxide (CO2), air, oxygen, nitrous oxide (N20), argon, helium and mixtures of these gases.

150. CO2 is used in laproscopy for creating pneumoperitoneum in place of air because:

a) Less absorption from peritoneal surface

b) Fast clearance from body

c) Less solubility in blood

d) Electrocauteryis safe to use

e) Less risk of gas embolism

Correct Answer - B:D:E

Answer- B,Fast clearance from body D,Electrocauteryis safe to use E,Less risk of gas embolism

- CO2 gas insufflation is preferred by most laparoscopists because it has a high diffusion coefficient and is a normal metabolic end product rapidly cleared from the body.
- Also, CO2 is highly soluble in blood and tissues and does not support combustion.
- The risk of gas embolism is lowest with CO2.
- Cardiac arrhythmias can occur with CO2 pneumoperitoneum.

151. Acute haemorrhagic pancreatitis produce which of the following sign:

a) Cullen sign

b) Rovsing sign

c) Psoas sign

d) Grey Turner sign

e) Kehr sign

Correct Answer - A:D
Answer- A,Cullen sign D,Grey Turner sign

- Bleeding into the fascial plane scan produce bluish discolouration of the flanks (Grey Turner's sign) or umbilicus (Cullen's sign).

152. True regarding urinary catheterization with 16 French size:

a) It is the suitable size to use in adult female

b) It can cause UTI in long term use

c) Used in management of urethral obstruction

d) Diameter is 4 mm

e) Sterile technique must be used for insertion

Correct Answer - A:B:C:E

Answer- A,It is the suitable size to use in adult female B,It can cause UTI in long term use C,Used in management of urethral obstruction E,Sterile technique must be used for insertion

- Foley's catheter is sterilized by gamma radiation. Usually Foley's catheter is kept for 7 days.

Size:

- Adults— 16 F
- Children— 8 F or 10 F
- Obstruction of the urethra by an anatomical condition that ,makes it dfficult for one to urinate: prostate hypertrophy,
- prostate cancer, or narrowing of the urethra.

153. Which of the following is/are true about obstructive uropathy:

a) Stricture in ureter is cause

b) Stone in ureter is cause

c) RTA type 4 can occur

d) Absence of hydronephrosis on USG rule out obstructive uropathy

e) When obstruction is above the level of the bladder, bilateral hydroureter and hydronephrosis occurs

Correct Answer - A:B:C

Answer- A,Stricture in ureter is cause B,Stone in ureter is cause C,RTA type 4 can occur

- Any obstruction at or distal to the bladder neck may lead to back pressure affecting both kidneys.
- Obstruction at or proximal to the ureteral orifice leads to unilateral damage.
- Partial obstruction leads to gradual progressive muscular hypertrophy followed by dilation, decompensation and hydronephrotic changes.
- Acquired urinary tract obstruction may be due to inflammatory or traumatic urethral strictures, ureteral or pelvic stones.

154. True about branchial fistula:

a) External opening near the anterior border of sternocleido¬mastoid

b) External opening at junction of upper & middle third of sternocleidomastoid muscle

c) Develop due to persistence of 2ndbranchial cleft

d) Open in oropharynx

e) Move with swallowing

Correct Answer - A:C:D

Answer- A,External opening near the anterior border of sternocleido¬mastoid C,Develop due to persistence of 2ndbranchial cleft D,Open in oropharynx

- This is always congenital & occurs due to persistent 2nd branchial cleft.
- The external orifice is nearly always situated in the lower third of the neck near the anterior border of the sternocleidomastoid.
- The patient may complain of a dimple, discharging mucus & the dimple becomes more obvious when the patient is asked to swallow.

155. True about 1st degree haemorrhoid:

a) Painless bleeding

b) Malaenae occur

c) Constipation may be present

d) Prolapse on defaecation

e) Never prolapse

Correct Answer - A:C:E

Answer- A,Painless bleeding C,Constipation may be present E,Never prolapse

Four Degrees of Haemorrhoids

- First degree: bleed only, no prolapse
- Second degree: prolapse, but reduce spontaneously
- Third degree: prolapse and have to be manually reduced
- Fourth degree: permanently prolapsed

156. Which of the following examination is done in supine position:

a) Tredelenburg position

b) ReverseTredelenburg position

c) Sims position

d) Jack knife position

e) Lloyd-Davies position

Correct Answer - A:B:E

Answer- A,Tredelenburg position B,ReverseTredelenburg position E,Lloyd-Davies position

- "Tredelenburg position: Lithotomy with head down
- Reverse Tredelenburg position: The patient is supine on the operating table with the table tilted up 15" at the head end to reduce venous engorgement.
- "Most commonly, the patient is examined in the left lateral (Sims) positior with the buttocks overlying the edge of the examination couch and with the axis of the torso crossing, rather than parallel with, the edge of the couch.
- The prone jackknife or knee-elbow positions may be used.
- Lloyd-Davies Position: It is also known as the Trendelenburg position with legs apart.

157. True about lip carcinoma:

a) Common in smoker

b) More common in lower lip

c) More common in upper lip

d) Always painful to touch

e) Distant metastasis is late

Correct Answer - A:B:E

Answer- A,Common in smoker B,More common in lower lip E,Distant metastasis is late

Lower lip is more often involved

- Incidence of oral cancer is six times more in smoker than non-smoker
- Site of predilection is b/w the midline & commissure of the lip
- Mostly, it is squamous cell carcinoma, often seen in males in the age group of40-70 years
- L, N metastases develop late. Submental & submandibular nodes are the first to be involved; other deep cervical nodes may also get involved later.

158. True about mediastinal teratoma:

a) Most common tumour of anterior mediastinum

b) Most common germ cell tumour of mediastinum

c) More commonly occurs in anterior mediastinum

d) Contain teeth, skin, hair, cartilage and bone

e) Histologically graded as differentiated & undifferentiated

Correct Answer - B:C:D:E

Answer- B,Most common germ cell tumour of mediastinum C,More commonly occurs in anterior mediastinum D,Contain teeth, skin, hair, cartilage and bone E,Histologically graded as differentiated & undifferentiated

- Most common malignancy in young men between age 15 and 35 years.
- Primary mediastinal germ cell tumors (including teratomas, seminomas, and nonseminomatous malignant germ cell tumors) are a heterogeneous group of benign and malignant neoplasms.
- Teratomas are the most common type of mediastinal germ cell tumors.
- They contain two or three embryonic layers that may include teeth, skin, hair (ectodermal), cartilage and bone (mesodermal), or bronchial, intestinal, or pancreatic tissue (endodermal).

Mediastinal Teratomas may either be-

- Mature: Well differentiated
- Immature: Poorly differentiated
- With malignant transformation

159. True about inguinal hernia in children:

a) Occur due to persistence of processus vaginalis

b) Defect in abdominal may present

c) Most common variety is direct type

d) Difficult to reduce non-operatively

e) More common in girls

Correct Answer - A:B:D

Answer- A,Occur due to persistence of processus vaginalis B,Defect in abdominal may present D,Difficult to reduce non-operatively

- In children, if inguinal (indirect) hernia is present in one side, then processus vaginalis is intact on other side.
- Males are affected about six times more often than females.
- Indirect inguinal hernia- Can occur in any age from childhood to adult.
- Inguinal hernia results from a failure of closure of the processus vaginalis.

160. True regarding testicular tumour:

a) For stage I seminoma- orchidectomy alone used for treatment

b) For stage I seminoma- orchidectomy + radiotherapy used for treatment

c) Stage I non-seminomatous germ cell tumour-orchidectmy +radiotherapy used for treatment

d) Staging is important for planning management

e) i3HCG & AFP may be used as marker the response of treatment

Correct Answer - B:D:E

Answer- B,For stage I seminoma- orchidectomy + radiotherapy used for treatment D,Staging is important for planning management E,i3HCG & AFP may be used as marker the response of treatment

Testicular Tumour: Staging

- Stage I: The tumour is confined to the testis;
- Stage II: Nodal disease is present but is confined nodes below the diaphragm;
- Stage III: Nodal disease is present above the diaphragm;
- Stage IV: Nonlymphatic metastatic dise
- In confirmed cases, staging is an essential step in planning treatment.
- HCG & NSGCTs when raised, these markers are used to monitor the response to treatment.

161. Feature(s) of Fournier's gangrene:

a) Necrotizing fasciitis of the male genitalia and perineum

b) Diabetes is risk factor

c) Urgent wide surgical excision of the dead and infected tissue is essential

d) Testis need to be removed in all cases

e) None

Correct Answer - A:B:C

Answer- A,Necrotizing fasciitis of the male genitalia and perineum B,Diabetes is risk factor C,Urgent wide surgical excision of the dead and infected tissue is essential

- Fournier's gangrene is a necrotizing fasctitis of the male genitalia and perineum that can be rapidly progressing and fatal if not treated promptly.

Risk factors-

- urethral
- strictures,
- perirectal abscesses,
- poor perineal hygiene,
- diabetes,
- cancer,
- human immunodeficiency virus (HIV)

Clinical features-

- Clinical signs include fevers, perineal and scrotal pain.
- Cellulitis, eschars, necrosis, flaking skin, and crepitus may all be observed.
- Treatment-

- Urgent wide surgical excision of the dead and infected tissue is essential.

162. Which of the following is/are feature(s) of enlarged kidney:

a) Ballotable

b) Upper border can be reached

c) Shift to paracolic gutter on compression

d) Do not move with respiration

e) Dull on percussion on renal angle

Correct Answer - A:E

Answer- A,Ballotable E,Dull on percussion on renal angle

- It is a reniform swelling
- It moves very slightly uith respiration as it comes down a little at the height of inspiration.
- It is ballottable
- A sickening sensation is often felt during manipulation
- A hand can be easily insinucted b/w the upper pole of swelling & the costal margin
- Percussion will rewal resonont note in front of a kidney swelling as coils of intestine & colon will always be in front ofthe kidney.

163. Hypoparathyroidism can occur in:

a) After thyroid surgery

b) Digeorge syndrome

c) Radical resection of head & neck cancer

d) MEN I

e) All

Correct Answer - A:B:C
Answer- A,After thyroid surgery B,Digeorge syndrome C,Radical resection of head & neck cancer
Genetic disorders (eg: DeGeorge syndrome)

- . Abnormal parathyroid gland development
- . Abnormal PTH synthesis
- o Activating mutations of calcium sensing receptor (autosomal dominant hypocalcemia or sporadic isolated hypoparathyroidism)
- . Post-surgical (thyroidectomn parathyroidectomn radical neck dissection)
- o Autoimmune polyglandular syndrome

164. True about breast cyst:

a) Mostly seen in premenopausal period

b) Most common in young woman

c) Usually unilateral

d) Yellowish-greenish discharge

e) Adhere to underlying skin

Correct Answer - A:C:D

Answer- A,Mostly seen in premenopausal period C,Usually unilateral D,Yellowish-greenish discharge

- Classically seen in perimenopausal women mostly in last decade of reproductive life.
- 50% of cysts are multiple or recurrent.
- Cyst fluid can be straw, colored, opaque, or dark green and may contain fleck of debris.
- Diagnosis can be confirmed by aspiration and/or ultrasound.

