1. Posterior interosseous nerve supplies all except:

a) Extensor carpi radialis longus

b) Extensor carpi ulnaris

c) Extensor digitorum

d) Extensor indices

e) Flexor carpi ulnaris

Correct Answer - A:E

Ans. (a) Extensor carpi radialis longus, (e) Flexor carpi ulnaris

- The posterior interosseous nerve is a pure motor nerve and innervates supinator & extensor carpi radialis.

It supplies:?

1. Extensor carpi ulnaris
2. Extensor digitorum
3. Extensor digitiminimi
4. Abductor pollicis longus
5. Extensor pollicis longus and brevis
6. Extensor indicis

2. Muscle's of anterior compartment of leg is/ are:

a) Peroneus tertius

b) Peroneus brevis

c) Peroneuslongus

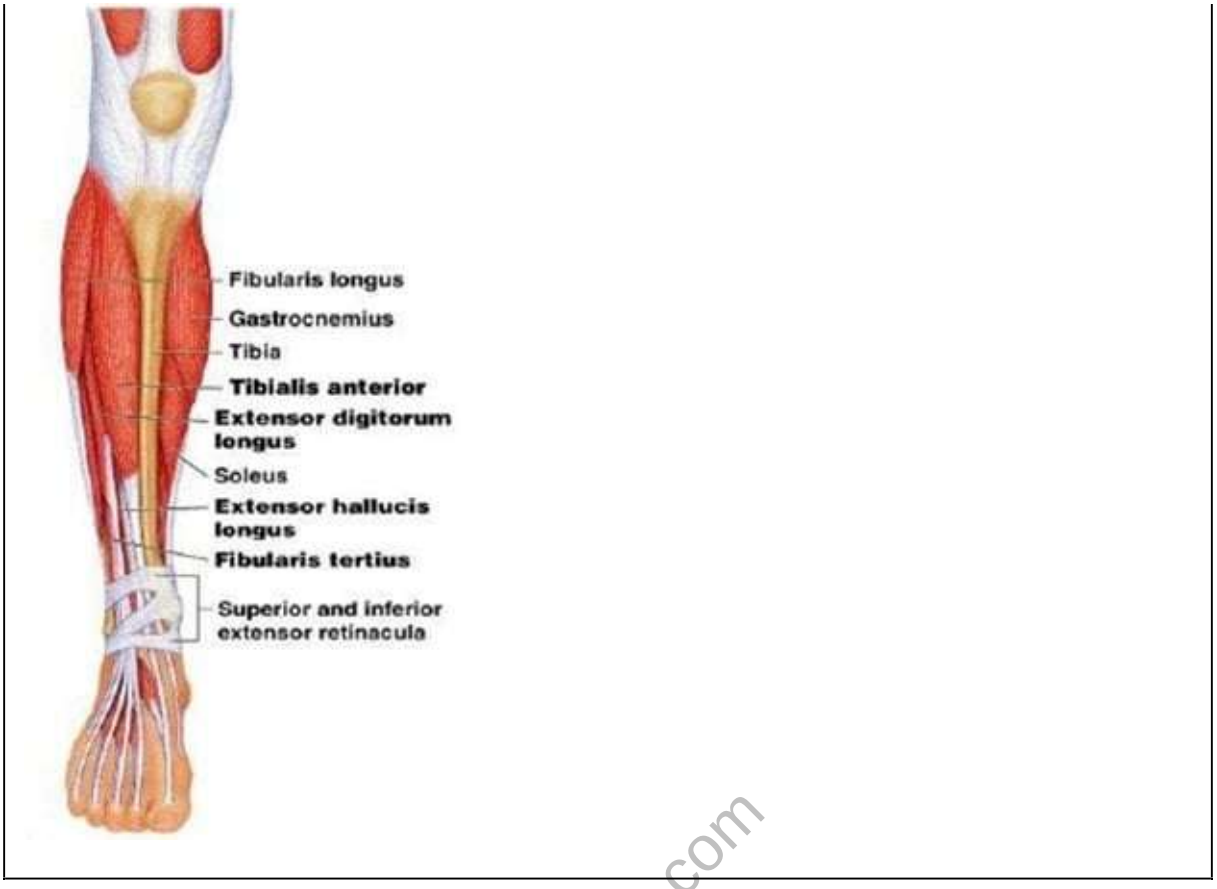
d) Flexordigitorumlongus

e) Flexor hallucis longus

Correct Answer - A

Ans. (a) Peroneus tertius

- The 4 muscles in the anterior compartment of the leg are- the tibialis anterior, extensor digitorum longus, extensor hallucis longus, and fibularis(Peroneus) tertius



3. Branches of internal carotid artery directly arising from it:

a) Posterior communicating artery

b) Superiorhypophysealartery

c) Inferior hypophyseal artery

d) PosteriorcerebralArtery

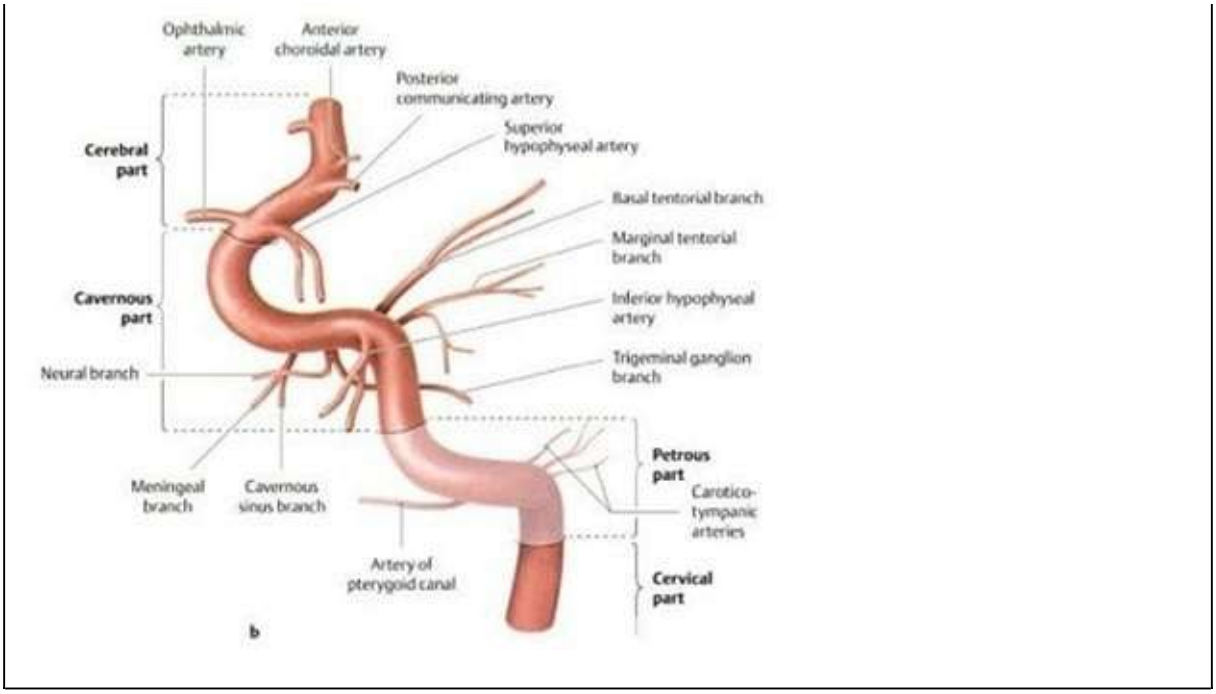
e) Recurrent artery ofHeubner

Correct Answer - A:B:C

Ans.(a) Posterior communicating artery, (b), Superior hypophyseal artery, (c) Inferior hypophyseal artery

Internal Carotid Artery Branches :

- Ophthalmic artery
- Posterior communicating artery
- Anterior choroidal artery
- Anterior cerebral artery: Orbital; Frontal and Parietal branches
- Middle cerebral artery: Deep or perforating branch; temporal branch; Frontal branch and Parietal branches



4. All are true about vestibular nerve except:

a) It has two division- superior and inferior vestibular

b) Vestibular nuclei situated at junction of pons and medulla

c) Nerve fibres relay at scarpa's ganglion

d) Nucleus lies in midbrain near aqueduct

e) None

Correct Answer - D

Ans. (d) Nucleus lies in midbrain near aqueduct

Vestibular nerve:

- The main nerve divides at and within the vestibular(Scarpa's) ganglion into superior and inferior division, which are connected by an isthmus
- Vestibular nuclei is located in floor of 4^{th} ventricle & is supplied by PICA.
- Vestibular ganglion is also k/a Scarpa's ganglion.
- Vestibular nerve anastomose with cochlear and facial nerve.

5. True about trochlear nerve:

a) Arise from ventral aspect of brainstem

b) Enters orbit through annulus of Zinn

c) Lesion causes diplopia

d) Nucleus of the trochlear nerve is located in the caudal mesencephalon beneath the cerebral aqueduct

e) Damage causes ipsilateral palsy of superior oblique muscle

Correct Answer - C:D

Ans. (c) Lesion causes diplopia, (d) Nucleus of the trochlear nerve is located in the caudal mesencephalon

The trochlear nerve has certain unique features:

- It is the only cranial nerve whose fibers originate totally from the contralateral nucleus.
- It is the only cranial nerve to emerge from the dorsal surface of the brain stem.
- It is the most slender of all the cranial nerves.
- It has the longest intradural course among the three extraocular motor nerves.
- It supplies only one muscle i.e. superior oblique (Abducent cranial nerve also supplies only one muscle i.e. Lateral rectus).

6. Content(s) of aortic hiatus?

a) Thoracic duct

b) Aorta

c) Vagus nerve

d) Inferior vena cava

e) Azygos vein

Correct Answer - A:B:E

Ans. (a) Thoracic duct, (b) Aorta, (e) Azygos vein

- The aortic hiatus situated at the level of T12 vertebra.

Structures passing through aortic hiatus along with aorta are:

- Thoracic duct
- Azygos vein
- Hemiazygos vein

7. Which flexor tendon zone in hand is known as No man's land?

a) Zone I

b) Zone II

c) Zone III

d) Zone IV

e) Zone V

Correct Answer - B

Ans. (b) Zone II

- Zone II extends from the middle of the middle phalanx to distal palmar crease. It contains both flexor tendon superficialis and flexor tendon profundus.
- It has been called No Man's Land.' or "No Man's Zone because repair in this zone is very difficult.

8. Correct statement about meiosis:

a) Somatic cells not divide by meiosis because number of chromosomes reduces to half

b) Occur in germ cell which result in haploid cells

c) One spermatocyte produces one sperm and one oocyte produces one ovum

d) Germ cell undergoes division to form diploid cell and increase their number

e) Body needs meiosis to produce large no. of eggs and sperms

Correct Answer - A:B:E

Ans. (a) Somatic cells not divide by meiosis (b) Occur in germ cell which result (e) Body needs meiosis to produce .

Meiosis:

- Meiosis is a type of cell division that reduces the number of chromosomes ln the parent cell by half and produces four gamete cells.
- This process is required to produce egg and, sperm cell for sexual reproduction
- Meiosis begins with a parent cell that ls diploid and forms four daughter cells that are haploid, which have half the number of chromosomes of the diploid cells.

9.

Cross-section of medulla at the level of mid-olivary section through the floor of fourth ventricle contains which of the following structure?

a) Trapezoid body

b) Dorsal nucleus of vagus

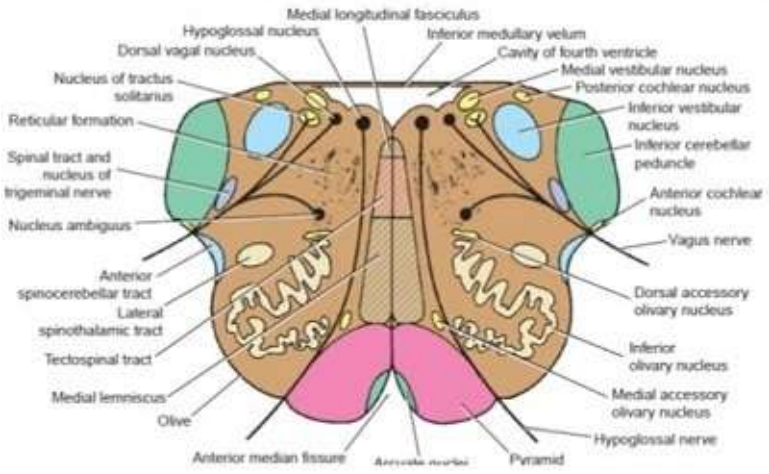
c) Nucleus of tractus solitarius

d) Nucleus ambigus

e) Superior vestibular nucleus

Correct Answer - B:C:D

Ans. (b) Dorsal nucleus of vagus, (c) Nucleus of tractus solitarius, (d) Nucleus ambiguus



10. True stateinent (s) about Olfactory system :

a) Olfactory mucosa cover upper 1/3 of nasal cavity

b) Olfactory pathway passes via thalamus to orbitofrontal cortex

c) Adaptation to odour develop only after 1-2 minutes

d) Olfactory receptors act via cAMP

e) Rate of olfactory nerve impulses change approximately in proportion to the logarithm of stimulus strength

Correct Answer - A:B:D:E

Ans. (A) Olfactory mucosa cover upper 1/3 of nasal cavity (B) Olfactory pathway passes via thalamus to orbitofrontal cortex (D) Olfactory receptors act via cAMP (E) Rate of olfactory nerve impulses change approximately in proportion to the logarithm of stimulus strength

- Rate of olfactory nerve impulses change approximately in proportion to the logarithm oF stimulus strength.
- The olfactory receptors adapt about 5O% inthe first second or so after stlmulatlan. Thereafter, they adapt very little and very slowly.
- Adaptation: It develops within seconds on minutes, depending on the nature of the substance.
- Weber-Fechner Law states that the subjective sensation(ofodor, sound or light intensity) is proportional to the logarithm of! the stimulus intensity"
- The receptor in the olfactory mucous membrane are coupled to G-proteins.
- Olfactory regions: the Upper 1/3 of lateral walls (upto superior

concha), corresponding part of the nasal septum and the roof of the nasal cavity from the olfactory region' Here, mucous membrane Is paler in color

11. True about special anatomy and Physiology of lung :

a) Surfactant prevent collapse of small alveoli into larger one

b) Larger alveoli has more tendency to collapse than smaller alveoli in absence of surfactant

c) Surfactant decrease chance of collapse

d) Surfactant increases surface tension

e) With surfactant, large alveoli tend to become smaller and smaller ones tend to become larger

Correct Answer - A:C:E

Ans. (A) Surfactant prevent collapse of small alveoli into larger one (C) Surfactant decrease chance of collapse (E) With surfactant, large alveoli tend to become smaller and smaller ones tend to become larger

- Upper region alveoli have larger volumes.
- Already filled with air and are less compliant compared to those to dependent regions
- Low surFace tension alveoli are small - due to the presence in the fluid lining the alveoli of surfactant, a lipid surface-tension-lowering agent.
- Surfactant deficiency is an important cause of infant respiratory distress syndrome (IRDS, also known as hyaline membrane disease.
- Surface tension in the lungs of these infants is higher, and the alveoli are collapsed ln matry areas (atelectasis).

12. All are true about acromegaly except :

a) Increased IGF-1 levels

b) Excessive growth occurs before fusion of the epiphyses of the long bones

c) Somatostatin analogues can be used

d) Growth hormone levels increased

e) Transsphenoidal surgical resection is the preferred primary treatment for pituitary adenoma

Correct Answer - B

Ans. B. Excessive growth occurs before fusion of the epiphyses of the long bones

- In acromegaly, IGF-I levels are invariably high and reflect a Log-Linear relationship with clrculatlng GH concentrations.
- For acromegaly, somatostatin analogues and GH receptor antagonists are indicated
- Age-matched serum IGF-I levels are elevated in acromegaly.
- Somatostatin analogues are used as adjuvant treatment for preoperative shrinkage of large invasive macroadenomas.
- Transsphenoidal surgical resection by an experienced. surgeon is the preferred primary treatment.
- Tumors of the somatotrophs of the anterior pituitary (pituitary adenomas) secrete large amounts of growth hormone, leading to glgantbm ln chlUren and acromegaly in adults.
- Hypersecretion of growth hormone is accompanied by hypersecretion of prolactin in 20-40% of patients with acromegaly.

13. True statement (S) is/are:

a) Vasopressin increase only water reabsorption, not solute reabsorption

b) Aldosterone increase Na+ reabsorption from tubules

c) Glomerular filtrate of PCT has similar osmolarity as of plasma

d) Urine is hyperosmolar in early DCT

e) Generally urine osmolarity equals to plasma osmolarity

Correct Answer - A:B:C

Ans (A) Vasopressin increase only water reabsorption, not solute reabsorption (B) Aldosterone increase Na+ reabsorption from tubules (C) Glomerular filtrate of PCT has similar osmolarity as of plasma

- Antidiuretic hormone(ADH, Vasopressin) increases permeability of distal tubules(mild action) and collecting ducts(mainly) to water)increases water reabsorption.
- Aldosterone causes retentlon of sodlumtrom the kidney and increased urinary excretion of potassium; it has little effect on water excretion.
- PCT:The osmolality of fluids tn tubule is unchanged at approx. 3(X)mosm ie, isotonicity is maintained.
- The tubular fluid entering the DCT is always hypotonic to plasma.
- The fluid in the descending limb of the loop of Henle becomes hypertonic as water moves out of the tubule into the hypertonic interstitium.
- In the ascending limb lt becomes more dilute because of the movement of Na+ and Cl- out of the tubular lumen, and. when fluid reaches the top of the ascending lt.

- Adrenal mineralocorticoids such as aLDosterone increased tubular reabsorption of Na+ in association with secretion of K+ and H+ and also Na+ reabsorption with Cl-.

14. Rapidly adapting receptor(s) is/are:

a) Pain receptor

b) Pacinian corpuscles

c) Muscle spindle

d) Golgi tendon organs

e) Meissner corpuscles

Correct Answer - B:D:E

Ans. (B) Pacinian corpuscles (D) Golgi tendon organs (E) Meissner corpuscles

- Rapidly adapting: Rapidly adapting mechanoreceptors include Meissner corpuscle end-organs, Pacinian corpuscle end-organs, hair follicles receptors and some free nerve endings.
- Merkel's discs and Melssner's corpuscles are tactile receptors.
- They are rapidly adapting receptors.
- Pacinian corpuscles: They respond to deformation caused by firm pressure and are quietly adapting.

15. Which of the following is/are true about normal level:

a) Total Calcium: 8.5-10.5 mg/dL

b) Sodium:135-145 mmol/L

c) Potassium: 3.5-5.1 mmol/L

d) Creatinine: 0.6-2.6 mg/dL

e) TSH level: 0.1-3.1 mIU/L

Correct Answer - A:B:C

Ans. (A) Total Calcium: 8.5-10.5 mg/dL (B) Sodium:135-145 mmol/L (C) Potassium: 3.5-5.1 mmol/L

- Davidson 22ed / 1308, Harrison L9rh/2762, 2763,
- TSH -.2-4.5mU / L
- Calcium(total):8.5 - 10.5 mg/ dL
- Potassium - 3.5-5.0 meq/L
- Sodium - 136-146 meq/L
- Serum creatinine -0.6-1.6mg/dl

16. True about Action Potential in skeletal muscle fibers and nerve fibres:

a) Skeletal muscle fibres conduction velocity is 1/4 of thick myelinated nerve fiber

b) Action potential of both qualitatively similar

c) Resting membrane potential almost same

d) Duration of action potential same in both

e) Action potential of both quantitively similar

Correct Answer - B:C

Ans. (B) Action potential of both qualitatively similar

(C) Resting membrane potential almost same

- Muscle Action Potential-Comparison with Nerve Action Potential Guyton I lth/89
- Resting membrane potential: about -80 to -90 millivolts to skeletal fibers-the same as ln large myelinated nerve fibers.
- Duration of action potential 1 to 5 milliseconds tn skeletal muscle about five times as long as in large myelinated fibers..
- Velocity of conduction:3 to 5m/sec-about 1/13th the velocity of conduction in large myelinated terae fibers that excite skeletal muscle.

17. Tissue elevation of which of the following cause vasoconstriction :

a) Na^+

b) K^+

c) Mg

d) Ca^{2+}

e) H^+

Correct Answer - D

Ans. D. Ca^{2+}

- **Vascular Control by Ions and Other Chemical Factors Guyton 12th(SAE)/269**
- An increase in calcium ion concentration causes vasoconstriction.
- An increase in potassium ion concentration,.within the physiological range, causes vasodilation.
- An increase in magnesium ion concentration causes powerful vasodilation.
- An increase in hydrogen ion concentration (decrease in pH) causes dilation of the arterioles.
- Anions that have significant effects on blood vessels are acetate and citrate.An Increase in carbon dioxide concentration causes moderate vasodilation in most tissues but marked vasodilation in the brain.

18. Which of the following statement (s)is/are true changes at time of ovulation:

a) GnRH level decreases

b) Gonadotropin hormone surge

c) hCG surge

d) 1‘ Prostaglandins

e) Activation of proteolytic enzymes

Correct Answer - B:D:E

Ans. B,Gonadotropin hormone surge D,1‘ Prostaglandins & E,Activation of proteolytic enzymes

Ovulation:

- The midcycle LH surge is responsible for a dramatic increase in local concentrations of prostaglandins and proteolytic enzymes in the follicular wall.
- These substances progressively weaken the follicular wall and ultimately allow a perforation to form.
- If pregnancy does occur, placental hCG will mimic LH action and continually stimulate the corpus luteum to secrete progesterone.

Feedback Effects:

- At 36-48 h before ovulation, the estrogen feedback effect becomes positive, and this initiates the burst of LH secretion (LH surge) that produces ovulation.
- Ovulation occurs about 9 after LH peak- FSH secretion also peaks, despite a small rise in inhibin, probably because of. the strong stimulation of gonadotropes by GnRH.
- During the luteal phase, the secretion of LH and FSH is low because

of the elevated levels of estrogen, progesterone, and inhibin.

19. Comprehension preserved in which of the follwing aphasia

a) Broca's aphasia

b) Conduction aphasia

c) Wernicke's aphasia

d) Gobal aphasia

e) Anomic aphasia

Correct Answer - A:B:E

Ans. A,Broca's aphasia B,Conduction aphasia & E,Anomic aphasia

	Comprehension	Repetition of Spoken Language	Naming	Fluency
Wernicke's	Impaired	Impaired	Impaired	Preserved or increased
Broca's	Preserved (except grammar)	Impaired	Impaired	Decreased
Global	Impaired	Impaired	Impaired	Decreased
Conduction	Preserved	Impaired	Impaired	Preserved
Nonfluent (motor) transcortical	Preserved	Preserved	Impaired	Impaired
Fluent (sensory) transcortical	Impaired	Preserved	Impaired	Preserved
				No

Isolation	Impaired	Echolalia	Impaired	purposeful speech
Anomic	Preserved	Preserved	Impaired	Preserved except for word-finding pauses
Pure word deafness	Impaired only for spoken language	Impaired	Preserved	Preserved
Pure alexia	Impaired only for reading	Preserved	Preserved	Preserved

20. Vomiting centre (s) involved in post - operative vomiting

a) Area postrema

b) Chemoreceptor trigger zone (CTZ)

c) Reticular formation located in medulla

d) Nucleus tractus solitarius

e) Basal ganglia

Correct Answer - A:B:D

Ans. A,Area postrema B,Chemoreceptor trigger zone (CTZ) & D,Nucleus tractus solitarius

Postoperative Nausea and Vomiting (PONV):

- PONV is defined as any nausea, retching, or vomiting occurring during the first 24-48 h after surgery in patients.
- According to our current model, the brain structures involved in the pathophysiology of vomiting are distributed throughout the medulla oblongata of the brainstem, not centralized, In an anatomically defined 'vomiting centre'.
- **Such structures include the chemoreceptor trigger zone (cRTZ), Located at the caudal end of the fourth ventricle in the area postrema, and the nucleus tractus solitarius (NTS), located in the area postrema and lower pons.**
- PONV can be triggered by several perioperative stimuli, including opioids, volatile anaesthetics, anxiety, adverse drug reactions, and motion.