165. Fibrocystic disease differ from fibroadenoma by having:

a) Pain shift with cycle

b) Freely mobile

c) Usually bilateral

d) Firm & rubbery

e) Well demarcated border

Correct Answer - A:C

Answer- A,Pain shift with cycle C,Usually bilateral

- Painful, often multiple, usually bilateral masses in the breast.
- Rapid fructuation in the size of the masses is common.
- Frequently, pain occurs or increases and size increases during premenstrual phase of cycle.
- These lesions are always associated with benign changes in the breast epithelium.
- The microscopic findings of fibrocystic condition indude cyst (gross and microscopic), papillomatosis, adenosis, fibrosis, and ductal epithelial hyperplasia.

Clinical features-

- Pain or tenderness often calls attention to the mass.
- Discharge from the nipple.
- Discomfort occurs or is increased during the pemenstrual phase of the cycle.

Fibroadenoma-

- Peak age of incidence is at 20 year
- Present with painless lump

- It is smooth, round bordered, firm to hard in consistency & freely mobile within the breast (so called breast mouse)

166. Test for incompetent valve done by:

a) Cough impulse test

b) Trendelenburg

c) Percussation wave travel in retrograde direction along varicose vein

d) Percussation wave travel in orthograde direction along varicose vein

e) All

Correct Answer - A:B:C

Answer- A,Cough impulse test B,Trendelenburg C,Percussation wave travel in retrograde direction along varicose vein

- Cough impulse test: saphenoofemoral incompetence
- Trendelenburg I: saphenofemoral incompetence
- Trendelenburg II: Perforator incompetence
- Multiple tourniquet test: Site of perforator incompetence
- Schwartz test: Superficial column of blood

167. Which of the following is/are true about renal carcinoma of T3a stage:

a) Involve Gerota fascia

b) Involve perinephric fat

c) Renal vein involvement

d) Inferior vena cava involvement

e) Size >10 cm

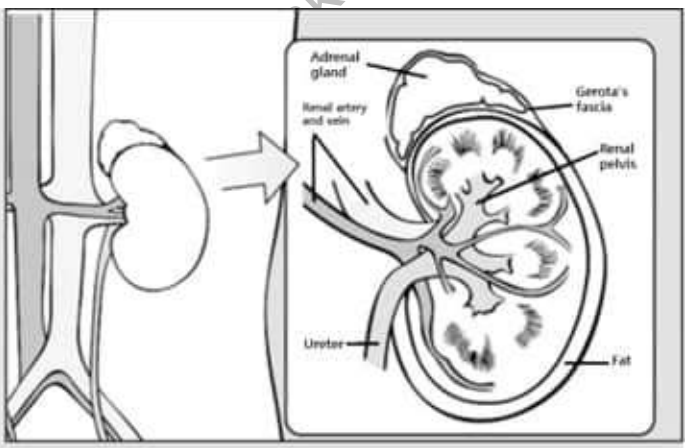
Correct Answer - B:C:E

Answer- B,Involve perinephric fat C,Renal vein involvement E,Size >10 cm

Stages of renal cell carcinoma

Stage I
- tumor<7cm
- found only in the kidney
- T1, N0, M0
- 5-year survival 95%

Stage II
- tumor>7cm
- found only in the kidney
- T2, N0, M0
- 5-year survival 88%



Stage III
- tumor can be any size
- found in the kidney and regional spread of tumor in major blood vessels, the layer of fatty tissue around the kidney, or neighboring lymph nodes
- T1 or T2, T3, N0 or N1, M0
- 5-year survival 59%

Stage IV
- tumor beyond the layer of fatty tissue around the kidney and in the adrenal gland
- distant metastases in the lungs, bones, brain and distant lymph nodes
- T4, any T, any N, M0, M1
- 5-year survival 20%

168. True about extracorporeal shock wave lithotripsy (ECWL):

a) C/I in pregnancy

b) Less satisfactory for hard stones

c) Stone is breaked into small pieces which comes out with urine

d) Safer in coagulopathy

e) Endoscopic retrieval is sometimes used for impacted stone fragment produced by lithotripsy

Correct Answer - A:B:C:E

Answer- A,C/I in pregnancy B,Less satisfactory for hard stones C,Stone is breaked into small pieces which comes out with urine E,Endoscopic retrieval is sometimes used for impacted stone fragment produced by lithotripsy

- Crystalline stones disintegrate under the impact of shock waves produced by the ESWL machine.
- Ureteric colic is common after ESWL.
- The principal complication of ESWL is infection.
- "Pregnant women and.patients with large abdominal aortic aneurysms or uncorrectable bleeding disorders should not be treated with ESWL.

169. True about carcinoma gall bladder:

a) Increased bilirubin level is contraindication for surgery

b) Palliative treatment is for advanced disease

c) Metastatic recurrence is common in liver

d) When gall bladder wall is involved, extended cholecystectomy is done

e) Surgery should be done in all cases

Correct Answer - B:C:D

Answer- (B) Palliative treatment is for advanced disease (C) Metastatic recurrence is common in liver (D) When gall bladder wall is involved, extended cholecystectomy is done

- If GB cancer is found at cholecystectomy & if mucosa alone is involved, then cholecystectomy is sufficient
- If GB wall is involved, then extended cholecystectomy is done
- Radiation has very small benefit. Chemotherapy also has been tried. 5-FU, mitomycin C, doxorubicin are drugs used
- Prognosis is very poor. Aggressive surgery & complete clearance give best results.
- Surgery remains the only curative option for gallbladder cancer.

170. True about paramedian incision:

a) It is made below umbilicus

b) Better in obese person

c) Cause abdominal hernia

d) Cut anterior surface of rectus sheath

e) Cut posterior surface of rectus sheath

Correct Answer - C:D:E

Answer- (C) Cause abdominal hernia (D) Cut anterior surface of rectus sheath (E) Cut posterior surface of rectus sheath

- Use: provides laterality to the midline incision, allowing lateral structures such as the kidney, adrenals and spleen to be accessed.
- Location: about 2-5 cm to the left or right of the midline incision. Incision is over the medial aspect of the transverse convexity of the rectus.
- Layers of the abdominal wall skin, fascia (camper's and scarpa's) and the anterior rectus sheath are incised.
- Incisions in anterior and posterior shecti is seperated by muscle which acts as a buttress, therefore closure and more secure.

171. All are true about full thickness rectal prolapse except:

a) Elderly are at risk

b) Common in children

c) More common in female

d) sensation of incomplete evacuation

e) May associated with a weak pelvic floor

Correct Answer - B

Answer- B. Common in children

- Common In elderly women who are multipara
- ConstiPation is important feature
- Tenesmus common
- Some degree of incontinence of faeces & flatus is always present.

172. Which of the following is/are feature(s) of Keloid:

a) Collagen fibers are randomly arranged

b) Type IV collagen dominates

c) Lesion with healthy margin removed

d) Steroid is very useful

e) Goes beyond margin of wound

Correct Answer - B:D:E

Answer- (B) Type IV collagen dominates (D) Steroid is very useful (E) Goes beyond margin of wound

- Scars are often described as being atrophic, hypertrophic and keloid.
- A hypertrophic scar is defined as excessive scar tissue that does not extend beyond the boundary of the original incision or wound.
- A keloid scar is defined as excessive scar tisste that extends beyond the bounilaries of the originat incision or wound .
- IgE antibody is least commonly seen in keloid.

eloids grow on particular sites, these are ?

.. Central chests (probably most common, not sure)
2. Back
3. Shoulder
4. Earlobes

Etiology of keloid-

- Key factors: Surgery burns, vaccinations
- Elevated levels of growth factor (more of type .8, collagen)
- Laceration or abrasion

- Over the sternum (incision)
- Inheritance and injection
- Deep pigmented skin

Histology of both hypertrophic and keloid scars-

- Excess collagen with hypervascularity
- keloids where there is more type III collagen.
- Hypertrophic scars improve spontaneously with time, whereas keloid scars do not.
- keloid scars have thicker, more abundant collagen bundles.

Treatment-

- Intralesional injection of steroid (Triamcinolone acetate) is now recommended as the first line of t/t for keloid.

173. True about Congenital hypertrophic pyloric stenosis:

a) Shortening of pyloric canal on barium contrast imaging

b) Elongation of pyloric canal on barium contrast imaging

c) Narrowing of pyloric canal on barium contrast imaging

d) Thickened pyloric muscle on USG

e) Child should be given normal saline with KC1

Correct Answer - B:C:D:E

Answer- (B) Elongation of pyloric canal on barium contrast imaging (C) Narrowing of pyloric canal on barium contrast imaging (D) Thickened pyloric muscle on USG (E) Child should be given normal saline with KC1

- Imaging confirmation is sought by most clinician to differentiate from gastroesophageal reflex
- Precaution: Empty stomach via nasogastric tube before study & Remove contrast at end
- Elongation & narrowing ofpyloric canal
- String sign=passing of small barium streak through elongated pyloric channel (most specific sign)
- Double/triple track sign: crowding of mucosal folds in pyloric channel

174. In comparison to ulcerative colitis, which of the following is/are feature(s) of crohn's disease:

a) Transmural inflammation

b) More common in smoker

c) More pANCA positivity

d) TNF-alpha inhibitor role only in CD

e) All

Correct Answer - A:B:D

Answer- (A) Transmural inflammation (B) More common in smoker (D) TNF-alpha inhibitor role only in CD

- Can affect any part of GIT, but me sites – terminal ileum, ileocecal valve, and caecum.

Etiology-

- Smoking is a strong risk factor
- OCPs and Appendicectomy increase risk

Morphology-

- Skip lesions
- Thick bowel wall
- Strictures common
- Transmural inflammation
- Non caseating granulomas
- Moderate pseudopolyps
- Deep, knife- like ulcers
- Fibrosis, serositis- Marked

Investigations-

- 70% ASCA +ve (anti Saccharomyces cerevisiae Ab) 10% pANCA positive

Treatment

- Anti-TNF therapy (Infliximab, adalimumab, certolizumab) -first-line agents to induce remission in moderate to severe disease and to maintain remission

175. True about paralytic ileus:

a) Postoperative ileus primarily affects the stomach and colon

b) Mostly resolve after 24-72 hours

c) Return of function occurs in the following order: stomach, large bowel and small bowel.

d) If opioid is used as postoperative analgesia, then chance increases

e) Is an anticipated complications of abdominal operations

Correct Answer - A:B:D:E

Answer- (A) Postoperative ileus primarily affects the stomach and colon (B) Mostly resolve after 24-72 hours (D) If opioid is used as postoperative analgesia, then chance increases (E) Is an anticipated complications of abdominal operations

- Etiology
- Post operative
- A degree of ileus usually occurs after any abdominal procedure
- Self-limiting (24-72 hours)
- May be prolonged in Hypoproteinemia or metabolic abnormality
- Intra-abdominal inflammation (peritonitis, abscess, retroperitoneal hemorrhage)
- Reflex ileus: following fractures of spine/ribs, retroperitoneal hemorrhage or application of a plaster jacket
- Metabolic & electrolyte derangements (uremia, hypokalemia, hyponatremia, hypo and hypomagnesemia, diabetic coma, hypoparathyroidism, hypothyroidism)
- Drugs (opiates, psychotropic agents, anticholinergic agents, calcium channel blockers)

- Return of function of the intestine occurs in the following order: small bowel, large bowel and then stomach
- Paralytic ileus, also called pseudo-obstruction, is one of the major causes of intestinal obstruction in infants and children.