21. HGPRT are involve, and gout can be a feature.

a) HGPRT deficiency

b) HGPRT overactivity

c) PRPP synthetase deficiency

d) Glucose 6- phosphatase deficiency

e) Glucose phosphate dehydrogenase deficiency

Correct Answer - A:D

Answer. (a) HGPRT deficiency, (d) Glucose 6- phosphatase deficiency

[Ref: Harper 30th/354-56; Satyanarayan 4th/269-70,394-951

- Von Gierke's disease (Type 1 glycogen storage disease): Hyperuricemia occurs due to Glucose 6-phosphatase enzyme defect.
- HGPRT deficiency(as seen in Lesch-Nyhan syndrome): Increased production of purines
- Glucose 6-phosphatase deficiency:Purine overproduction.
- Gout is usually preceded and accompanied by hyperurlcemta (plasma uric acid level >0.4I mmol/L).
- Hlperuricemia is caused by dacreased renal extretlon, lncreased productlon" or increased intake oturlc acid

22. Hyperphenylalaninemia occurs due to:

a) Phenylalanine hydroxylase deficiency

b) Phenylalanine hydroxylase overactivity

c) Dihydrobiopterin reductase deficiency

d) Tyrosine hydroxylase deficiency

e) Defect in dihydrobiopterin biosynthesis

Correct Answer - A:C:E

Answer: (a) Phenylalanine hydroxylase..., (c) Dihydrobiopterin reductase..., (e) Defect in dihydrobiopterin biosynthesis

- Hyperphenylalaninemias arise from defects in phenylalanine hydroxylase itself (type I, classic phenylketonuria or PKU), in dihydrobiopterin reductase (types II and III), or in dihydrobiopterin biosynthesis (types IV and V) . Alternative catabolites are excreted.
- PKU is caused by a dcficiency otphenylalanine hydroxyl.as e, is the most common clinicallv encountered inborn error of amino acidmetabolism.
- Hyperphenylalaninemia may also be caused by deficiencies in any of the **several enzymes required to synthesize BH4,** or in **dihydropteridine reductase,** which regenerates BH4 from BH2.
- BH4 is also required for tyrosine hydroxylase and tryptophan hydroxylase, which catalyze reactions leading to the synthesis of neurotransmitters, such as serotonin and reverse the central nervous system (CNS) effects due to deficiencies in neurotransmitters.

23. Oxidative phoephoryletlon not inhiblted by:

a) Fluoride

b) 2, 4-dinitrophenol (DNP)

c) Oligomycin

d) Carboxin

e) Ouabin

Correct Answer - A:D:E

Answer: (a) Fluoride, (d) Carboxin, (e) Ouabin (Ref: Harper 30th/132-33; Lippincott 6th/79; Satyanarayan 4th/233-34; Chatterjea 7th/132-341

- There are three sites in respiratory chain where ATP is formed by oxidative phosphorylation. Three sites are- Site l(Complex-I), Site ll(Complex III) and Site lll(Complex IV). Complex ll(Succinate dehyfuogenase FAD) is not involved in oxidative phosphorylation.
- **2,4-dinitrophenol(DNP)**Dinitrocresol, Trifluorocarbonylcyanide phenylhydrazone, Pentachlorophenol
- Aspirin(in high dose), High concentration of thermogenin, thyroxine and long chain free fatty acids, Antibiotics- valinomycin, gramicidin A and nigercin are inhibitores of oxidative phosphorylation
- Carboxin inhibit complex II, which is not involved in oxidative phosphorylation(so not included in answer)"? Chatterjea 7h/134
- **"Ouabain** is a cardiac glycoside that acts by inhibiting the NW/IC - ATPase sodium-potassium ion pump"-Harper 30th/ 491
- **Fluoride:** It inhibits the activities of certain enzymes. Sodium fluoride inhibits enolase(of glycolysis) while fluoroacetate inhibits

aconitase(of citric acid cycle)"- Satyanarayan 4th/420.

24. True about Apolipoproteii.

a) **Constitute peripheral region of** plasma lipoproteins

b) Divided into A, B, C only

c) Apo A-I is the major protein component of high density lipoprotein (HDL)

d) Apo A,B and C are further divided

e) Role in enzyme activation

Correct Answer - A:C:D:E

Answer. (a) Constitute peripheral region of..., (c) Apo A-I is the major protein..., (d) Apo A,B and C are..., (e) Role in enzyme ... [Ref: Harper 30th/254-55; Satyanarayan 4th/318; http://noprniscairres.in/bitstream; onlinelibrary.wiley.com]

- Apolipoproteins (apo) play very important roles in the synthesis and catabolism of plasma lipoproteins, in lipid transport, and as activators of certain enzymes associated with lipid and lipoprotein metabolism
- Apolipoproteins are the protein component of **plasma lipoproteins** which consist of a core of triglycerides and cholesterol esters and a peripheral region of phospholipid, sphingolipid and protein.
- **Apo A-I is the major protein component of high density lipoprotein (HDL)** and a minor component of chylomicrons and very low density lipoprotein (VLDL).
- **Apolipo proteins are divided by structure and function into five major classes, A through E, with most classes having subclasses, for example, apolipoprotein (or apo) A-I and apo C-II.**

25. Amino acids containing hydroxyl group:

a) Threonine

b) Tyrosine

c) Serine

d) Tryptophan

e) Valine

Correct Answer - A:B:C
Answer: (a) Threon ine, (b) Tyrosine, (c) Serine Lippincott 6th/4

- **Serine, threonine, and tyrosine** each contain a **polar hydroxyl group** that can participate in hydrogen bond formation.
- The side chains of asparagine and glutamine each contain a carbonyl group and an amide group, both of which can also participate in hydrogen bonds"-

26. Cytochrome P45O is/are involved In:

a) Hydroxylation of xenobiotics

b) Methylation of xenobiotics

c) Deamination reaction

d) Involved in hydroxylation of steroids

e) Drug interaction

Correct Answer - A:C:D:E

Ans. (a) Hydroxylation of xenobiotics, (c) Deamination reaction, (d) Involved in hydroxylation of steroids, (e) Drug interaction [Ref: Harper 30th/584-85; KDT 7th/23-26;Lippincott 6th/; Satyanarayan 4th/639-40]

- **Cytochrome P450s are involved in phase I(hydroxulation) of the metabolism of xenobiotics, not in phase II. Methylation of xenobiotics occur in phase II by methyltransferase**

27. True about role of phospholipids:

a) Cell to cell recognition

b) Cell signaling

c) Precursor of Second Messengers

d) Mediators of inflammation

e) Regulate membrane permeability

Correct Answer - B:C:D:E

Answer: (b) Cell signaling, (c) Precursor of Second Messengers, (d) Mediators of inflammation, (e) Regulate membrane permeability

(Ref: Harper 30th/212,216,253-54; Robbins 9th/83-84; Satyanarayan 4th/36-37)

- Glycoprotein(fibronectin, laminin) is involve in **cell-cell recognition** and adhesion.
- The inositol is present in **phosphatidylinositol** as the stereoisomer, myoinositol. Phosphorylated phosphatidylinositols **(phosphoinositides)** are minor components of cell membranes, but play an important part in **cell signaling and membrane trafficking.**
- **Sphingomyelins are also found in large quantities in the myelin sheath that surrounds nerve fibers. They are believed to play a role in cell signaling and in apoptosis.**
- **Phosphatidylinositol is the source of second messengers-inositol triphosphate and diacylglyceol, that are invoved the action of some horomones.**

28. Correct statement about membrane:

a) **Phospholipids undergo** rapid lateral diffusion

b) Transverse movement of lipids across the membrane **is** faster than protein

c) Hydrophobic core of the phospholipid bilayer remains constantly in motion because of rotations around the bonds of lipid tails

d) Phospholipds that have one fatty acyl group, cannot form the bilayer

e) Phospholipids span whole bilayer

Correct Answer - A:C:D

Ans. a) Phospholipids undergo..., (c) Hydrophobic core of the phospholipid..., (d) Phospholipds that have one fatty acyl... (Ref: Harper 30th/215-17,478-90; Satyanarayan 4th/650-51; en.wikibooks.org]

- Membranes are mainly made up of lipids, proteins and small amount of carbohydrate. Phospholipids are the most common lipids present and they are amphipathic in nature.
- The hydrophobic core of the phospholipid bilayer **is** constantly in motion because of rotations around the bonds of lipid tails. Hydrophobic tails of a bilayer bend and lock together. However, because of hydrogen bonding with water, the hydrophilic head groups exhibit less movement as their rotation and mobility are constrained.This results in increasing viscosity of the lipid bilayer closer to the hydrophilic heads.
- The lysophosphollpi.ds have only one fatty acyl group, it cannot form the bilayer as the polarheads are too large, similarly cholesterol also cannot form bilayers as the rigid fitsed ring systenxs and additional

nonpolar tails are too large".

29. During DNA replication which bond breaks:

a) Phosphodiester bonds

b) Phosphate bond

c) Hydrogen bond

d) Glycosidic **bonds**

e) None

Correct Answer - C

Answer:c. Hydrogen bond [Ref: Lippincott 6th/397-400; Harper 30th/381-86; Satyanarayana 4th/524-29]

- When DNA replicates, a helicase enzyme "unzips" the double helix, breaking the hydrogen bonds that hold it together in the center
- The two strands of the double helix separate when hydrogen bonds between the paired bases are disrupted. Disruption can occur in the laboratory if the pH of the DNA solution is altered so that the nucleotide bases ionize, or if the solution is heated.

30. which nNA contalne abnormal purine and pyrimidine:

a) tRNA

b) 23SrRNA

c) 16SrRNA

d) 5SrRNA

e) mRNA

Correct Answer - A

Answer: a. tRNA

- tRNA molecule contain a high percentage of unusal bases, for example, dihydrouracil and have extensive intra-chain base pairing that leads to characteristic secondary and tertiary structure"- Lippincott 6th/ 418.
- The tRNA molecules contain a high percentage of unusual bases (for example, dihydrouracil) and have extensive intrachain base-pairing that leads to characteristic secondary and tertiary structure.
- **Transfer RNA** is unique among nucleic acids in its content of "unusual" bases. An unusual base is any purine or pyrimidine ring except the usual A, G, C, and U from which all RNAs are

31. Component of 50S ribosomal zubunit:

a) 16S RNA

b) 18S RNA

c) 5.8 RNA

d) 5S RNA

e) 23S RNA

Correct Answer - D:E

Answer d. 5S RNA, (e) 23S RNA (Lippincott 6th/436):

- The 50S subunit is primarily composed of proteins but also contains single-stranded RNA known as ribosomal RNA (rRNA). rRNA forms secondary and tertiary structures to maintain the structure and carry out the catalytic functions of the ribosome.
- It includes the 5S ribosomal RNA and 23S ribosomal RNA.
- 50S includes the activity that catalyzes peptide bond formation (peptidyl transfer reaction), prevents premature polypeptide hydrolysis, provides a binding site for the G-protein factors (assists initiation, elongation, and termination), and helps protein folding after synthesis.