176. Acinic cell carcinoma is/are found in:

a) Breast

b) Parotid

c) Lacrimal gland

d) Pancrease

e) Minor salivary gland

Correct Answer - B:D:E

Answer- (B) Parotid (D) Pancrease (E) Minor salivary gland

- Major Salivary Glands (including parotid)
- Minor Salivary Glands
- Acinar cell caricinoma are malignant epithelial neoplasm (of pancrease)

177. Which are Radio-opaque stones:

a) Pure uric acid

b) Cysteine

c) Phosphate

d) Oxalate

e) Impure uric acid

Correct Answer - B:D:E
Answer- (B) Cysteine (D) Oxalate (E) Impure uric acid
Renal Calculus-

- Oxalate stones
- Phosphate calculus- struvite
- Uric acid and urate calculi
- Cystine calculus

178. True about lymphangiomacircum scriptum:

a) Compressible swelling

b) Often contain clear fluid

c) Groups of vesicles are found on skin

d) May present at birth or shortly after birth

e) None

Correct Answer - B:C:D

Answer- (B) Often contain clear fluid (C) Groups of vesicles are found on skin (D) May present at birth or shortly after birth

- This tyPe Presents as circumscribed lesion which appears as small vaicle or small blister or slightly elevated skin patch
- The size varies from 0.5 to 4 mm in diameter
- A large area of skin may be involved on the inner side of the thigh, buttock on the shoulder or in the axilla
- The whole lesion is soft & sPongY
- Fluctuation, fluid thrill & translucency test are always positive. The swelling is not compressible
- The margins of the swelling are indistinct
- The skin vesicles contain clear fluid
- It is usually prominent at puberty and may often start bleeding.

179. Sacral-teratoma/sacrococcygeal teratoma is a derivative of -

a) Primitive streak

b) Ectoderm

c) Hypoblasts

d) Cranial neuropore

e) None

Correct Answer - A

Answer- A. Primitive streak

Gastrulation & Hensen's node:

- In 2nd week - Gastrulation occurs → Establishes 3rd germ layer (mesoderm).
- Gastrulation begins with primitive streak formation in caudal region of epiblast.
- Primitive node or Hensen's node or primitive knot:
- Thickening formed at cranial end of primitive streak.

Sacrococcygeal formation:

- Failure of Hensen's node to regress can lead to sacrococcygeal formation.
- Incomplete primitive streak regression → leaves caudal remnant → Sacrococcygeal teratoma.
- Arise from residual to totipotential cell rests (Hensen's node).
- Sacrococcygeal teratoma demonstrates tissue derived from all three cell layers.
- Contain varying proportions of mature & immature elements.

180. True about central venous catheterization:

a) Catheter may be placed through subclavian vein

b) If the CVP is low in the presence of a low MAP or cardiac output, then fluid resuscitation is necessary

c) Can be used for gaining venous access in patient with poor peripheral veins

d) Subclavian vein route is safest in term of complications

e) All

Correct Answer - A:B:C

Answer- (A) Catheter may be placed through subclavian vein (B) If the CVP is low in the presence of a low MAP or cardiac output, then fluid resuscitation is necessary (C) Can be used for gaining venous access in patient with poor peripheral veins

- Used for monitoring of CVE administration of fluid to treat hypovolemia & shock, infusion of caustic drug & total Parenteral nutrition, asPiration of emboli, insertion of transcutaneous pacing leads & gaining venous access in patient with poor peripheral veins.
- CVP or right atrial pressure (RAP) is monitored using a catheter inserted via either the internal jugular or the subclavian vein.
- The CVP may help in assessing the need for intravascular fluid replacemant.

181. True about care of polytrauma patient:

a) CT scan of whole body can be done to exclude injuries

b) Long spinal cord injury support is given if spinal cord injury is suspected

c) Triage of injuries with colour coding like red, yellow, green & black can be done in case of mass casualty

d) Initial fluid management is done as early as possible

e) None

Correct Answer - A:B:C:D

Answer- (A) CT scan of whole body can be done to exclude injuries (B) Long spinal cord injury support is given if spinal cord injury is suspected (C) Triage of injuries with colour coding like red, yellow, green & black can be done in case of mass casualty (D) Initial fluid management is done as early as possible

- Because of CT, an increasing amount of both blunt & penetrating trauma has been safely managed nonoperatively.
- 'The availability of high resolution multislice scanners, promoting the development of protocols in some centers that call for early intergration of complete body (i.e. head, cervical mspine, chest, abdomen & pelvis) CT scanning of selected trauma patient.
- Intravenous line is critical for intravenous volume resuscitation.
- Triage system involves a color-coding scheme using red, yellow, green, white, and black tags: Red indicates high priority treatment or transfer, yellow signals medium priority, green indicates ambulatory patients & black for dead or moribund.

182. Which of the following is true about suture technique:

a) Subcuticular suture is used where cosmetic appearance is important

b) Vertical mattress causes cause prominent stitch mark scars

c) Horizontal mattress is used for fragile skin

d) Vertical mattress is used for fragile skin

e) None

Correct Answer - A:B:C

Answer- (A) Subcuticular suture is used where cosmetic appearance is important (B) Vertical mattress causes cause prominent stitch mark scars (C) Horizontal mattress is used for fragile skin

- The horizontal mattress stitch is a suture technique used to close wounds.
- This makes it ideal for holding together fragile skin.
- Vertical mattress suture are that it provides closure for both deep and superficial layers, and also allows perfect eversion and vertical opposition of the superficial skin edges.
- Subcuticular suture technique is used in skin where a cosmetic appearance is important arrd where the skin edges may be approximated easily.

183. Corticosteroids are useful in which of the following paediatrics disease:

a) TB meningitis

b) Endobronchial TB

c) Spinaventosa

d) Acute tuberculous pericardial effusion

e) Severe miliary tuberculosis

Correct Answer - A:D:E

Ans. (A) TB meningitis; b. Endobronchial TB; (D) Acute tuberculous pericardial effusion; (E) Severe miliary tuberculosis

Corticosteroids use in paediatrics:

These are useful in the treatment of some children with tuberculosis disease.

- Corticosteroids decrease mortality rates and long-term neurologic sequelae in some Patients with tuberculous meningitis by reducing vasculitis, inflammation, and, ultimately, intracranial pressure.
- Short courses of corticosteroids :Endobronchial tuberculosis that causes respiratory distress, localized emphysema, or segmental pulmonary lesions.
- Relieve symptoms and constriction associated with acute tuberculous pericardial effusion.
- Dramatic improvement in symptoms of tuberculous pleural effusion and shift of the mediastinum.
- Severe miliary tuberculosis have dramatic improvement with corticosteroid therapy if the inflammatory reaction is so severe that

alveolocapillary block is present.

184. Eosinophilia in children is/are present in:

a) Allergic rhinitis

b) Echinococcosis

c) Rheumatoid arthritis

d) Infectious mononucleosis

e) Wiskott-Aldrich syndrome

Correct Answer - A:B:C:E

Ans. (A) Allergic rhinitis; (B) Echinococcosis; (C) Rheumatoid arthritis; (E) Wiskott-Aldrich syndrome

Common causes of eosinophilia:

Acute:

- Allergic disorder: Asthma, atopic dermatitis, urticaria. drug hypersensitivity, pemphigoid
- Parasitic infestation: Toxocara, ascaris, amebiasis, strongyloidiasis, filarial, toxoplasmosis, trichinosia, schistosomiasis, malaria, scabies
- Fungal infections: Bronchopulmonary aspergillosis, coccidiomycosis
- Malignancy: Hodgkin lymphoma, T cell lymphoma, acute myelogenous leukaemia, myeloproliferative syndrome
- Hypereosinophilic syndrome

Chronic:

- Allergic disorders: Pemphigus, dermatitis herpetiformis
- Autoimmune disorders: Inflammatory bowel disease, rheumatoid arthritis, Myeloproliferative syndrome, hypereosinophilic syndrome ,Loeffler syndrome.
- Immunodeficiency syndromes: Hyper IgE, Wiskott Aldrich syndrome; Omenn syndrome; graft versus host reaction
- Miscellaneous: Thrombocytopenia with absent radii; renal allograft

rejection; Addison disease

185. Syndrome not associated with childhood leukaemia:

a) Edward syndrome

b) Fanconi syndrome

c) Diamond-Black anaemia

d) Patau syndrome

e) Kostmann syndrome

Correct Answer - A:D

Ans. (A) Edward syndrome; (D) Patau syndrome

Risk factors for Childhood Leukemia

- Down syndrome
- Shwachman-Diamond syndrome
- Kostmann syndrome
- Li-Fraumeni syndrome
- Fanconi syndrome
- Bloom syndrome
- Klinefelter syndrome
- Turner syndrome
- Neurofibromatosis type I
- Ataxia-telangiectasia
- Severe combined immune deficiency
- Paroxysmal nocturnal haemoglobinuria

186. A child has vitamin D deficiency rickets. Which of the following is/are correct regarding biochemical changes:

a) ↑ Alkaline phosphatase

b) ↑ serum calcium

c) ↑ parathyroid hormone

d) ↑ phosphate

e) ↑ 25-(OH)D3

Correct Answer - A:C

Ans. (A) ↑ Alkaline phosphatase ; (C) ↑ parathyroid hormone

BIOCHEMICAL REACTIONS:

- Serum calcium: normal or low
- Serum phosphate: low
- Alkaline phosphatase: high
  - Hypophosphatasia shows low level of alk. phosphatase
- PTH: High
- Hypophophatemia

187. True about fetal alcohol syndrome:

a) Increased birth weight

b) Normal fine motor development

c) Normal social skill development

d) Facial abnormalities

e) Intelligence subnormal

Correct Answer - D:E

Ans.(D) Facial abnormalities ; (E) Intelligence subnormal

Fetal alcohol syndrome

- High level of alcohol ingestion in pregnancy can cause damage to fetus, known as fetal alcohol syndrome.
- The harmful effects may be due to alcohol itself or due to one of its breakdown products. Some evidence suggests that alcohol may impair placental transfer of essential amino acids and zinc, both necessary for protein synthesis, which may account for IUGR.

Characteristics of fetal alcohol syndrome include : ?

- IUGR (not large proportionate body)
- Microcephaly
- Congenital heart defects (ASD, VSD)
- Mental retardation
- Facial abnormalities → Short palpebral fissures, epicanthal folds, maxillary hypoplasia, micrognathia, low set ears, smooth philtrum, thin smooth upper lip.
- Minor joint anomalies
- Hyperkinetic movements

188. Feature(s) of congenital rubella syndrome include:

a) Cataract

b) ASD

c) Deafness

d) Patent ductus arteriosus

e) All the above

Correct Answer - A:C:D

Ans. (A) Cataract; (C) Deafness; (D) Patent ductus arteriosus

- Congenital rubella syndrome (CRS) can occur in a developing fetus of a pregnant woman who has contracted rubella, usually in the first trimester.
- Triad shows:**PDA, cataract and deafnes**
- If infection occurs 0–28 days before conception, the infant has a 43% risk of being affected.
- Infection in 2nd trimester – may be deafness only.
- >6 wks – no major abnormalities
- Diagnosis: Isolation of virus in cell cultures of throat samples, urine or other secretions.
- Detection of IgM in single serum sample shortly after birth.
- Persistence of Rubella IgG antibodies serum beyond 1 year or rising antibody titre anytime during infancy in an unvaccinated child

189. A 4.2 kgs baby born to uncontrolled diabetic mother. The following condition will not occur in the baby:

a) Hypercalcemia

b) Hypoglycemia

c) Hyperbilirubinemia

d) Polycythaemia

e) Cardiovascular defects

Correct Answer - A

Ans. (A) Hypercalcemia

Neonatal Complication :

- Hypoglycaemia
- Respiratorydistress syndrome
- Hyperbilirubinemia
- Hypocalcemia
- Hypomagnesemia .
- Polycythemia
- Cardiomyopathy

190. True about caput succedaneum -

a) Oedematous swelling of scalp

b) Margins are clearly defined

c) Swelling resolve spontaneously after few days ofbirth

d) Swelling remains for three months

e) Maximum size at birth

Correct Answer - A:C:E

Ans. (A) Oedematous swelling of scalp; (C) Swelling resolve spontaneously after few days of birth; (E) Maximum size at birth

- Caput succedaneum is a diffuse, sometimes ecchymoticedematous swelling of the soft tissues of the scalp involving the area Presenting during vertex delivery.
- It may extend across the midline and across suture lines.
- The edemadisappears within the lstfew days of life.
- Molding of the head and overriding of the parietal bones are frequently associatedand become more evident aftercaput has receded; they disappear during the lst weeks oflife
- Analogous swelling, discoloration, and distortion ofthe face are seen in face Presentations.

191. A child has fever with redness of cheek. The causative organism forthis condition is:

a) Herpes virus

b) Parvovirus B-19

c) Adenovirus

d) Rubella

e) Roseola

Correct Answer - B

Ans. (B) Parvovirus B-19

Exanthema infectiosum:

- The characteristic rash first appears as erythematous flushing on the face in a slapped cheek appearance (red cheek).
- The most common manifestation of parvovirus B19 is erythema infectiosum, also known as fifth disease, which is a benign, self-limited exanthematous illness of childhood.
- It was the 5th in a classification scheme of common childhood exanthems.
- The preceding 4 exanthems were measles, scarlet fever, rubella, and Filatov-Dukes disease (an atypical scarlet fever), with roseola infantum as the "sixth disease

192. True about minimal change disease -

a) Hypertension is commonly present

b) Most common cause of nephrotic syndrome in adults

c) High dose steroids results in remission in most cases

d) Commonly progress to chronic renal failure

e) Reversible loss of podocyte function

Correct Answer - C:E

Answer- (C) High dose steroids results in remission in most cases (E) Reversible loss of podocyte function

Minimal change disease:

- Also k/a lipoid nephrosa, foot process disease & Nil deposit disease
- The disease sometimes follows a respiratory infection or routine prophylactic immunization'
- The onset may be preceded by an upper respiratory infection, atopic allergy or immunisation.
- The disease characteristically respond to steroid therapy
- The benign disorder is characterized by diffuse effacement of foot processes of visceral epithelial cell (podocytes).
- most frequent cause of nephrotic syndrome in children
- The visceral epithelial changes are completely reversible afrer corticosteroid therapy, concomitant with remission of the proteinuria.
- There is commonly no hypertension or hematuria.
- The appearance of acute renal failure in adults.

193. Which of the following true about new-born&children:

a) Erythropoietin level is more in preterm than term

b) Erythropoietin given to preterm only in some special cases

c) Erythropoietin given to Preterm can cause complication

d) a & b

e) None of the above

Correct Answer - B:C

Ans. (B) Erythropoietin given to preterm only in some special cases; (C) Erythropoietin given to Preterm can cause complication

- Most infants with birthweight of <1Kg RBC transfusions. A key reason why the nadir haemoglobin values of premature infants are lower than those of term infants is the former group's relatively diminished plasma EPO level in responseto anaemia.
- Preterm infants exhibit a sluggish EPO response to falling haematocrit values.
- Low plasma EPO level provide rationale the use of recombinant EPO in the treatment of anemia of prematurity.
- Proper doses of EPO and iron effectively stimulate neonatal erythropoiesis. However, the efficacy of EPO therapy to substantially diminish the needfar RBC transfusion has not been convincinglydemonstrate, particularly far sick, extremely premature neonates, and recombinant EPO has not been widely accepted as treatment for anemia of prematurity.
- In rare cases, some preparations of EPO have been associated with

the development of anti-EPO antibodies that result in severeanemia.

194. In which condition(s), urethral opening is never at tip of glans penis:

a) Epispadias

b) Hypospadias

c) Urethral stricture

d) Bladder exstrophy

e) All of the above

Correct Answer - A:B:D

Ans. a. Epispadias ; b. Hypospadias ; d. Bladder exstrophy

Hypospadias

- A congenital disorder of the urethra where the urinary opening is not at the usual location on the head of the penis. It is the second-most common birth abnormality of the male reproductive system, affecting about one of every 250 males at birth.

EPISPADIAS

- An epispadias is a *rare* type of congenital malformation in which the urethra opens on the dorsum (the upper aspect) of the penis. It is often part of the condition termed Epispadias-exstrophy of the bladder. Epispadias is a mild form of bladder exstrophy, and in severe cases, exstrophy and epispadias coexist.

195. Ingestion of which of the following mimics scurvy in child:

a) Magnesium

b) Potassium iodide

c) Arsenic

d) Iron

e) Copper

Correct Answer - A
Ans. a. Magnesium

- Hypermagnesemia is most probable answer because it also cause paralysis
- Hypermagnesemia inhibits acetylcholine release at the neuromuscular junction, producing hypotonia, hyporeflexia, and weakness; paralysis occurs at high concentrations. The neuromuscular

196. True about boutonniere deformity:

a) Flexion of proximal interphalangeal joint & hyperextension of distal interphalangeal joint

b) Hyperextension of proximal interphalangeal joint & flexion of distal interphalangeal joint

c) Flexion at proximal interphalangeal & extension at metacarpophalangeal joint

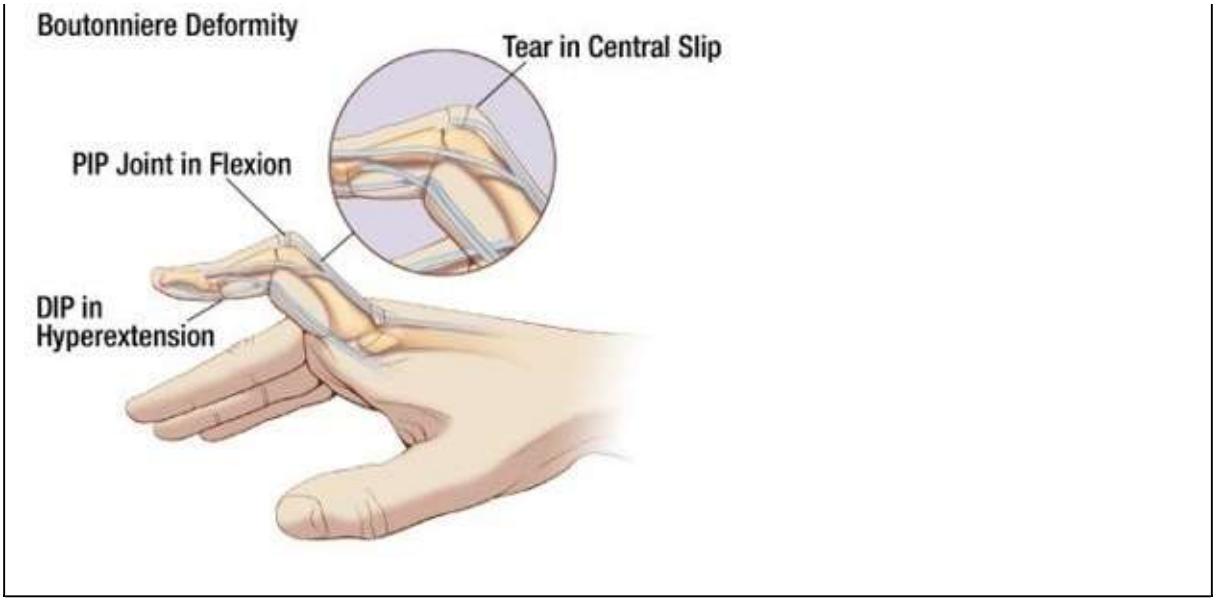
d) Flexion deformity of the proximal interphalangeal joint occur due to tear in central slip of extensor tendon

e) May occur in rheumatoid arthritis

Correct Answer - A:D:E

Ans. a. Flexion of proximal interphalangeal joint & hyperextension of distal interphalangeal joint; d. Flexion deformity of the proximal interphalangeal joint occur due to tear in central slip of extensor tendon ; e. May occur in rheumatoid arthritis

- Boutonniere deformity is a deformed position of the fingers or toes, in which the joint nearest the knuckle (the proximal interphalangeal joint, or PIP) is permanently bent toward the palm while the farthest joint (the distal interphalangeal joint, or DIP) is bent back away (PIP flexion with DIP hyperextension).
- It can be caused by a cut on the top of the finger, which can sever the central slip (tendon) from its attachment to the bone. The tear looks like a buttonhole ("boutonnière" in French). In some cases, the bone actually can pop through the opening.
- Boutonnière deformities may also be caused by **arthritis**.



197. True about ankylosing spondylitis:

a) Romanus lesion may be found

b) If left untreated, spine fusion may occur

c) Predilection of the joints of the axial skeleton

d) Bony erosions do not occur

e) all

Correct Answer - A:B:C

Ans. a. Romanus lesion may be found ;b. If left untreated, spine fusion may occur; c. Predilection of the joints of the axial skeleton

Ankylosing spondylitis (marie-strumpell disease)

- Ankylosing spondylitis is a chronic progressive inflammatory disease of the sacroiliac joints and the axial skeleton.
- rototype of seronegative (absence of rheumatoid factor) spondyloarthropathies.
- **Inflammatory disorder of unknown cause.**
- Usually begins in the second or third decade with a median age of 23, in 5% symptoms begin after 40.
- **Male to female ratio is 2-3 : 1**
- **Strong correlation with HLA-B270-95% of case**
- **9s are positive for HLA - B27.**

Joints involved in ankylosing spondylitis

- Ankylosing spondylitis primarily affects axial skeleton.
- The disease usually begins in the sacro-iliac joints and usually extends upwards to involve the lumbar, thoracic, and often cervical spine.
- In the worst cases the hips or shoulders are also affected. Hip joint

is the most commonly affected peripheral joint.