32. True about Chromatin, remodeling:

a) Energy *is* required to displace the histone octamers from DNA or translocate them onto neighboring DNA segments

b) Histone modifications by specific enzyme

c) Do not involve enzymes

d) Aberrations in chromatin remodeling proteins may be associated with cancer

e) None

Correct Answer - A:B:D

Answer:a Energy is required to displace the histone..., (b) Histone modifications by..., (d) Aberrations in chromatin ...
[Ref: Harper 30th/735,438-39; Lippincott 6th/422,460; Harrison 19th/102e-7]

- **Chromatin remodeling is the dynamic modification of chromatin architecture to allow access of condensed genomic DNA to the regulatory transcription machinery proteins, and thereby control gene expression.**
- **chromatin remodeling complexes displace the histone octamers from DNA or translocate them onto neighboring DNA segments, thereby exposing underlying DNA sequences to sequence specific regulatory factors .**
- **histone acetylase and other enzymatic activities are associated with the coregulators involved in regulation of gene transcription.**
- **Aberrations in chromatin remodeling proteins are found to be associated with human diseases, including cancer.**

33. Best assessment of protein binding regions on a DNA molecule can be done by:

a) DNA footprinting

b) RT PCR

c) Microarray

d) Western blotting

e) Northern blotting

Correct Answer - A

Answer-(a) DNA footprinting [Ref: www.biotecharticles.com; www.biologyexams4u.com Lippincott 6th/473]

- **DNA footprinting- An in-vitro technique to find out protein binding regions on a DNA molecule. The technique is also called as DNAse I footprinting.Thousands of proteins (enzymes) are interacting with DNA in the nucleus for regulating activities like replication, transcription, translation etc.**
- **DNA Footprinting is a molecular technique used to identify the specific DNA sequence (binding site) that binds to a protein.**
- **This technique mainly used to identify the transcription factors which bind to promoter, enhancer or silencer region of gene to regulate its expression. Therefore the regulation of transcript ion of a gene can be studied using this method.**

34. Features of chronic myelogenous leukemia (CML)-

a) Bone marrow biopsy is necessary for diagnosis

b) Presence of BCR-ABL gene which directs the synthesis of BCR-ABL tyrosine kinase

c) Dasatinib is used in imatinib resistant cases

d) Generalized painful lymphadenopathy is presenting feature in most cases

e) Myeloblasts usually constitute more than 10% of all white cells in chronic phase

Correct Answer - A:B:C

Answer- A, B, C, Bone marrow biopsy is necessary for diagnosis, (B) Presence of BCR-ABL gene which directs the synthesis of BCR-ABL tyrosine kinase (C) Dasatinib is used in imatinib resistant cases

- Splenomegaly is present in 90%
- Imatinib, dasatinib and nilotinib specifically inhibit BCR ABL tyrosine kinase activity and reduce the uncontrolled proliferation of white cells.
- The disease is driven by the BCR-ABL1 chimeric gene product, a constitutively active tyrosine kinase.
- Common manifestations are of anemia and splenomegaly, lymphadenopathy, and extramedullary disease (skin or subcutaneous lesions)
- The bone marrow is hypercellular with marked myeloid hyperplasia and a high myeloid-to-erythroid ratio of 15-20: 1.

35. True about Cystic fibrosis-

a) Occurs due CFTR gene mutation on chromosome 7

b) Meconium ileus is present in >90% cases

c) CFTR gene can be detected antenately

d) Poor body growth

e) All of the above

Correct Answer - A:C:D

Answer- A, C, D, Occurs due CFTR gene mutation on chromosome 7 (C) CFTR gene can be detected antenately (D)Poor body growth

- The primary defect in cystic fibrosis results from abnormal function of an epitheltal chloride channel protein encoded by the cystic fibrosis transmembrane conductance regulator (CFTR) gene on chromosome 7.
- Contents of the intestinal lumen are difficult to excrete which results in meconium ileus.
- Sequencing the CFTR gene is the gold standard for diagnosis of cystic fibrosis Poor body growth

36. True about caspases -

a) Caspases initiate apoptosis by extrinsic and intrinsic pathway

b) Caspases are protease enzyme

c) Caspases are receptor

d) Caspases inhibit apoptosis

e) Causes non enzymatic degradation of critical cellular components

Correct Answer - A:B

Answer- A, B, Caspases initiate apoptosis by extrinsic and intrinsic pathway (B) Caspases are protease enzyme

- Apoptosis results from the activation of enzymes called caspases.
- The process of apoptosis may be divided into an initiation phase (intrinsic pathway) and execution (extrinsic pathway).

Two distinct pathways converge on caspase activation:

- The mitochondrial pathway and the death receptor pathway
- Caspases are a famiy of endoproteases.
- The activation of these enzyme is tightly controlled by their production as inactive zymogens that gain catalytic activity following signaling events promoting their aggregation into dimers or macromolecular complexes"

37. 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.

38. Feature(s) of Adult polycystic kidney disease is/are:

a) Renal enlargement

b) Small kidney

c) Spider leg deformity on intravenous urography

d) Ultrasound shows multiple cysts

e) All of the above

Correct Answer - A:C:D

Answer- A, C, D, Renal enlargement (C) Spider leg deformity on intravenous urography (D) Ultrasound shows multiple cysts

- ADPKD is characterized by the progressive bilateral formation of renal crisis.
- Inhieritence- autosomal dominant
- Characterized by multiple expanding cysts of both kidneys.
- In gross appearance, the kidneys are bilaterally enlarged.
- The pain may result from renal cyst infection, hemorrhage, or nephrolithiasis.
- 'Intravenous urography polycystic kidney disease: The spider legs, deformity of the calyces.

39. Which is/are caused by protein misfolding:

a) Creutzfeldt-Jakob disease

b) Bovine spongiform encephalopathy

c) Huntington disease

d) Alzheimer disease

e) Parkinson disease

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

Answer- A, B, C, D, E, Creutzfeldt-Jakob disease (B) Bovine spongiform encephalopathy (C) Huntington disease (D) Alzheimer disease (E) Parkinson disease

- The proteins fail to fold into their normal configuratory in this misfolded state, the proteins can become toxic in some way (a gain of toxic function) or they can lose their normal function which is known as protein misfolding disease.
- Such diseases as Creutzfeldt- Jakob disease, Alzheimer's disease, Parkinson's disease, prion disease, amyloidosis, Bovine spongiform encephalopathy, Huntington disease.

40. True about Creutzfeldt-Jakob Disease :

a) Gliosis in thalamus

b) Spongiform swelling in cerebral cortex

c) Brain atrophy in late stage

d) Slow and irregular background rhythm on EEG

e) None

Correct Answer - B:C:D

Answer- B, C, D, Spongiform swelling in cerebral cortex (C) Brain atrophy in late stage (D) Slow and irregular background rhythm on EEG

- CJD is a rare disorder that manifests clinically as a rapidly progressive dementia.
- The progression of the dementia in CJD is usually so rapid that there is little if any grossly evident brain atrophy.
- Microscopically, the hallmark is spongiform change of the cerebral cortex.
- In advanced cases there is severe neuronal loss, reactive gliosis.
- EEG abnormaltdes are present in nearly all patients, consisting of a slow and irregular background rhythm with periodic complex discharges.

41. Hereditary non- polyposis colorectal cancer (HNPCC) is/ are commonly associated with-

a) Endometrial cancer

b) Cervical cancer

c) Ovarian cancer

d) Breast cancer

e) Thyroid cancer

Correct Answer - A:C

Answer- A, C, Endometrial cancer (C) Ovarian cancer

- Hereditary non- polyposis colorectal cancer (HNPCC)-
- Malignancies- Colonic, endometrial, ovarian, pancreatic, gastric.
- Inherictance- autosomal dominant
- Gene- AD MSH2, MLH1, MSH6, PMS1, PMS2

42. Features of Non bacterial thrombotic endocarditis (NBTE)-

a) Common in SLE

b) Present on undersurface of valve

c) Vegetative growth is large and loosely attached to valve

d) May occur after post-cardiac catheterization

e) Source of systemic emboli

Correct Answer - B:D:E

Answer- B, D, E, Present on undersurface of valve (D) May occur after post-cardiac catheterization (E) Source of systemic emboli

- These verrucae are typically small, single or multiple, brownish and occur along the line of closure of the leaflet.
- Vegetatian of NBTE is small and loosely attached to the underlying valve.
- Source of systemic emboli that produce significant infarcts in the brain, heart, spleen and kidneys.
- It frequently occurs with deep venous thrombosis, pulmonary emboli.

43. True about Alzheirner disease:

a) Most common cause of dementia in elderly

b) Unusal before 45 years of age

c) Plaques consists of tau protein

d) May have family history

e) Short term memory is affected less than long-term memory

Correct Answer - A:B:D

Answer- A, B, D, Most common cause of dementia in elderly (B) Unusal before 45 years of age (D) May have family history

- Alzheimer's disease (AD) is a slowly progressive disease of the brain that is characterized by impairment of memory and eventually by disturbances in reasoning, planning, language, and perception.
- Alzheimer's disease is Common in 5th and 6th decade.
- Trisomy 21 is associated with alzheimer's dementia.
- Plaque containing beta-amyloid peptide, and neurofibrillary tangles containing tau protein occurs in neocortex.
- The causes include genetic, environmental, and lifestyle factors.
- Dementia of Alzheimer's type is associated with Depressive symptoms, Delusions ,Apraxia and aphasia.
- Recent memory loss (short term memory loss) is feature of Alzheimer's disease.

44. Negri bodies in animal can be best seen in:

a) Hippo campus

b) Basal ganglia

c) Cerebral cortex

d) Cerebellum

e) Thalamus

Correct Answer - A:D

Answer- A, D, Hippo campus (D) Cerebellum

- They are most prominent in pyramidal cells of the hippocampus and Purkinje cells of cerebellum but have been seen in nerve cells throughout the brain and spinal cord.

45. True about p53 -

a) Has tyrosine kinase activity

b) Has pro-apoptotic activity

c) Tumour suppressor gene

d) Has anti-apoptotic activity

e) None

Correct Answer - A:B:C

Answer- A, B, C, Has tyrosine kinase activity (B) Has pro-apoptotic activity (C) Tumour suppressor gene

- p 53 is a tumor suppressor gene and it is a proapoptotic factor, i.e. it promotes apoptosis if repair of DNA damage is unsuccessful at G1 arrest.
- The protein kinases that are known to target this transcriptional activation domain of p53.

46. True about Takayasu syndrome:

a) Involves small and Medium sized vessels

b) Shares many clinical features of giant cell arteritis if involves aorta

c) More common in male than female

d) Granulomatous vasculitis

e) Also called pulseless disease

Correct Answer - B:C:E

Answer- B, D, E, Shares many clinical features of giant cell arteritis if involves aorta (D) Granulomatous vasculitis (E) Also called pulseless disease

- "Giant cell arteritis (GCA) is a granulomatous arteritis that predominantly affects medium-sized arteries in the head and neck.
- It predominantly affects the aorta.
- Takayasu arteritis (Pulseless dlsease): The disease affects chiefly young women.
- Takayasu arteritis is a granulomatous vasculitis of medium sized and larger arteries characterized principally by ocular disturbances and marked weakening of the pulses in the upper extremities.

47. Which are inheritable malignancies:

a) Breast cancer

b) Thyroid cancer

c) Wilms tumour

d) Retinoblastoma

e) Prostate cancer

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

Answer- A, B, C, D, E, Breast cancer (B) Thyroid cancer (C) Wilms tumour (D) Retinoblastoma (E) Prostate cancer

- Breast/ovarian- Breast, ovarian, colonic, prostatic, pancreatic
- Wilm's tumour- Nephroblastoma, neuroblastoma, hepatoblastoma, rhabdomyosarcoma Retinoblastoma- Retinoblastoma, osteosarcoma
- Prostate cancer- prostate
- Cowden's syndrome- Breast, thyroid, gastrointestinal tract, pancreatic

48. Causes of Non- megaloblastic macrocytic anameia-

a) Folate deficiency

b) Lead toxicity

c) Hypothyroidism

d) Liver disease

e) Vit B 12 deficiency

Correct Answer - C:D
Answer- C, D, Hypothyroidism (D) Liver disease
Causes include:

- Chronic alcoholism
- Liver disease
- Hypothyroidism
- Reticular fibrosis
- Blood. disorders like red-cell aplasia, aplastic anemia,myelodysplastic syndromes and myeloid leukemia
- Drugs as azathioprine
- Pregnancy

49. True statement(s) about Wilm's tumour -

a) Most commonly presents as asymptomatic abdominal mass

b) Hereditary predisposition is present in 50% cases

c) Bilateral in 25% cases

d) Classic triphasic combination of blastemal, stromal, and epithelial cell types is observed

e) Most common in children

Correct Answer - A:D:E

Answer- A, D, E, Most commonly presents as asymptomatic abdominal mass (D) Classic triphasic combination of blastemal, stromal, and epithelial cell types is observed (E) Most common in children

- It is a malignant tumour of kidney which is seen in children
- Tumour is composed of epithelial and mesothelial elements (bone, cartilage, muscle etc) so called as nephroblastoma (immature embryonic tissue)
- Wilms tumor, also known as nephroblastoma is a complex mixed embryonal neoplasm of the kidney composed ofthree elaments: blastema, epithelia, and stroma.