- Rarely knee (Ebenzar 4th/e 593) and ankle (Apley's 9thle 67) are also involved. Pathology
- Enthesitis i.e. inflammation of the insertion points of tendons, ligaments or joint capsule on bone is one of the hallmarks of this entity of disease.
- Primarily affects axial (spinal) skeleton and sacroiliitis is often the earliest manifestation of A.S..
- Involvement of costovertebral joints frequently occur, leading to diminished chest expansion (normal _ 5 cm)
- Peripheral joints e.g. shoulders, and hips are also involved in 1/3rd patients.
- Extraarticular manifestations like acute anterior uveitis (in 5%); rarely aortic valve disease, carditis and pulmonary fibrosis also occur.
- Pathological changes proceed in three stages?
- Inflammation with granulation tissue formation and erosion of adjacent bone.
- Fibrosis of granulation tissue
- Ossification of the fibrous tissue, leading to ankylosis of the joint.

Radiological features of ankylosing spondylitis

- Radiographic evidence of sacroiliac joint is the most consistent finding in ankylosing spondylitis and is crucial for diagnosis. The findings are :-
- Sclerosis of the articulating surfaces of SI joints
- Widening of the sacroiliac joint space
- Bony ankylosis of the sacroiliac joints
- Calcification of the sacroiliac ligament and sacro-tuberous ligaments
- Evidence of enthesopathy - calcification at the attachment of the muscles, tendons and ligaments, particularly around the pelvis and around the heel.

X-ray of lumbar spine may show :-

- Squaring of vertebrae : The normal anterior concavity of the vertebral body is lost because of calcification of the anterior longitudinal ligament.
- ft Loss of the lumbar lordosis.
- Bridging `osteophytes' (syndesmophytes)
- Bamboo spine appearance

198. True about giant cell sarcoma?

a) Most common age group affected is 20-40year

b) Proximal femur is most common site affected

c) Pulmonary metastasis occur in <3% of cases

d) A locally aggressive tumor

e) May involve sacrum

Correct Answer - A:C:D:E

Ans. a. Most common age group affected is 20-40year ; c. Pulmonary metastasis occur in <3% of cases; d. A locally aggressive tumor; e. May involve sacrum

GCT :

- It perhaps represents the most aggressive benign tumor and threatens the true definition of a benign cancer because benign pulmonary metastasis develop in approximately 1% to 2% of giant cell tumors.

CLINICAL FEATURES

- The tumour is seen commonly in the age group of **20-40 years** i.e., after epiphyseal fusion.
- The bones affected commonly are those around the knee i.e., lower-end of the femur and upper-end of the tibia.
- Lower-end of the radius is another common site.

The tumour is located at the epiphysis.

- It often reaches almost up to the joint surface.
- Common presenting complaints are swelling and vague pain.
- Sometimes, the patient, unaware of the lesion, presents for the first time with a pathological fracture through the lesion.

199. Which of the following is/are true about simple bone cyst:

a) Most commonly occur in adult

b) Commonest site is the upper end of the humerus

c) Cortex may be thin

d) Cause pathological fracture

e) No risk of recurrence after removal

Correct Answer - B:C:D

Ans. b. Commonest site is the upper end of the humerus c. Cortex may be thin d. Cause pathological fracture

Simple Bone Cyst (Also k/a Solitary or Unicameral Cyst)

- It appear during childhood, in metaphysis in one of the long bones & most commonly In proximal humerus or femur .
- It is not a tumour , it tend to heal spontaneously .
- It is seldom seen in adult
- This condition is usually discovered after a pathological fracture or as an incidental finding on X-ray .
- X-ray shows a well demarcated radiolucent area in the metaphysis often extending up to the physeal plate; the cortex nay be thinned & the bone expanded
- Treatment depends on whether the cyst is symptomatic, actively growing or involved in a fracture

200. True about Colle's fracture:

a) Occur at distal end of radius, about 2 cm from distal articular surface

b) Fracture also involves radiocarpal joint

c) Fracture also involves proximal radioulnar joint

d) Cause ulnar deviation

e) Common in women

Correct Answer - A:E

Ans. a. Occur at distal end of radius, about 2 cm from distal articular surface; e. Common in women

Colle's Fracture :

- This is a Fracture at the distal end of the radius, at its corticocancellous junction (about 2 cm from the distal articular surface), in adults, with typical displacement .
- It nearly always results from a fall on an out-stretched hand c It is commonest fracture in people above forty years
- Particularly common in women because of postmenopausal osteoporosis .
- Displacement- dorsal displacement, dorsal tilt (most characteristic), lateral displacement, dorsal tilt, supination & impaction of fragments
- Complication: Dinner fork deformity & Subluxation of the inferior radio-ulnar joint (distal radiocarpal joint)
- It is most common of all fracture in older people.

201. For assessing the injury of meniscus of knee joint, which of the following test is/are done:

a) Apley's test

b) Lachmann test

c) McMurray's test

d) Thessaly test

e) Hamilton ruler test

Correct Answer - A:C:D

Ans. a. Apley's test ; c. McMurray's test; d. Thessaly test

Tests for Meniscal Injuries –

- Apley's grinding test: for meniscus injury
- McMurray's test- This classic test for a torn meniscus is seldom used now that the diagnosis can easily be made by MRI. A positive test is helpful but not pathognomonic a negative test does not exclude a tear .
- Thessaly test: This test has shown a high diagnostic accuracy rate at the level of 95% in detecting meniscal tears

202. A 70 year old lady got compression fracture of L1 vertebra. There is no neurological deficit to this patient. What advise will you give for this Patient:

a) Vitamin D supplementation

b) Do MRI scan

c) Go for screw fixation of L1 vertebra

d) To take Dexamethasone

e) To take Alendronate

Correct Answer - A:E

Ans. a. Vitamin D supplementation; e. To take Alendronate

It is a case of osteoporotic fracture of lumbar spine

Treatment can be divided into medical & preventive .

Medical:

- High protein diet, androgen, estrogen, Vitamin D, fluoride, alendronate, calcitonin, teripratide, denosumab & strontium (both are antiresorptive agent) .
- Orthopaedic treatment: Exercise & Bracing (ASH brace or Taylor brace)

203. Which of the following indicates high risk choriocarcinoma:

a) Initial serum hCG> 40,000 m IU/mL

b) Prior chemotherapy failure

c) Following term pregnancy

d) Metastasis limited to lung and vagina

e) Long duration of disease

Correct Answer - A:B:C:E

Ans. a. Initial serum hCG> 40,000 m IU/mL; b. Prior chemotherapy failure; c. Following term pregnancy e. Long duration of disease

High risk factors which indicates the development of choriocarcinoma at the time of diagnosis of a hydatidiform mole are:

- Maternal age more than 40 years
- Excessive uterine enlargement
- Serum hCG levels more than 100,000mIU/ml
- Theca lutein cysts greater than 6 cm in diameter
- Toxemia, hyperthyroidism and coagulopathy
- Trophoblastic embolization
- Previously treated choriocarcinoma

204. True about mature ovarian teratoma:

a) Recurrence is common after excision

b) Contain hair Teeth, bone & cartilage

c) Mostly benign

d) May be bilateral

e) Torsion is common complication

Correct Answer - B:C:D:E

Ans. b. Contain hair Teeth, bone & cartilage; c. Mostly benign; d. May be bilateral; e. Torsion is common complication

- Teratoma are divided into three categories-
- Mature (benign) e.g. dermoid
- Immature (essentially malignant), e.g. solid teratoma & monodermal or highly specialized e.g. stroma ovarii"

Dermoid Cyst:

- Of all cystic tumours of the ovary 5-10% are dermoid .
- It constitute 97% of all ovarian teratoma .
- It contains sebaceous material & hair & the wall is lined in part by squamous epithelium which contains hair follicle & sebaceous glands
- Teeth, bone, cartilage, thyroid tissue & bronchial mucus membrane are often found in the wall
- Dermoid cysts are innocent ovarian tumours but epidermoid carcinoma occur in l.7% & sarcomatous change have been described
- Dermoids are bilateral in 12-15%
- Torsion is most common (15-20%) & rupture is an uncommon (1%) complication

205. Poor prognostic factors for heart disease in pregnancy is/are:

a) EF 30 mm Hg by echocardiography

b) Prior cardiac failure, arrhythmia or transient ischemic attack

c) Aortic valve area<1.5 cm^2

d) Class III and Class IV NYHA patients

e) Peak LV outflow tract gradient >30 mm Hg by echocardiography

Correct Answer - B:C:D:E

Ans. b. Prior cardiac failure, arrhythmia or transient ischemic attack; c. Aortic valve area<1.5 cm^2; d. Class III and Class IV NYHA patients; e. Peak LV outflow tract gradient >30 mm Hg by echocardiography

Heart diseases in which pregnancy with poor prognosis:

- Marfan syndrome
- Aortic disease with dilatation of > 50mm with bicuspid aortic valve.
- Coarctation of aorta
- Eisenmenger syndrome
- Severe fixed obstructive lesions (aortic stenosis, mitral stenosis, pulmonic stenosis, hypertrophic obstructive cardiomyopathy)
- NYHA class 3 & 4 heart diseases (severe systemic ventricular dysfunction/CHF)
- Ejection fraction < 30-40%
- Previous peripartum cardiomyopathy with any residual impairment of LV function
- Pulmonary arterial hypertension of any cause

- Severe cyanosis

206. True about abdominal hysterectomy:

a) Preferred for prolapse in postmenopausal woman

b) Ureter injury can be avoided by opening the retroperitoneum & identifying ureter

c) Postoperative complications are less than vaginal hysterectomy

d) Preferred in obese patient

e) Enables wide exploration of abdomen

Correct Answer - B:E

Ans. b. Ureter injury can be avoided by opening the retroperitoneum & identifying ureter; e. Enables wide exploration of abdomen

Abdominal Hysterectomy (AH)

- Required for endometriosis and large fibroids
- Results in greatest mean blood loss
- Injury to ureter is one of the most formidable complication of hysterectomy. Most ureteral injuries can be avoided by opening the retroperitoneum to directly identifying the ureter
- Has the highest incidence of febrile morbidity
- Posterior wall of abdominal wound infection (obviously)
- Longest hospitalisation
- Enables wide exploration of abdomen
- And slowest to recover

Factors suggesting preferred route:

- Significant uterine enlargement
- Inadequate transvaginal access
- Adnexal pathology & fixation
- Obliteration of pouch of Douglas(endometriosis)

207. True about Copper containing IUCD:

a) Increased copper level in milk

b) Increased risk of ectopic pregnancy

c) Increased bleeding in menstruation with pain

d) Provide protection against PID

e) Irregular menses

Correct Answer - B:C:E

Ans. b. Increased risk of ectopic pregnancy; c. Increased bleeding in menstruation with pain; e. Irregular menses

Copper containing IUCD acts locally in uterus, so no affect on Cu level in milk

Complication of IUCD:

- Dysmenorrhoea
- Menstrual dysfunction: prolonged & heavy bleeding
- PID: 2-10 times greater among IUD users .
- Should pregnancy occur with a device in situ, there is risk of ectopic pregnancy (0.02%)

208. True about Progestogen only pill:

a) It is taken daily on the same time

b) Higher failure rate than COC

c) Fertility return to normal after discontinuation without any delay

d) Suited for lactating women lactating women

e) Ectopic pregnancy risk are same as COC

Correct Answer - A:B:D

Ans. a. It is taken daily on the same time ; b. Higher failure rate than COC; d. Suited for lactating women lactating women

Progestogen only Pill (POP) /Minipil

- Does not have some major side effects of combined pills & well suited for lactating women; some progestogens, in fact, increase milk secretion .
- Side-effect: weight gain, irregular menstrual bleeding, depression, breast cancer, thromboembolism .
- Advantage: Lactating women, women over 35 years, those with focal migraine, those intolerant to estrogen or oestrogen contraindicated, diabetic, hypertensive, sickle cell anaemia
- As regards to return of fertility, faster than COC users
- Contraindication: C/I to POP are previous are previous ectopic pregnancy, ovarian cyst, breast & genital cancer, abnormal vaginal bleeding active liver & arterial disease, porphyria, liver tumour.

209. Markers of malignant ovarian tumour is/are:

a) Inhibin

b) Beta human chorionic gonadotropin

c) Alpha fetoprotein (AFP)

d) Pax7

e) NB/70K

Correct Answer - A:B:C:E

Ans. a. Inhibin; b. Beta human chorionic gonadotropin; c. Alpha fetoprotein (AFP); e. NB/70K

Tumour Marker in Epithelial Ovarian Cancer :

- CA-125: screening of epithelial cancer ofovary
- Macrophage colony stimulating factor (M-CSF)
- OVXI
- HER-2/Neu
- Inhibin
- hCG :ovarian choriocarcinoma
- BRCAI & BRCA2 (Serous carcinoma)
- MLHI, MSH2 & MSH6 (HNPCC associated ovarian cancer)
- AFP, hCG & CEA-Germ cell tumour
- Tumour marker- for embryonal carcinoma (AFB hCG)
- Endodermal sinus tumour (AFP)
- Choriocarcinoma (hCG)
- Germ cell tumor-AFP, hCG, NB/70K, placental alkaline phosphatase & lactate dehydrogenase.

210. A 30-year lady delivered a baby. Which of the following statement(s) is not true about postpartum contraception:

a) OCP is not given because it can causes venous thrombosis & have adverse impact on milk production

b) POP is contraceptive of choice for lactating women

c) POP should be started after 6 week

d) LNG-IUD is good in lactating women

e) For non-lactating women, ovulation not occurs until 12 week

Correct Answer - E

Ans. e. For non-lactating women, ovulation not occurs until 12 week

- Non-lactating (Postpartum): Contraceptive practice should be started after 3 week. Pill is good; IUD is equally effective alternative
- POP is safe in lactating women & can be started 6 weeks onwards. LNG is safer than desogestrel & gestagen from thrombosis point of view.
- Intramuscular & progestogen implant can be prescribed 6 week after deliver
- IUCD insertion within 10 min of expulsion of placenta or within 24 hr of delivery is proved safe & effective
- COC are contraindicated in the puerperium, both because of its adverse on milk secretion in a lactating women & increased risk of thromboembolic episode. COC can be prescribed to a nonlactating woman 3 weeks after delivery.

211. True about placenta accreta:

a) Incidence is about 1 in 2500 Pregnancy

b) Incidence increased in last decade

c) Absence of decidua basalis

d) Fibrinoid layer deficient

e) More common in primi

Correct Answer - B:C:D

Ans. b. Incidence increased in last decade; c. Absence of decidua basalis; d. Fibrinoid layer deficient

- In placenta accreta decidua basalis is absent and placental villi are attached to the myometrium.

Risk factors:

- Patients with a history of uterine surgery are at greatest risk of developing an accreta.
- In fact, those with a prior cesarean section carry a 25% risk.
- placenta previa in the presence of a uterine scar
- Others - prior uterine surgery, endometrial ablation, Asherman syndrome, uterine leiomyomata,

212. True about low grade squamous intraepithelial lesions:

a) Confined to the lower 1/3 of the epithelium of cervix

b) All cases are treated by cryotherapy

c) 30% progress to invasive cancer in 10 years

d) It is kept under observation with PAP smear or HPV DNA tests

e) None of the above

Correct Answer - A:D

Ans.(A) Confined to the lower 1/3 of the epithelium of cervix & (d) It is kept under observation with PAP smear or HPV DNA tests

- CIN-I (Low grade squamous intraepithelial lesions): It is often seen with inflammatory conditions like trichomoniasis & HP & is reversible following treatment.
- The undifferentiated cells are confined to the lower 1/3 of the epithelium.
- Women with CIN I, confirmed on biopsy is kept under observation with pap smear follow up at 6 months or HPV DNA tests at 12 month. If both tests are negative routine recall (screening) is done. If these tests are Persistent then treat it as HSIL

213. True about endometriosis:

a) Laparoscopy is gold standard for diagnosis

b) COC is used to relieve mild Pain

c) GnRH antagonist is used to relieve severe pain

d) Can be managed expectantly in asymptomatic cases

e) None of the above

Correct Answer - A:B:D

Ans. (A)Laparoscopy is gold standard for diagnosis; (B). COC is used to relieve mild Pain; (D) Can be managed expectantly in asymptomatic cases

- Friends this is the most often asked question on endometriosis. It is worth while to know a few details on this topic.
- Empirical treatment : is for pain presumed to be due to endometriosis. (in absence of definitive diagnosis) and includes :—

1. Counselling
2. Analgesia
3. Nutritional therapy
4. Progestin or OCP's

- Analgesia : Studies have shown NSAID's except niflumic acid are more effective in chronic pain relief due to endometriosis or dysmenorrhea suspected to be due to endometriosis.

Hormonal medical treatment :

- Basis of management : Since estrogen is known to stimulate the growth of endometriosis, hormonal therapy has been designed to suppress estrogen synthesis, thereby inducing atrophy of ectopic endometrial implants or interrupting the cycle of stimulation and bleeding.

- Indication : — Mild pelvic endometriosis in young women.°
- Treatment of residual and recurrent disease following conservative surgery.

214. Which is true regarding premenstrual dysphoric disorder (PMDD):

a) Severe depressed mood

b) Pain ceases at onset of menses

c) Depression may continue after menstrual period

d) Antidepressant is given for treatment

e) Pain ceases after menses is over

Correct Answer - A:D:E

Ans.(A) Severe depressed mood ;(D) Antidepressant is given for treatment; (E) Pain ceases after menses is over

- Premenstrual syndrome (PMS) & Premenstrual dysphoric disorder (PMDD)
- PMS is often noticed just prior to menstruation (last 7-10 days of the menstrual cycle)

It should fulfil the following criteria :

- No related to any organic lesion
- Regularly occurring during the luteal phase of each cycle .
- Symptom must be severe enough to disturb the life style of women or she requires medical help .
- Symptom free period during rest of the cycle
- When these symptoms disrupt daily functioning they are grouped under PMDD
- More common in women aged 30-35 yr.
- It may related to childbirth or a disturbing life event
- There are no pelvic findings except features of pelvic congestion .
- 5% suffer from severe symptoms which influence daily activities

- SSRI 6 Noradrenaline Reuptake inhibitors (SNRI) are found to be very effective

215. True about diagnosis of gestational diabetes mellitus (GDM):

a) If post prandial sugar >200 mg/dl, then overt diabetes

b) If fasting sugar is 100-120 mg/dl, then overt diabetes

c) If fasting sugar is >126 mg/dl, then overt diabetes

d) If Postprandial sugar is <140 mg/dl , then IGT

e) If fasting sugar is 110-125 mg/dl, then IGT

Correct Answer - A:C:E

Ans. (A) If post prandial sugar >200 mg/dl, then overt diabetes ; (C) If fasting sugar is >126 mg/dl, then overt diabetes;(E)If fasting sugar is 110-125 mg/dl, then IGT

OVERT DIABETES:

- Women with a random plasma glucose level > 200 mg/dL + classic signs and symptoms such as polydipsia, polyuria, and unexplained weight loss or a fasting glucose exceeding 125 mg/dL.
- The diagnostic cutoff value for overt diabetes is a fasting plasma glucose of 126 mg/dL or higher.

IGT:

Criteria for diagnosis of impaired glucose tolerance & diabetes with 75 gm oral glucose:

- For fasting Its IGT if > 100&< 126
- For 2 hour post glucose its IGT if >140 &<200

216. True about primary amenorrhoea:

a) In Rokitansky-Kuster-Hauser syndrome, FSH is normal

b) In Turner syndrome, FSH is decreased

c) In Kallman syndrome, FSH is increased

d) In Kallman syndrome, LH is reduced

e) None

Correct Answer - A:D

Ans. (A) In Rokitansky-Kuster-Hauser syndrome, FSH is normal and (D) In Kallman syndrome, LH is reduced

ASSOCIATED CONDITION:

- Turner's syndrome
- Congenital adrenal hyperplasia (CAH)
- Androgen insensitivity syndrome
- Testicular feminizationsyndrome
- PCOS
- Müllerian agenesis/Utero-vaginal Agenesis/Mayer-Rokitansky-Kuster-Hauser syndrome

DIAGNOSIS:

- Buccal smear and an examination of the polymorphonuclear leucocytes to determine if chromatin positive (probably XX) or chromatin negative (probably XO or XY); in other cases a full chromosome analysis may be needed to exclude mosaicism and AIS.
- Hormonal investigations should include LH, FSH,oestradiol and testosterone levels.
- Ultrasound will help determine the presence, state and size of the ovaries and any follicular activity.