Clinical features-

- Common in female children (2-4 years)
- Mass in the abdomen.
- Abdominal distension due to enlarged kidney
- Rarely, Wilm’s tumour is bilateral
- Hematuria

50. Which of following is not classified as Primitive neuroectodermal tumour(PNET):

a) Retinoblastoma

b) Medulloblastoma

c) Rhabdomyosarcoma

d) Ewing sarcoma

e) Carcinoid tumour

Correct Answer - A:C:D:E

Answer- A,Retinoblastoma C,Rhabdomyosarcoma D,Ewing sarcoma E,Carcinoid tumour

- Embryonal tumors or primitive neuroectodermal tumors (PNET) are the most common group of malignant CNS tumors of childhood.
- PNET group includes- medulloblastoma, supratentorial PNET, ependymoblastoma, medulloepithelioblastoma, and atypical teratoid/ rhaboid tumor (ATRT).
- Ewing's sarcoma is closely related to PNET, but not PNET.
- Recently, Ewing sarcoma and primitive neuroectodermal tumor (PNET) have been unified into a single category:
- The Ewing sarcoma family tumors (ESFT) based on shared clinical, morphologic, biochemical and molecular features

51. Glucose level in CSF is/are reduced in:

a) Bacterial meningitis

b) Fungal meningitis

c) Viral meningitis

d) Tubercular meningitis

e) Spirochetal meningitis

Correct Answer - A:B:D

Answer- A,Bacterial meningitis B,Fungal meningitis D,Tubercular meningitis

- Normal - 45- 48 mg/dL
- Bacterial meningitis- Markedly reduced (low <45)
- Fungal meningitis- Markedly reduced (low <45)
- Viral meningitis- Normal or low
- Tubercular meningitis- Reduced (low <45)
- Spirochetal meningitis- Normal

52. True about proliferalive phase of wound healing

a) Neutrophils increases gradually

b) Macrophage increases gradually

c) Collagen type I present predominantly

d) Collagen type III present predominantly

e) Angiogenesis occurs

Correct Answer - D:E

Answer- D,Collagen type III present predominantly E,Angiogenesis occurs

- During proliferation, the wound is 'rebuilt' with new granulation tissue which is comprised of collagen and extracellular matrix and into which a new network of blood vessels develop, a process known as 'angiogenesis'.
- Maturation is the final phase and occurs once the wound has closed. This phase involves remodelling of collagen from type III to type I Cellular activity reduces and the number of blood vessels in the wounded area regress and decrease.

53. Correct match of stain with tissue is/ are-

a) Perls' Prussian blue-iron in tissue

b) Von Kossa-collagen

c) Masson's trichrome -elastin fiber

d) PAS- glycogen

e) PAS- Acidic and neutral mucin

Correct Answer - A:D:E

Answer- A,Perls' Prussian blue-iron in tissue D,PAS-glycogen E,PAS- Acidic and neutral mucin

1. Masson's trichrome- Trichrome histology stains

- Can be used to distinguish between cellular items and extracellular items
- Can be used on connective tissue

2. Von Kossa stain- used to indicate calcium and calcium deposits

3. Periodic acid schiff (PAS)- A Mucin stain

- Used for staining glycogen
- Used to show glomeruli, basement membranes, and glycogen in the liver.

4. Perls' Prussian blue- Can be used to reveal the presence of iron in biological tissues

54. Which of the follwing is /are action of estrogen except :

a) Development of the alveolar system

b) Proliferation of stroma of breast

c) Ductal growth of the breast

d) ↓C Bone resorption

e) Development of lobules of breast

Correct Answer - A:E

Ans. (A) Development of the alveolar system (E) Development of lobules of breast

- Oestrogen causes only duct development.
- Progesterone is responsible for glandular development.
- It promotes the growth of the lobules and alveolar tissue in breast.
- Promotes the development of the alveolar(acinar) system of the breast

Estrogen - functions:

- Important in maintaining bone mass primarily by retargeting bone resorption.
- Produced at puberty cause growth of breasts proliferation of ducts and stroma, accumulation of fat.
- Stimulate stromal development and ductal growth in the breast
- Contribute to the growth of axillary and pubia hair.
- Pigmentation in the skin, most prominent in the regian of the nipplas and areolae.
- Continuous exposure to estrogens for prolonged periods leads to hyperplasia of the endometrium.

- Decrease the rate of resorption of bone by promoting apoptosis of osteoclasts and by antagonizing the osteoclastogenic and pro-osteoclastic effects of parathyroid hormone and interleukin-6.

55. All are true about bisphosphonates except :

a) Prevent reabsorption of bone by osteoclast

b) Structurally similar to pyrophosphate

c) Absorption increases with food

d) Can be safely given in liver disease

e) None

Correct Answer - C

Ans. C. Absorption increases with food

Bisphosphonates(BPNs):

- BPNs are analogies of pyrophosphate; carbon atom replacing orygen in the P-O-P skeleton
- All oral BNPs are poorly absorbed and produce gastric irritation as major side effect.
- They inhibits bone resorption and have recently attracted considerable attention because of their ability to prevent osteoporosis in addition to their usefulness in metabolic bone diseases and hypercalcemia.
  MOA: Localize to regions of bone resorption & exert their greatest effects on osteoclasts.
- Food reduces absorption even further, necessitating their administration on an empty stomach.
- Nearly half of the absorbed drug accumulates in bone; the remainder is excreted unchanged in the urine.
- Decreased renal function, esophageal motility disorders & peptic ulcer disease are the main contraindications.

56. Which of the following is /are newer drugs for TB:

a) Bedaquiline

b) Clofazimine

c) Coftaroline

d) Rifapentine

e) Etanercept

Correct Answer - A:B:D

Ans. (A) Bedaquiline (B) Clofazimine (D) Rifapentine

Newer Anti-TB drugs:

- Community Medicine with Recent Advances by Suryakantha 4ed/371
- Rifabutin
- Rifapentine - 400mg twice weekly.
- Macrolides:Roxithrornycin,Clarithromycin, Azithromycin
- Amikacin
- Fluoroquinolones:Ciprofloxacin, ofloxacin and sparfloxacin
- B-lactam antibiotic: trials are going on with amoxicillin- clavulanic acid
- Clofazimine - 200mg/d
- Paromomycin
- Cytokine immunotherapy:IL-2, cytokine gamma interferon and cytokine IL-12
- Bedaquiline - Multi- drug resistant tuberculosis (MDR-TB) - 400mg/d

57. All are true about oral iron therapy in anemia except :

a) May worsen inflammatory bowel disease

b) It takes minimum 2 weeks for reticulocyte count to increase

c) Generally 3-6 month therapy is required to replenish iron stores

d) Gastrointestinal side-effects limits its dose

e) Hb level is generally attained in 1-3 month

Correct Answer - B

Ans. B. It takes minimum 2 weeks for reticulocyte count to increase

Oral iron Therapy:

- Following oral iron, normal Hb level is usually obtained within 1 to 3 months.
- Depending mainly on the initial Hb level.
- It is important, however, to continue with the therapy for 12-20 weeks after the Hb level has returned to normal, in order to replenish the depleted iron stores.
- The reticulocyte count in the peripheral blood begins to rise within a week, reaches a peak at 10 to 14 days and returns to normal after 3 weeks

Adverse Effects of Oral iron:

- Epigastric pain, heartburn, nausea, vomiting, bloating staining of teeth, metallic taste, col:la,
- Alteration of intestinal flora.
- Gastric irritation and constipation.

Treatment of iron Deficiency:

- Ability of the patient to tolerate and absorb medicinal iron.

58. Drug which can be given by inhalation route :

a) Zileuton

b) Steroid

c) Salbutamol

d) Tobramycin

e) None

Correct Answer - B:C

Ans. (B) Steroid (C) Salbutamol

- Inhalatlonal steroids. Beclomethasone, dipropionate, budesonide, fluticasone propionate, flunisolide and ciclesonide.
- Salbutamol: used in form of oral, i.m/ s.c and inhalation.
- Zileuton: It is available only as extended release(oral) formulation.
- Tobramycin: Used in form of i.m/i.v, eye drop

59. Liver function test (LFT) monitoring is /are required in use of which of the following Disease Modifying Antirheumatic Drugs (DMARDs):

a) Methotrexate

b) Hydroxychloroquine

c) Sulfasalazine

d) Leflunomide

e) Gold

Correct Answer - A:D:E

Ans. (A) Methotrexate (D) Leflunomide (E) Gold

DMARDs Used for the treatment of rheumatoid arthritis:

- Hydroxychloroquine - Funduscopic and visual field testing every 12 months.
- Sulfasalazine - CBC every 2-4 weeks for the first 3 months, then every 3 months
- Methotrexate & Leflunomide - CBC, creatinine, LFTs every 2-3 months
- Tocilizumab - CBC and LFTs at regular intervals

60. Drugs which can be used in gestational hypertension:

a) Metoprolol

b) Labetalol

c) Methyldopa

d) Sustained release nifedipine

e) Losartan

Correct Answer - A:B:C:D

Ans. (A) Metoprolol (B) Labetalol (C) Methyldopa (D) Sustained release nifedipine

- Antihypertensive agents used in pregnancy: Methyldopa, lrydralazlne, labetalol, Nifedipine, atenolol.

61. Adverse effects of mirtazapine is /are:

a) Insomnia

b) Sedation

c) Sexual dysfunction

d) Vomiting

e) Weight gain

Correct Answer - B:E

Ans. (B)Sedation (E)Weight gain

Mirtazapine

Important adverse drug reactions

- marked sedation
- increased appetite
- weight gain
- Somnolence (most common)
- Dry mouth
- Constipation
- Dizziness
- Myalgias
- Increase serum cholesterol concentration to 20 percent
- Orthostatic hypotension
- Agranulocytosis

62. Carbonic anhydrase inhibitors (S) is/are:

a) Acetazolamide

b) Amiloride

c) Nitrofurantoin

d) Topiramate

e) None

Correct Answer - A:D

Ans. (A) Acetazolamide (D) Topiramate

- Carbonic anhydrase inhibitor: Topiramate, Acetazolamida, methazolamide, dichlorphenamide
- orally in the treatment of glaucoma - Acetazolamida, methazolamide, dichlorphenamide
- Topically active carbonic anhydrase inhibitors - Dorzolamide and brinzolamide.

63. Which of the following is /are true about Tacrolimus:

a) A macrolides antibiotic

b) Structure similar to cyclosporine

c) Derived from a fungus

d) T cell inhibitor

e) Hirsutism less evident than cyclosporine

Correct Answer - A:D:E

Ans. (A) A macrolides antibiotic (D) T cell inhibitor (E) Hirsutism less evident than cyclosporine

Tacrolimus:

- Immunosuppressant is chemically different from cyclosporine, but has the same mechanism of action 100 times more potent.
- Macrolide antibiotic produced by Streptomyces tsukubaensis(a bacteria)

MOA:

- Inhibition of helper T cells via calcineurin.
- Binds to the immunophilin FK-binding protein (FKBP)
- Therapeutic application, clinical efficacy as well as toxicity profila are similar to cyclosporine.
- Hypertension, hirsutism, gurn hyperplasia and hyperuricemia are less marked than with cyclosporine, but tacrolimus is more likely to precipitate diabetes, cause neurotoxicity alopecia and diarrhoea.
- Dose limiting toxicity is renal.

64. True about Low molecular weight heparin (IAMB):

a) Anti-factor Xa assay monitoring required in every patient

b) It increases aPTT more than UFH

c) Can be safely given in renal failure

d) Toxicity is totally reversed by protamine sulphate

e) Inactivate factor Xa selectively

Correct Answer - E

Ans. E.Inactivate factor Xa selectively

Low MolecularWeight (LMW) Heparins and UFH

- Heparin has been fractionated into LMW forms (MW 3000-7000) by different techniques..
- Inactivate Factor Xa selectively.
- They act only by inducing a conformational change in AT III and, not by providing a scaffolding for interaction of AT III with thrombin.
- As a result, LMW heparins have smaller effect on aPTT and whole blood clotting time than unfractionated heparin (UFH).
- Eliminated primarily by renal excretion are not to be used in patients with renal failure..
- Since aPTT/clotting times are not prolonged, Laboratory monitoring is not needed.
- Protamine does not neutralize fondaparinux and it only partially reverses the anticoagulant effect of LMW heparins.

65. True about Mafenide :

a) Can penetrate eschars

b) Doesn't cause burning sensation when applied to raw surface

c) Can be used orally

d) May cause metabolic acidosis

e) None

Correct Answer - D

Ans. D, May cause metabolic acidosis

Mafenide:

- Typical sulpHonamide.
- Used only totally-inhibits a variety of gram-positive and gram-negative bacteria.
- Biggest limitation - Produces burning sensation and severe pain when applied to raw surface.
- Mainly employed for bunt dressing to prevent infection, but not to heat already infected cases.

66. Which of the following is/are true about pharmacodynamics of drugs :

a) Affinity means how strongly drug binds to receptor

b) Efficacy means maximal effect by a drug

c) Irreversible antagonist mainly forms ionic bonds with receptor

d) Agonist potency depends on two parameters: affinity and efficacy

e) For antagonists, efficacy **is** zero

Correct Answer - A:B:D:E

Ans. A,Affinity means how strongly drug binds to receptor B,Efficacy means maximal effect by a drug D,Agonist potency depends on two parameters: affinity and efficacy & E,For antagonists, efficacy is zero

- Irreversible competitive(non-equilibrium) antagonism occurs with drugs that possess reactive groups that form covalent bonds with receptor.
- Receptor Block Antagonism involves two important Mechanisms
- Reversible competitive antagonist
- Irreversible, ornon-equilibrium, competitive antagonism.
- Drugs acting on receptors may be agonists or antagonists.
- Agonist potency depends on two parameters: affinity (i.e. tendency to bind to receptors) and efficacy (i.e. ability, once bound, to initiate changes that lead to effects).
- For antagonists, efficacy is zero.

67. All are true about plasma protein binding except:

a) Acidic drugs generally bind to plasma albumin and basic drugs to a, acid glycoprotein

b) Plasma binding determines volume of distribution

c) More plasma protein binding means more storage in liver

d) More plasma protein binding means less penetration in vascular membrane

e) High degree of protein. inding generally makes the drug long acting

Correct Answer - C

Ans. C, More plasma protein binding means more storage in liver

- Drugs which are highly protein bound or ionized remain largely within the vascular compartment and have very low volume of distribution.
- Acidic drugs generally bind to plasma albumin and basic drugs to a2 acid glycoprotein.
- Albumin ls a major carrier for acidic drugs.a1-acid glycoprotein blinds basic drugs.

Clinically significant implications of plasma protein binding:

- Binding of a drug to plasma protein also limits the drug's glomerular fiLtration.
- Drug transport and metabolism also are limited by binding to plasma proteins.
- Protein bound drug does not cross membranes (except through

large paracellular spaces, such as in capillaries) .

- Tend to have smaller volumes of distribution.
- Bound fraction of drug in not available for action.
- Plasma protein binding thus tantamounts to temporary storage of the drug.
- High degree of protein binding generally makes the drug long acting,

68. First pass metabolism is significant problem in drug given through:

a) Sublingual route

b) Rectal route

c) Intramuscular route

d) Directly into stomach

e) Directly into large intestine

Correct Answer - D

Ans. D, Directly into stomach

- All orally administered dru.gs are exposed to drug metabolizing enzymes in the intestinal wall and liver (where they first reach through the portal vein).
- Drug given directly into the stomach and intestine still have to pass through first pass metabolism in the intestinal wall and in liver.
- Approximately 50% of the drug that it is absorbed from the rectum will bypass the liver, thus reducing the hepatic first-pass effect.
- Presystemic metabolism In thc gut and liver can be avoided by administering the drug through sublingual, transdermal or parenteral (i. v/i.m/intradermal/s.c) routes.
- The event of first pass metabolism differs for dlfierent drugs and is an important datennlnant of oral bioavallabiltty.
- The hepatic first-pass effect can be avoided to a great extent by the use of sublingual tablets and transdermal preparations and to a lesser extent by the use oF rectal suppositories.
- Subltngu.al absorption provides direct access to systemic not portal-velns.

- The trans canal route ofiers the same advantage.

69. Which of the following dyads show clinically significant drug interactions:

a) Vancomycin—Amphotericin B

b) Rantidine- Atorvastatin

c) Warfarin— Aspirin

d) Allopurinol— Azathioprine

e) Aminoglycoside+Vancomycin

Correct Answer - A:C:D:E

Ans. A,Vancomycin—Amphotericin B C,Warfarin—Aspirin D,Allopurinol— Azathioprine & E,Aminoglycoside+Vancomycin

Drug interaction:

- Drugs may interact, but most can be categorized as pharmacoKInetic (absorption distribution, metabolism, excretion), phartnacodlmamla (aMitive or antagonistic effects), or combined interactions.

Eg:

- Aminoglycosides, vancomycin, cyclosporine and other nephrotoxic drug enhance the renal impairment caused by amphotericin B
- Allopurinol inhibits the degradation of i-mercaptopurine and azathioprine; their doses should be reduced to ?.
- Enhanced' anticoagulant action of warfarin:
- High doses oF salicylates have synergistic hypoprothrombinemic action & also displace warfarin from protein binding site.

70. True about osmotic diuretics:

a) **Osmotic diuretics have their** major effect **in the distal** convoluted tubule

b) Contraindicated **in** congestive heart **failure**

c) Causes Hyperkalemia

d) Increases **renal blood flow**

e) None

Correct Answer - B:C:D
And. B,Contraindicated in congestive heart failure C,Causes Hyperkalemia & D,Increases renal blood flow
Osmotic Diuretics:

- Major effect in the proximal tubule and the descending limb of Henle's loop.
- Inhibits Transport processes in the think AscLH.

Uses:

- Used to increase water excretion in preference to sodium excretion.
- Extracellular Volume expansion - Effect can complicate heart failure and may produce florid pulmonary edema - Contraindicated in CHF.
- Causes dehydration, Hyperkalemia, and Hypernatremia
- Headache, nausea & vomiting are commonly observed in patients treated with osmotic diuretics.

71. True about effect of steroid intake in inflammatory conditions:

a) Proanabolic effect on muscles

b) T glucose in plasma

c) -ve feedback on corticotropin-releasing hormone(CRH) production

d) May cause osteoporosis

e) None

Correct Answer - B:C:D

Ans. B,T glucose in plasma C,-ve feedback on corticotropin-releasing hormone(CRH) production & D,May cause osteoporosis

Glucocorticoids:

- Given chronically suppress the pituitary release of ACTH
- Glucocorticoids increase serum glucose level.
- Glucocorticoids stimulate RNA and protein synthesis in the liver, they have catabolic and anti anabolic effects in tymphoful and connective tissue, muscla, peripheral fat' and sldn.
- Cortisol has a negative feedback on ACTH and CRH production.

72. Drug that can potentiate Torsades de pointes:

a) Amiodarone

b) Sotalol

c) Chlorpromazine

d) Cisapride

e) Aspirin

Correct Answer - A:B:C:D
Ans, A,Amiodarone B,Sotalol C,Chlorpromazine & D,Cisapride
Torsades de Pointes (Ventricular Tachycardia)
Antiarrhythmics:
- Quinidine, procainamide, disopyramide, propafenone, amiodarone

Antimalarials:
- Quinine, mefloquine, artemisinin, halofantrine

Antibacterials:
- Sparfloxacin, moxifloxacin

Antihistamines:
- Terfenadine, astemizole, ebastine

Antidepressants:
- Amitriptyline and other tricyclics.

Antipsychotics:
- Thioridazine, pimozide, aripiprazole, ziprasidone

Prokinetic:
- Cisapride

73. Which of the Following are the grounds for divorce for females in India

a) Impotence of male partner

b) Extramarital affair of male aprtner

c) Infertility of female

d) Unemployment of male partner

e) If she was married before the age of fifteen and she want to renounces the marriage before she attains eighteen years of age

Correct Answer - A:B:E

Answer: (a) Impotence of male partner, (b) Extramarital affair of male aprtner, (e) If she was married before the age of fifteen... *(Ref: http://www.indidivorce.com/grounds-for-divorce-in-india.html: Parikh 7h/367, 386.6`h/5.1.5.24]*

- Adultery is considered as an offence against marriage by both the Penal law and the Matrimonial law in India and anyone committing an adulterous act can be punished under law"
- Impotency and infertility are completely distinct terms. Unlike impotency, infertility cannot be grounds for divorce, the Bombay high court (HC) ruled on Monday.Jul 24, 2012.
- Hindu Marriage Act, 1955 · Adultery, Cruelty, Desertion, Mental disorder ,Leprosy, Venereal Disease, if husband has indulged in rape, bestiality and sodomy, if she was married before the age of fifteen and renounces the marriage before she attains eighteen years of age.
- Sterile female is not a ground for divorce (Premature ejaculation, if

leads to impotency then ground for divorce, otherwise not ground for divorce.

- Impotency is a ground for annulling marriage

74. Bite mark may aid in:,

a) Assessment of age

b) Identification of accused

c) Assessment of height

d) Assessment of type of teeth

e) Collection of DNA sample

Correct Answer - B:C:E

Answer:(B,Identification of accused D,Assessment of type of teeth & E, Collection of... [Ref: Ready 33'°/98-100: Parikh 7`h/83-84]

- **Bite marks can permit precise identification** because the alignment of teeth is **peculiar to each individual.**
- The first step in analyzing the bite is to identify it as human. Animal teeth are very different from humans' teeth, so they leave very different bite-mark patterns. Next, **the bite is swabbed for DNA,** which may **have been left in the saliva of the biter.** The dentist must also determine whether the bite was self-inflicted.

75. Feature of gunshot injury is/are:

a) Gutter injury

b) Grease collar

c) Radiating wound

d) Tissue opening on opposite end

e) all of the above

Correct Answer - E

Answer- E,all of the above [Ref: Reddy 33rd/ 224,32"d/205,235; Parikh 7`h/249-53, 6`"/ 4.43-44; Forensic Anthropology by Steven Byers 4"/256]

- The impact of bullets on bone may cause fracture lines to form. The two type of fracture lines are distinguishable on cranial vault: radiating and concentric.
- Radiating fracture lines originate from the site of impact where they move outward in any direction(this is especially seen in entrance wound).
- Smudge Ring/Lead Ring/Grease Collar!Dirt Collar is due to the wipe of the soft metal of the bullet, or dirt present on it, or grease carried from the barrel and is deposited round the entrance wound internal to the abraded collar.
- Gutter fracture: They are formed when part of the thickness of the bone is removed so as to form a gutter, e.g., in oblique bullet wound"
- Bullet wound: In exit wound, size is bigger than bullet.

76. Which of the follwing is/ are true regarding Perjury:

a) Wilfully giving false statement under he/she either knows or believes to be false or does not believe to be true

b) S. 190 IPC deals with perjury

c) Voluntarily giving false evidence under oath which he/she either knows or believes to be false or does not believe to be true

d) The witness is liable to be prosecuted for perjury

e) None

Correct Answer - A:C:D

Ans. (A) Wilfully giving false statement under he/she either knows or believes to be false or does not believe to be true (C) Voluntarily giving false evidence under oath which he/she either knows or believes to be false or does not believe to be true (D) The witness is liable to be prosecuted for perjury

77. True about Corpus delicti :

a) Medical negligence

b) Body of offence

c) It includes body of the victim and other facts which are conclusive of death by foul play

d) The essence **of crime**

e) None

Correct Answer - B:C:D

Ans. (B) Body of offence (C) It includes body of the victim and other facts which are conclusive of death by foul play (D) The essence of crime

78. Which is not method of crime scene examination:

a) Grid

b) Strip

c) Wheel

d) Composite

e) Point to point

Correct Answer - D:E

Ans. (d) Composite and(e) Point to point

[*www.universalclass.com/articles/law/processing-a-crime-scene.]*

- Six basic crime scene search patterns- Strip method, Wheel method, Spiral method, Zone method,Grid method and Line method.
- The use of any or a number of these search methods will be determined by the location and size of the particular crime scene.