217. In assisted breech delivery, after coming head is delivered by:

a) Head delivered spontaneously

b) Pinardmanoeuvre

c) Modified Mauriceau-Smellie-Veit technique

d) Special forcep for deliveringhead is used

e) Prague manoeuvre

Correct Answer - C:D:E

Ans. (C) Modified Mauriceau-Smellie-Veittechnique ; (D) Special forcep for delivering head is used ; (E) Prague manoeuvre

Delivery of the Aftercoming head of Breech

Various method of safe delivery of after coming head

- Burns-Marshall method : Forcep delivery (Piper forcep, Das forcep, Neville Barne'sforcep)
- Malar flexion & shoulder traction (modified MauriceauSmellie-Veit technique)

Arrest of after Coming Head

- Burns-Marshall method
- Modified Mauriceau-Smellie-Veit technique
- Brachtmaneuver
- Wigand-Martin maneuver
- Praguemaneuver
- Forcep application
- Duhrssen'sincision
- Craniotomy

218. Which of the following is/are ultrasonographic finding of twins:

a) Type of twin pregnancy can be diagnosed in first trimester

b) Lambda sign indicates dichorionicity

c) T sign suggests monochorionic diamniotic pregnancy

d) Monozygotic twins are more common

e) All

Correct Answer - A:B:C

Ans. a. Type of twin pregnancy can be diagnosed in first trimester; b. Lambda sign indicates dichorionicity; c. T sign suggests monochorionic diamniotic pregnancy

Sonography

- Separate gestational sacs
- Confirmation of diagnosis as early as 10th week of pregnancy
- Variability of fetuses, vanishing twin in second trimester
- Chorionicity **(twin peak sign or lamda sign**)(10–13 weeks of gestation)
- Thick septum in **dichorionic twins** at base of the membrane with triangular projection is known as lambda or twin peak sign
- Pregnancy dating, Fetal anomalies
- Fetal growth monitoring, Presentation and lie of fetuses
- Twin transfusion localization, Amniotic fluid volume

219. Which of the following is/are used in psoriasis:

a) High dose oral dexamethasone

b) Methotrexate

c) TNF-alpha inhibitor

d) Acitretin

e) Narrow band UVB

Correct Answer - B:C:D
Ans. B,Methotrexate C,TNF-alpha inhibitor D,Acitretin
Ref;. Neena Khanna 5th/54-59; Hartison 19th/348; Roxburg 17th/138- 42).

- Systemic corticosteroids are only indicated for generalized pustular psoriasis in pregnancy (impetigo herpetiformis).
- Biological response modifiers used to treat psoriasis include: T cell inhibitors (alefacept, adalimumab, itolizumab).
- Oral glucocorticoids should not be used in the treatment of psoriasis due to the potential for developing life-threatening pustular Psoriasis when therapy is discontinued.

220. True about skin:

a) Epidermis is highly vascular

b) Melanocyte is derived from neural crest

c) Sebaecous gland- holocrine & absent in palm

d) Apocrine gland presents in axilla & groin

e) Hiraadenitis suppurita is infection of apocrine gland

Correct Answer - B:C:D:E

Ans: B,Melanocyte is derived from neural crest C,Sebaecous gland- holocrine & absent in palm D,Apocrine gland presents in axilla & groin & E,Hiraadenitis suppurita is infection of apocrine gland

[Ref Neena Khanna Sth/ 119, 451-53; Harrison 19th/1099; Roxburgh tTth/ 4-11; General Anatomy by BD Chaurasia 5th/254-60

- Hidradenitis suppurativa (Synonym- apocrine acne): Axillary apocrine sweat gland infection
- Sebaceous glands are holocrine in nature,
- The pigment cells (melanocyte) of the skin are derived from neural crest .
- Apocrine sweat glands drains directly into hairfollicles in the axillae & groins
- Sebaceous gland are located throughout the skin except on palms & soles.
- Glands made up of acini of lipid containing cells, which secrete sebum as a holocrine secretion.
- Eccrine sweat glands present all over body, especially on palms, soles & in axillae. Human have 2-24 million eccrine sweat glands

221. Acneiform eruption is/are side effect of :

a) Tetracycline

b) Phenytoin

c) Isoniazid

d) Steroid

e) Potassium iodide

Correct Answer - B:C:D:E

Ans: B,Phenytoin C,Isoniazid D,Steroid & E,Potassium iodide

[Ref Neena Khanna 5th/125; Harrison 19th/356; Harrison 14th/425; Roxbug 17th/Ea-55

Drug-induced Acneiform Eruptions:

- Steroids (corticosteroids, androgens, anabolic steroids), oral antieMEtics, anti tubercular drugs, anticonvulsants, halides (iodides. bromides).
- Trunk especially back, face nay be involved.
- Lesions are monomorPhic, consisting of papules sometimes pustule

222. Cicatrical alopecia is/are seen in:

a) Lichen planopilaris

b) Discoid lupus erythematous

c) Andogen efflyum

d) Lichen planus

e) Trichotillomania

Correct Answer - A:B:D

Ans. A.Lichen planopilaris B,Discoid lupus erythematous & D,Lichen planus

[Ref Neena Khanna 5th/141; Hanison 19th/355; Roxburg 17th/ 270]

- Thichotillomania (compulsive hair-pulling) is characterized by noticeable hair loss caused by person! persistent & recurrent failure to resist impulse to pull out hairs.

Nonscarring alopecia

A. Primary cutaneous disorders

I.Telogen effluvium

- Androgenetic alopecia
- Alopecia areata
- Tinea capitis
- Traumatic alopecia

B. Drugs

C. Systemic diseases

- Systemic lupus erythematosus
- Secondary syphilis
- Hypothyroidism
- Hyperthyroidism
- Hypopituitarism

- Deficiencies of protein, iron, biotin, and zinc

II. Scarring alopecia

A. Primary cutaneous disorders

- Cutaneous lupus (chronic discoid lesions)
- Lichen planus
- Central centrifugal cicatricial alopecia
- Folliculitis decalvans
- Linear scleroderma (morphea)

B. Systemic diseases

- Discoid lesions in the setting of systemic lupus erythematosus
- Sarcoidosis
- Cutaneous metastases

223. Wavelength of UVB is :

a) 250-280 nm

b) 280-320 nm

c) 320-400 nm

d) 400-700 nm

e) 100-200 nm

Correct Answer - B

Ans. B. 280-320 nm

- The wavelength found most effective in treating skin disease with phototherapy is UVB with warden gfh of 311 (+- 2nm) (narrow band UVB, NBUVB).
- The wavelengths between 4(N and 7AO nm are visible to the human eye.

224. Which of the following statement(s) is/are true about physical urticaria

a) Cholinergic urticarial is precipitated by cold

b) Solar urticaria is skin sign of erythropoietic protoporphyria

c) Dermatographism is an example

d) Cold urticaria is precipitated by emotion

e) None

Correct Answer - B:C

Ans. B,Solar urticaria is skin sign of erythropoietic protoporphyria & C,Dermatographism is an example

[Ref Neena Khanna Sth/189; Harrison 19th/i6i; Roxburg 17th/74-74).

Physical Urticarias:

- Patients with dermatographism exhibit linear wheals following minor pressure or scratching of the skin.
- Solar urticaria characteristically occurs within minutes of sun exposure and is a skin sign of one systemic disease.
- Cold urticaria is precipitated by exposure to the cold, and therefore exposed areas are usually affected.
- Cholinergic urticaria is precipitated by heat, exercise, emotion and is characterized by small wheals with relatively large flares.

225. True about tracheostomy:

a) Tracheostomy tube may closed by mucous secretion & crust formation

b) Copious secretion from tube is always due pulmonary infection

c) X-ray chest should be done for confirmation in every case

d) Improper positioning may lead to fatal haemorrhage

e) Displacing of tube after 2 week is medical emergency

Correct Answer - A:D

Ans. A,Tracheostomy tube may closed by mucous secretion & crust formation D,Improper positioning may lead to fatal haemorrhage

Ref Schwartz 9th/ 59- I qhttp:/ /www.nurses.com/ ; p L.Dhingra 6th/ 3 I 6 - 20;Ajay Yadav 5th/48-49; Millo Anaesthaia Zth/232& IBit-72

- Reintubation in the first 36 hours after tracheostomy Is on emergency.
- Tracheostomy tube should not be disturbed For the first 48-72 hr, but thereafter the tube is changed daily & cleaned at regular interval.
- Recent study do not support obtaining a routine post tracheostomy chest X-ray.
- The most dramatic complication is tracheo-innominate artery fistula (TIAF).
- Palpable tube pulsation suggest impending erosion of an artery,
- Tracheal deviation may signal abdomen bleeding

226. True about desflurane:

a) Boiling point is <230C

b) Chemically it is Flourinated methyl ethylether

c) It increases the effect of muscle relaxant

d) Can be given safely to patient susceptible to malignant hyperthermia

e) More potent than isoflurane

Correct Answer - A:B:C

Ans.A,Boiling point is <230C B,Chemically it is Flourinated methyl ethylether C,It increases the effect of muscle relaxant

[Ref Ajey Yadav Sth/ 82; Morgan Sth/170 & 71)

Desflurane:

- Fluorinated methyl ethyl ether
- Boiling point is less than 20C.
- Produces maximum muscle relaxation among the agents.
- 5 times less potent than isoflurane.
- Loss of potency (the MAC of desflurane is 5 times higher than isoflurane)
- Immune mediated hepatitis a rare occurrence.
- has the lowest blood: gas solubility of the potent volatile anesthetics

227. Drug(s) not given as transdermal patch:

a) Fentanyl

b) Diclofenac

c) Morphine

d) Clonidine

e) Buprenorphine

Correct Answer - B:C
Ans.B,Diclofenac & C,Morphine
[Ref: KDT 7th/476

- Transdermal fentanyl (Durogesic) has become available for use in cancer/terminal illness.
- Butrans skin patches contain buprenorphine an opioid pain medication.
- Clonidine transdermal delivery (patch) systems have been available since the 1980

228. Endotracheal intubation is/are assessed by:

a) Mallampati grading

b) ASA physical status grading

c) Thyromental distance

d) Teeth arrangement

e) None

Correct Answer - A:C:D

Ans. A,Mallampati grading C,Thyromental distance & D,Teeth arrangement

Ref: Manipal Surgery 4th/ 1072-73; Ajay Yadav 5th/53' 124; Morgan 5th/ 312-13

- ASA physical status grading is for general health status of patient (not for assessing intubation)

Assessment of Difficult Intubation:

- Mallampati grading: It is done to assess mouth oPening
- Thyromental distance (distance b/w thyroid notch to mental prominence with fully extended neck)
- Mentohyoid distance: normal > 5 cm
- Assessment of TM joint function: Inter incisor gap (mouth opening) should be at least 5 cm (2 fingerbreadth)
- Neck Movement

229. True about photodynamic therapy of head & *neck* cancer:

a) Tumour sensitizer is used

b) Singlet oxygen is produced in tumour cell

c) After therapy, radiosensitizer may remain with tumour cell

d) Hemoporphyrin given as radiosensitizer

e) Photosensitivity is a side-effect after therapy

Correct Answer - A:B:C:E

Ans. A,Tumour sensitizer is used B,Singlet oxygen is produced in tumour cell C,After therapy, radiosensitizer may remain with tumour cell & E,Photosensitivity is a side-effect after therapy

- Ref Sabiston 236; Ballenger\ Otorhinolaryngology 16th/1324
- **Photodynamic therapy** is a new treatment that allows destruction of cancer cells and has recently been expanded to the eradication of metaplastic cells,
- It begins with the administration of a target specific photosensitizer that is eventually concentrated in the target tissue.
- The photosensitizing agent is then activated with a wavelength-specific light energy source,which leads to generation of free radicals cytotoxic to the target tissue.
- Applications reported in the literature include treating early radiographically detected, non-small cell lung cancer, pancreatic cancer squamous cell and basal cell carcinoma of the skin, recurrent superficial bladder cancer, Chest wall involvement from breast cancer and even chest wall recurrence of breast cancer.
- Given systemically, these drugs are preferentially taken up in tumor

cells, rendering them more sensitive to light-mediated cell killing than their surrounding tissues.

230. Which of the following cell(s) are less radiosensitive:

a) Osteocyte

b) Erythroblasts

c) Chondrocyte

d) Spermatogonia

e) Lymphocyte

Correct Answer - A:C
Ans. A, Osteocyte& C,Chondrocyte
Ref: Sumer Sethi 6th/174; Radiology & Imaging by Thayalan Ist/310

- Most radiosensitive blood cell- Lymphocyte
- Least radiosensitive blood cell- platelet
- Most radiosensitive tissue of body- Bone marrow
- Least radiosensitive tissttc of body -Nervous tissue/brain
- High Radiosensitive - Lymphoid organs, bone marrow blood, testes, ovaries, intestines
- Low Radiosensitive - Muscle, brain, spinal cord

231. All are true about gamma knife except:

a) Focussed radiation is delivered to tumor

b) Provide equal exposure to surrounding healthy tissue

c) It is a type of stereotactic surgery

d) Primarily used for small brain tumours

e) Uses Co-60 as source of radiation

Correct Answer - B

Ans. B.Provide equal exposure to surrounding healthy tissue

Ref: Sumer Sethi 6th/196-97

Stereotactic RadiosurgerY:

- Goal of stereotactic radiosurgery is to deliver enough radiation to destroy or stop the gtorvfh of a lesion previously defined by specialized imaging techniques without adversely affecting surrounding tissue.

Gamma Knife Radiosurgery:

- Gamma knife radiosurgery k a type of radiation therapy used to treat tumors and other abnormalities in the brain.
- Close to 200 tiny bearns of radiation on a tumor.

Gamma knife:

- The Gamma Knife is an advanced radiation treatment for adults and children with small to medium brain tumors, abnormal blood vessel formations called artetiotenotrs malformations, epilepsy, trigeminal neuralgia, a nerve .ott-ditiott that causes chronic pain, and other neurological conditions.
- The'blades" of the GammaKnife" are the beams of gamma radiation programmed to target the lesion at the point where they intersect.
- Gamma Knife enables patients to undergo a non-invasive form of

brain surgery without surgical risks, a long hospital stay or subsequent rehabilitation.

232. Gamma radiation is/are produced by:

a) Co-60

b) Caesium-137

c) P-32

d) Iridium-192

e) Strontium-90

Correct Answer - A:B:D

Ans. A,Co-60 B,Caesium-137 & D,Iridium-192

[Ref: Sumer Sethi 6th/177, 184; Radiology 6 Imaging by Thayalan lst/17,278

Radiation emitted - Radionuclide

Gamma rays -

- Radium-226
- Caesium-137
- Cobalt-60
- iridium-192
- Gold-198
- Samarium -153

Beta rays:

- Strontium-90
- Yttrium-90
- Phosphorus-32
- Rhenium-188

Combination of gamma and beta rays:

- Rhenium-186
- iodine-131

233. Precise FNAC can be obtained by using :

a) USG

b) CT

c) Endoscopic USG

d) MRI

e) Plain-Xray

Correct Answer - A

Ans. A. USG

Ref Dahnert Radiology Manual 7th/368;Harshmohan 7th/902-l3;Robbins 9th/333

Radiological imaging Aids for FNAC:

- Non-palpable lesion require some form of localization by radiological aids for FNAC to be carried out.
- Plain X-ray films are usually adequate for lesions within bones & for some lesions within the chest
- FNAC of chest may also be attempted under image amplified fluoroscopy which allows visualization of needle placement on the television monitor
- CT guidance is also used for lesions within the chest dy Abdomen.
- The most versatile radiological aid is ultrasonographic guidance (USG) which allow direct visualization oF needle placement in real time & is free from radiation hazards.
- It is an extremely valuable aid for FNAC of thyroid nodules, soft tissue masses, intra-abdominal lesions dt for intrathoracic which about the chest wall, but no help in deep intrathoracic lesions or in bony lesions
- Precision of USG and CT scan is comparable for guidance in FNAC

from thoracic mass lesions

234. True about signal characteristic of CSF on MRI & FLAIR:

a) Hyperintense on T1WI

b) Hypointense on TI WI

c) Hyperintense on T2WI

d) FLAIR reduces CSF signal

e) FLAIR increases CSF signal

Correct Answer - B:C:D

Ans. B,Hypointense on TI WI C,Hyperintense on T2WI & D,FLAIR reduces CSF signal

Ref: Sumer Sethi 6th/15; Radiology 6 Imagingby Thayalan Ist/386-89]

MRI Signal Characteristic

- CSF: Hypointense on TIWI, hyperintense on T2W1.
- Grey/White matter: Grey matter is grey & white matter s white n T1W1 & relationship is reversed on T2W1.
- The fluid,-attenuated inversion-recovery (FLAIR) uses longer T1 (2400ms) & TR (7000ms) to reduce the signal level of CSF & other tissue with long Tl relaxation constant.
- It reduces CSF signal & other water-bound anatomy in MR image by using a Tl detected at or near the bounce point of CSF.
- FLAIR MRI techniques consist of an inversion recovery pulse to null the signal from CSF and a long echo time to produce a heavily T2-weighted sequence.

235. Contrast agent which are not used for CT scan:

a) Water

b) CO2

c) Barium compounds

d) Iodinated high-osmolality contrast media

e) Polyethylene glycol

Correct Answer - B

Ans. B. CO2

Ref Sumer Sethi 6th/20; Radiology 6 Imaging by Thayalan159; Dahnert Radiology Manual 7th/1147-48

- Radiocontrast agents are a type of medical contrast medium used to improve the visibility of internal bodily structures in X-ray-based imaging techniques such as computed tomography (CT), radiography & fluoroscopy.
- Radiocontrast agents are typically iodine or barium compounds.
- When an agent improves visibility of an area, it is called "contrast enhancing
- Gadolinium is a key component of the contrast material most often used in magnetic resonance (MR) exams.
- Saline (salt water) and air are also used as contrast materials in imaging exams.
- Barium sulfate contrast media continue to be the preferred agents for opacification of the gastrointestinal tract for conventional fluoroscopic examinations
- The current use of iodinated water-soluble contrast media is

primarily limited to select situations

- Two commercid water-soluble iodinated high-osmolality contrast media (HOCMs) specifically designed for enteric opacification are in common use. Gastrografin and, Gastroview

236. True about USG:

a) Uses most commonly frequency of 20-50 MHz for diagnostic ultrasound

b) Work on principle of piezoelectric effect

c) Ultrasonic waves only penetrates gas , not liquid

d) Gas filled microbubbles are used as contrast media

e) None

Correct Answer - B:D

Ans. B.Work on principle of piezoelectric effect & D.Gas filled microbubbles are used as contrast media

Ref Sumer Sethi 6th/9-10; Radiology & Imaging by Thayalan 334-40

Contrast-enhanced Ultrasound (CEUS):

- Application of ultrasound contrast medium to traditional medical sonography.
- Commercially available contrast media are gx-filled (air or perfluorocarbon) microbubbles that are administered intravenously to the sysfernic circulation.
- Microbubbles have a high degree of echogenicity (the ability of an object to reflect ultrasound waves)

237. True about finding of pleural effusion:

a) CT scan can distinguish between a pleural effusion and a pleural empyema

b) USG can detect very small amount of fluid

c) X-ray- homogenous opacity with obliteration of CP angle

d) MRI cannot differentiate malignant from benign pleural disease

e) MRI can differentiate malignant from benign pleural disease

Correct Answer - A:B:C:E

Ans., A,CT scan can distinguish between a pleural effusion and a pleural empyema B,USG can detect very small amount of fluid C X-ray- homogenous opacity with obliteration of CP angle& EMRI can differentiate malignant from benign pleural disease

Ref: Sumer Sethi 6th/49; Dahnert Radiology Manual 7th/ 446; WHO Manual of Radiographic Interpretation 2002/ 4 I _42

Imaging criteria are:

Homogenous density

- Density in dependent portion
- Upright: Costophrenic angle in pA view
- Lateral yiew: Anterior and posterior portions ofgutter
- Lateral decubitus position: Along sides
- Supine position: Along posteriorly, giving diffuse haziness on the side of effusion

Silhouette of upper limit of density

- Upper margin high in axilla in pA view (yellow arrows)
- Upper margin high anteriorly and posteriorly in lateral view
- This is just an illusion

- Loss of silhouette: In the images below note lack of identifiable left diaphragm before and visible diaphragm after clearance of fluid (Silhouette sign principle)
- Mediastinal shift

Pleural Effusion- X-Ray

- First 300 ml not visualized on PA yiew
- Lateral decubitus views may detect as little as 25 ml

Pleural effusion on CT scan:

- CT scanning is excellent at detecting small amounts of fluid and is also often able to identify underlying intrathoracic causes (e.9. malignant pleural deposits or primary lung neoplasms) as well as subdiaphragmatic diseases 1e.g. sub diaphragmatic abscess) .

238. True about schizophrenia:

a) Q-EEG finding is one of diagnostic criteria for schizophrenia

b) Psychosurgery can be done for some resistant cases

c) Family history of schizophrenia is poor prognosis

d) Depression may be found

e) Onset only after 40 year of age

Correct Answer - B:C:D

Ans. B,Psychosurgery can be done for some resistant cases C,Family history of schizophrenia is poor prognosis & D,Depression may be found

[Ref: Ahuja 7th/54-68; Synopsis of Psychiatry by Kaplan & Sadock 11th/300-32s

Schizophrenia:

- Equally prevalent in males & females.
- Onset - Before 25 yrs. Peak age - 10 to 20 yrs (males) & 25 to 35 yrs.(Females)
- EEG recording shows decreased alpha activity, increased theta & delta activity.
- Quantitative EEG (qEEG) is the analysis of the digitized EEG, and in lay terms this sometimes is also called 'Brain Mapping'.
- Psychosurgery is not routinely indicated.
- When used, the treatment of choice is limbic leucotomy in some cases with seyere & very prominent depression, anxiety or obsessional symptoms

239. Which of the following is/are not side-effect of lithium:

a) Seizure

b) Hyporeflexia

c) Nephrogenic diabetes insipidus

d) Alopecia

e) Tremor

Correct Answer - B
Ans. B.Hyporeflexia
Ref: Synopsis of psychiatry by Kaplan 6 Sadock 11th/985-88; KDT 7th/449; pharmacology by Satoskar 2ith/225
Lithium:

- Mild toxicity: GI disturbances, drowsiness, muscular weakness, alopecia, allergic reaction, blurred vision, glycosuria, polyuria & weight gain.
- Chronic administration: goiter formation, hypothyroidism & ECG changes
- Embryotoxicity: Li is embryotoxic & increases the risk of Ebstein's anomaly
- Hyper-reflexia

invalid question id