79. All is are true about Rotavirus infection except:

a) Most commonly seen in adult of > 30 year age group

b) Person to person transmission may occur

c) Severity of disease decreases with each repeat infection

d) Commonest cause of diarrhea in infants and children

e) Single infection provide lifelong immunity against reinfection

Correct Answer - A:E

Answer: (a) Most commonly seen in ... (e) Single infection provide...

[Ref: Ananthanarayan 9th/560-61; Park 23'223;Harrison 19th/1287-88 ;Jawetz 27h/534-35; Greenwood 16th/525-26]

- Reinfections are cornn on, but the severifir of dkease dzcreases with each repeat intectlon. Therefore, severe rotavirus infections are less common among older children and adults than among younger individuals.
- Rota diarrhea is usually seen in children below the age of five years, but is most frequent b/w 6 and 24 months of age.

80. True about pseudomonas aeruginose:

a) Not lysine decarboxylase positive

b) Oxidase positive

c) Produce pyocyanin pigment

d) Gram-negative bacilli

e) Has 6-12 flagella

Correct Answer - A:B:C:D

Answer a)Not lysine decarboxylase positive (b) Oxidase positive (c) Produce pyocyanin pigment (d) Gram-negative bacilli

[Ref: Ananthanarayan 9th/314-16; Harrison 19th/1042-43 ;Jawetz 27th/137-39; Greenwood 16th/282,16]

- It is positive in the indophenol oxidase test, and is Simmon's citrate positive, 1-arginine dihydrolase positive, 1-lysine decarboxylase negative, and 1-ornithine decarboxylase negative.
- P. aeruginosa : Motile by virtue of one or two polar flagella"
- P aeruginosa is a non fastidious, motile, gram-negative rod that grows on most common laboratory media, including blood and MacConkey agars.
- TWo of the identifying biochemical characteristics of p aeruginosa are an inability to ferment lactose onMacConkey agar and a positive reaction in the oxidase test.

81. Which of the following is/are DNA viruses:

a) Herpes virus

b) Hepadnaviridae

c) Parvovirus

d) Orthomyxoviridae

e) Enteroviruses

Correct Answer - A:B:C

Answer: (a) Herpes virus, (b) Hepadnaviridae, (c) Parvovirus [Ref: Ananthanarayan 9th/428,439-40; Harrison 19th/214e-1 ;Jawetz 27th/852]

- herpes viruses consists of a relatively large, double-stranded, linear DNA genome encased within an icosahedral protein cage called the capsid, which is wrapped in a lipid bilayer called the envelope.
- Partially dsDNA circular genome, about 3.2 kb.
- Parvoviruses are linear, nonsegmented, single-stranded DNA viruses, with an average genome size of 5-6 kb.

82. True about ZIKA virus:

a) Belong to flavivirus

b) First case detected in 1953 in Nigeria

c) RT PCR is useful in diagnosis

d) Causes macrocephaly

e) May presents with conjunctivitis

Correct Answer - A:C:E

Answer: (a) Belong to flavivirus, (c) RT PCR is useful in diagnosis, (e) May presents with conjunctivitis (Ref: Harrison 19th/1314; www. cdc. gov;www. nytimes. corn]

- It is spread mostly by the bite of an infected Aedes species mosquitoes (A. aegptiand A. albopictus). T
- It can be passed to a pregnant woman to her fetus. Infection during pregnancy can cause certain birth defects..
- Real-time reverse transcription-polymerase chain reaction (RT PCR) testing should be performed on serum collected during the first two weeks after symptom onset.
- There's no vaccine or specific treatment tor tlw disease. Treatment instead focuses on relieving symptoms and includes rest, rehydration and medications for fever and pain.
- A maculopapular rash, conjunctivitis, myalgia, and arthralgia usually accompany or follow those manifestations.

83. Parasite which infects through ingestion of aquatic vegetation:

a) Fasciola hepatica

b) Fasciolopsis buski

c) Paragonimus westermani

d) Watsonius watsoni

e) Gastrodiscoides hominis

Correct Answer - A:B:D:E

Answer: (a) Fasciola hepatica, (b) Fasciolopsis buski, (d) Watsonius watsoni, (e) Gastrodiscoides hominis

[Ref: Paniker's Parasitology 7th/151; Chatterjee Parasitology 13"/174; Harrison 19th/245e-1]

- mode of infection of Fasciola hepatica' The definitive host sheep and, man, get infection by ingestion of metacercariae encysted on aquatic vegetation.
- Infective form of Fasclolopsls Bush: Encysted metacercariae on aquatic vegetarian.
- Second intermediate host of fasciolopsis BusKi Encystment occurs on aquatic plants, roots of the lotus, bulb of water chestnut which act as second intermediate host.
- Second intermediate host of Gastrodiscoides hominis: aquatic plant. The cercariae encyst on water pl.ants. Man and animals become infected by feeding upon vegetations harbouring the metacercaria".

84. which of the following dyads of vector with disease is/are correctly matched:

a) Rat flea- Endemic typhus

b) Sand flea-Oriental sore

c) Blackfly-Kafaazar

d) Cyclops-Dracunculus

e) Louse-Chagas Disease

Correct Answer - A:B:D

Answer: (a) , (b) and (d) [Ref Park 23'/768;Paniker's Parasitology 7th/223]

- Rat flea→ Bubonic plague, endemic typhus, chiggerosis, hymenolepis diminuta.
- Sandfly→ Kala-azar, oriental sore, sa ndfl y fever, oroya fever.
- Cyclops→ Guinea-worm disease, fish topeworm (D. lotus).

85. All are features of scrub typhus except:l

a) Black eschar

b) Maculo-papular rash

c) More common in rural areas

d) Ciprofloxacin is drug of choice

e) Tick borne disease

Correct Answer - D:E

Answer: (d) Ciprofloxacinis is drug of choice, (e) Tick borne disease

(Ref: Ana nthanarayan 9th/408 ; Harrison 19th/1159 ; Park 23rd/300; Medical microbiology by Greenwood 16th /372]

- "Scrub typhus: One typical feature is the punched-out ulcer covered with a blackened scab(eschar) which indicates the location of mite bite"
- "Scrub typhus,:Most travel-acquired cases occur during visits to rural areas in endemic countries for activities such as camping, hiking or rafting, but urban cases have also been described. Tetracycline is drug of choice"- Park 23rd/300
- ""Scrub typhus, originally found in scrub jungles, has also been identified in a variety of other habitats, such as sandy beaches, mountain deserts and equatorial rain-forests"- Ananthanarayan 9th/408

86. Unlike nocardia, Actinomycosis is;

a) Facultative anaerobes

b) Not acid fast

c) Endogenous Cause Of disease

d) Environmental saprophyte

e) Grow at wide range of temperature range

Correct Answer - A:B:C

Ans. (a) Facultative anaerobes, (b) Not acid fast, (c) Endogenous cause of disease [Ref: Ananthonarayan gh/j9l-93;Jawetz 2vh/295,198-99;Greenwood l6h/221-22; Hanison IN/l088

- Actinomycete are facultative anaerobes, but often fail to grow aerobically on primary culture. They grow best under anaerobic or microaerophilic conditions with the addition of 5-10% carbon dioxide.
- Facultative anaerobes, Grow at 35-37°C, Oral commensals, Non-acid fast mycelia, Endogenous cause of disease

87. All of the following are caused by dermatophytes except:

a) Madura foot

b) Athlete's foot

c) Athlete's foot

d) Favus

e) None

Correct Answer - A

Answer: (A) Madura foot [Ref: Ananthanarayan 9th/596-97 ; Harrison 19th/1358]

- "Madura foot(eumycetoma or nadurantycosis) is caused by fungi-scedosporium, madurella mycetomatis and M.grisea, acremonium spp., exophiala spp., aspergillus spp. fusarium spp."
- "Favus: A chronic type of ringworm in which dense crusts (scutula) develop in the hair follicles, leading to alopecia and scattering.
- "Kerlon: Severe boggy lesions with marked inflammatory reaction that sometimes develops in scalp infection due to dermatophyte s"

88. Which of the following has least minimum infective dose(MID) required for causing infection:

a) Salmonella typhi

b) Campylobacter jejuni

c) Shigella dysentery

d) Vibrio cholera

e) None

Correct Answer - C

Ans. (c) Shigella dysentery ***[Ref: Ananthanarayan 9th/287,295;Greenwood 16th/261,252,289]***

- "Shigella cause bacillary dysentery. Infection occur by ingestion. The minimum infective dose is low: as few as I0-I(N bacilli are capable of initiating the disease, probably because they survive gastric acidity better than other enterobacter"- Ananthanarayan.

89. Which type of bacteria can not survive in absence of oxygen:

a) Obligate aerobe

b) Facultative anaerobes

c) Microaerophilic

d) Obligate Anaerobes

e) Facultative aerobes

Correct Answer - A

Ans. (a) Obligate aerobe [Ref: Ananthanarayan 5^0/ 24-25;Greenwood 16th/41]

- Aerobic bacteria require oxygen for growth. They may be *obligate aerobes* like the cholera vibrio, which will *grow only in the presence of oxygen,* or *facultative anaerobes* which are ordinarily aerobic but can also grow in the absence of oxygen, though less abundantly.
- Most bacteria of medical importance are facultative anaerobes. Anaerobic bacteria, such as clostridia, grow in the absence of o>rygen and the obligate anaerobes may even die on exposure to oxygen.
- Microaerophilic bacteria are those that grow best in the presence of low oxygen tension.

90. All are true about H I NI influenza except:

a) Zanamivir commonly given through IV route

b) Fatality more in some high risk group

c) RT-PCR is used for investigation

d) WHO latest trivalent influenza vaccine contains two influenza A subtypes (H3N2 and H1N1) and one influenza B component

e) CDC latest quadrivalent influenza vaccine contains two influenza A subtypes (H3N2 and H1N1) and two influenza B component

Correct Answer - A

Answer (a) Zanamivir commonly given through IV route *[Ref: Park 23'd/l 56-59;Ananthanarayan Eh/4gg-504 ; Harrison 1 Eh/t 209-t 4; KDT 7h/802-03]*

- WHO: It is recommended that trivalent vaccines for use in the 2017 southern hemisphere influenza season contain the following
1. An A/Michigan/45/2015 (H1N1)pdm09-like virus;
2. An A/Hong Kong/4801/2014 (H3N2)-like virus; and
3. A B/Brisbane/60/2008-like virus.

- RT-PCR provides the most timely and sensitive detection of the infection
- Pandemic influenza A (Hl nl) Treatment: oseltamivir adult oral dose is 75 mg twice daily for 5 days. Zanamivir dose is two inhalation (2 x 5 mg) twice daily for 5 days

91. True about serum marker of inactive carrier phase of chronic Hepatitis B:

a) Hbs Ag +ve

b) Hbe Ag +ve

c) Anti-HBe antibody positive

d) Low level DNA

e) Increased ALT

Correct Answer - A:C:D

Answer: (a) Hbs Ag +ve, (c) Anti-H Be antibody positive, (d) Low level DNA (Ref: Ananthanarayan 9`h/543-48; Harrison 19th/2032-33,2007 ;Davidson 22"°/950-52;Park 23rd/215.1

- Chronic HBV Infection:Inactive carriers are patients with circulating hepatitis B surface antigen (HBsAg), normal serum aminotransferase levels, undetectable HBeAg, and levels of HBV DNA that are either undetectable or present at a threshold of 103 IU/mL.
- The relatively replicative phase is characterized by the presence in the serum of HBeAg and HBV DNA levels well in excess of 103-104 IU/mL, sometimes exceeding 109 IU/mL; by the presence in the liver of detectable intra hepatocyte nucleocapsid antigens (primarily hepatitis B core antigen [HBcAg]); by high infectivity; and by accompanying liver injury.

92. Which of the following mechanism is/are used by bacteria to escape host defence mechanism:

a) Mycobacterium tuberculosis prevent intracellular killing by inhibiting phagolysosome formation

b) Streptococcus pyogenes by M protein

c) Neisseria meningitidis by capsular polysaccharide

d) Staphylococcus aureus by iron-regulated outer membrane proteins

e) Polysaccharide capsules of H. influenzae

Correct Answer - A:B:C:E

Answer: (a) Mycobaterium tuberculosis... (b) Streptococcus pyogenes... (c) Neisseia men in gti tides... (e) Polysaccharide...
[Ref: Ananthanarayan 9`'/350,212; textbookofbacteriology.net/antiphago ;Jawetz 27h/158-65; Greenwood 16th/244]

- The bacteria survive inside of phagosomes because they prevent the discharge of lysosomal contents into the phagosome environment. Specifically, *phagolysosome formation is inhibited in the phagocyte.* This is the strategy employed by *Salmonella, M. tuberculosis, Legionella* and chlamydiae.
- **Survival inside the phagolysosome-Mycobacteria** (including M. *tuberculosis* and *Mycobacterium leprae).*
- **M protein** and **fimbriae** of Group A streptococci **Surface slime** (polysaccharide) produced as a **biofilm** by *Pseudomonas aeruginosa*

- **M protein** and **fimbriae** of Group A streptococci **Surface slime** (polysaccharide) produced as a **biofilm** by *Pseudomonas aeruginosa*
- antiphagocytic substances on bacterial surfaces include:**Polysaccharide capsules** of *S. pneumoniae, Haemophilus influenzae,Treponema pallidum* and *Klebsiella pneumoniae*

93. True about Gas gangrene:

a) Onset is usually acute

b) Painless condition

c) Wound is swollen

d) At first wound is dusky or red, later becomes pale

e) Caused by gram +ve organism

Correct Answer - A:C:E

Ans: (a) Onset is usually acute, (c) Wound is swollen, (e) Caused by gram +ve organism

[Ref: Davidson 22"d/305;L and 826`/57;; Harrison 19th/990-95; Ananthanarayan 9th/257-59; Jawetz 27th/186-87;Greenwood 16th/231-35]

- Gas gangrene (clostridia) myonecrosis) is defined as acute invasion of healthy living muscle undamaged by previous trauma, and is most commonly caused by C. perfringens.
- Severe pain, crepitus, brawny induration with rapid progression to skin sloughing, violaceous bullae, and marked tachycardia are characteristics found in the majority of patients.
- Traumatic gas gangrene C. perfringens myonecrosis (gas gangrene) is one of the most fulminant gram-positive bacterial infections of humans.
- The infection is characterized by the sudden onset of excruciating pain at the affected site and the rapid development of a foul-smelling wound containing a thin serosanguineous discharge and gas bubbles.
- The wound produces a thin, brown, sweet-smelling exudate, in which Gram staining will reveal bacteria.

94. All are true about dengue virus except:

a) Belong to flaviviridae

b) Type DEN 4 is most common in India

c) Main vectors are aedes aegypti and aedes albopictus

d) Virus has positive sense RNA

e) Vector is sensitive to DDT

Correct Answer - B

Ans: (b) Type DEN 4 is most common... (Ref: Park 23'/246-56; Ananthanarayan 9th/523; Harrison 19th/1318-19;Jawetz 27th/552-541

- Belong to genus flavivirus with positive sense RNA(Harrison 19th 214e-1 table)
- All the 4 serotypes i.e dengu 1,2,3 and 4 have been isolated in India but at present DENV-1 and DENV-2 serotypes are widespread, Vector- Aedes aegypti and Aedes albopictus are the two most important vectors of dengue

95. Which of the follwing is/are true about Dengu fever:

a) Positive Tourniquet test means more than 10 petechiae per square inch

b) Caused by flavivirus

c) Aedes aegypticus and albopictus are most important vector in India

d) IgM/IgG ratios may be used to distinguish primary from secondary infection

e) No vaccine available at present

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

Answer: A, Positive Tourniquet test means... B,Caused by... C,Aedes aegypticus and albopictus... D,IgM/IgG ratios may be used... E,No vaccine available... (Ref.: Park 23' /246-56; Davidson 22'/323,-Ananthanarayan 9th/523; Harrison 19th/1318-19;Jawetz 27h/552-54]

- Positive torniquet test (i,e. 10 or more petechiae per square inch) is most common hemorrhagic phenomenon. In DHF the test usually gives a definite positive with 20 petechiae or more- Park 23'd /249
- Vaccine- So far there is no satisfactory vaccine and no immediate prospect of preventing the disease by immunization- Park 23' /254
- "The diagnosis is made by IgM ELISA or paired serology during recovery or by antigen-detection ELISA or RT-PCR during the acute phase"- Harrison 19m/1318-19

96. Autoclave is/are used for sterilization of:

a) Wooden material

b) Metallic instrument

c) Plastic

d) Glasswares

e) Fibro-optic bronchoscope

Correct Answer - B

Ans: (b) Metallic instrument [Ref: Ananthanarayan 5^0/37,30-32; Greenwood 16^{th}/77-78;Chakraborty 2nd/45-46; en.wikipedia.org]

- Autoclaves in operation theaters is used to sterilize surgical instrument, OT garments, linen, gloves, masks, gown etc. However, it is not suitable for plastics"-Community Medicine with Recent Advances by Suryakantha

97. Which of the following is/are true about tuberculosis in india except?

a) India has approximately 1/4^{1h} of Global load of TB

b) MDR-TB among notified new pulmonary TB patients is about 5%

c) 5% of TB patients estimated to be HIV positive

d) MDR-TB among retreatment cases is about 15%

e) incidence is around 2 million new TB cases annually

Correct Answer - D

Answer: D, MDR-TB among retreatment cases is about 15% ***(Ref: Park 23rd/176-77; Community Medicine by Piyush Gupta 1"^{x}/192-97; Community Medicine with Recent Advances by Suryakantha 4"/364-70]***

- India is the highest TB burden country in the world in term of absolute number of incident cases that occur each year. It accounts for one-fourth of the estimated global incident TB cases in 2013"
- MDR-TB among notified new pulmonary TB patients was about 2.2% and among retreatment cases was about 15%
- Currently, multidrug-resistant TB is a global concern and is encountered in 3% of all new cases and 12% of retreatment cases.
- Approximately 5% of TB patients estimated to be HIV positive - Piyush Gupta 1"/1 94,Park 23rd/177

98. Importance of lepromin test are all except:

a) Only has epidemiological significance

b) Prognostic value

c) Tells about immunity status of leprosy patients

d) Differentiate between different types of leprosy

e) Predictive value

Correct Answer - A

Answer: (a) Only has epidemiological significance (Ref: Park 23rd/320-21; Community Medicine with Recent Advances by Suryakantha 4th/539-40

- The test has predictive value as well. It gives an indication of the risk of the disease among contacts of open cases.
- The test has an epidemiological value as well. It indicates the incidence and prevalence of infection among children. In the first 6 months of life, most children are lepromin negative. They become positive progressively as their age advances.
- The two drawbacks that stand in the way of this test bring used for diagnosis are:(i) positive results in non-cases, and (ii) negative results in lepromatous and near-lepromatous cases

99. A leprosy person is presented with involvements of sural and radial nerve . Which type of regimen you will give:

a) Multibacillary treatment X 9 month

b) Multibacillary treatment X 12 month

c) Multibacillary treatment X 15 month

d) Paucibacillary treatment X 6 month

e) Single dose treatment of Rifampicin,Ofloxacin and Minocycline(ROM)

Correct Answer - B

Answer (b) Multibacillary treatment X 12 month ***[Ref: Park 23rd/323-24; Community Medicine by Piyush Gupta Ist/282-83; Community Medicine with Recent Advances by Suryakantha 4th/535-45;Neena Khanna 5th / 272-84]***

- It is a pure neuritic type of leprosy.It is a case of Multibacillary leprosy for therapeutic purpose (according to WHO classification, more than one nerve trunk involvement is termed as multibacillary for treatment purpose.
- many consider that pure neuritic leprosy belongs to the paucibacillary group since all of them are acid-fast bacilli negative on skin smears by definition and are mostly lepromin positive.
- According to present NLEP guidelines in India, when one nerve trunk is involved in leprosy it is considered as paucibacillary, and when more than one nerve trunk is involved, it is considered as multibacillary for therapeutic purposes.

100. Which of the following is true about data representation:

a) Histogram is used for presentation of discrete data

b) Random dots in scatter diagram— no correlation

c) Pictogram is represented by small pictures or symbols

d) Pie chart is represented by quadrangular figures

e) Regression graph is said to be linear when the increase or decrease in the variables remains proportional in different subjects

Correct Answer - B:C:E

Answer: 4. (b) Random dots in scatter diagram..., (c) Pictogram is represented..., (e) Regression graph is said linear...
[Ref: Park 23rd/845-47; Community Medicine by Piyush Gupta 1st/652 ; Community Medicine with Recent Advances by Suryakantha 4th/694-99,729-30]

- There will be as many points as there are individuals in the observation. When all the point are plotted, the diagram gives the picture of a scatter. Hence the name 'Scatter diagram' (Dot diagram).
- The direction of scatter helps to determine the presence or absence of the association. *If the scatter takes the direction midway between the two axes, it signifies positive association (correlation)*
- If it takes a direction at right angles to midway scatter it indicates negative association.
- A haphazard scatter represents neither positive nor negative association.

101. True about Program evaluation and review technique (PERT):

a) Better than critical path method for small project

b) Recurrent activities is better monitored than CPM

c) Activities are divided into small goals

d) Main objective to monitor cost

e) It is a management technique better for non-research activities than CPM

Correct Answer - C

Answer: (c) Activities are divided into small goals (Ref: Park 23rd/872; Community Medicine by Piyush Gupta 1 st/783 ; Community Medicine with Recent Advances by Suryakantha 4'h/860]

- PERT(Programme Evaluation and Review Technique) is a management technique which makes possible more detailed planning and more comprehensive supervision.
- It aids in planning, scheduling and monitoring the project; it allows better communication b/w the various levels of management; it identifies potential problems; it furnishes continuous, timely progress reports; it forms a solid foundation upon which to build an evaluation and checking system
- The essence of PERT is to construct an Arrow Diagram. The diagram represents the logical sequence in which events must take place

102. Which of the following is/are more in human milk than cow milk:

a) Protein

b) Iron

c) Carbohydrate

d) Fat

e) Energy

Correct Answer - B:C
Answer: (b) Iron, (c) Carbohydate [Ref: Park 23rd/630; Community Medicine with Recent Advances by Suryakantha 4th/620]

103. Which of the following Is/are true :

a) Serial interval= gap in time b/w invasion by an infectious agent and the appearance of clinical feature

b) Latent period = the period from disease initiation to disease detection in non-infectious disease

c) Incubation period= time b/w the onset of the primary case and the secondary case

d) Generation time =time period between the onset of the infection and the maximum infectivity of the host

e) Communicable period = It is a period during which the reservoir is infectious to others

Correct Answer - B:D:E

Ans. B,Latent period = the period from disease ... D,Generation time =time period between ... and E, Communicable period = It...

[Ref: Park 23rd/99-100; Community Medicine with Recent Advances by Suryakantha 4th/281-82]

- The term latent period is used in non-infectious as the equivalent of incubation period in infectious disease. Latent period has been defined as "the period from disease initiation to disease detection.
- Generation time is defined as "the interval of time b/w receipt of infection by a host and maximal infectivity of that host"
- In general, generation time is roughly equal to the incubation period. However, these two terms are not the same
- Communicable Period is defined as " the time during which an infectious agent may be transferred directly or indirectly from an infected person to another person, from an infected animal to man, or from an infected person to an animal, including arthropods

104. Tests to check pasteurization of milk:

a) Phosphatase test

b) Standard plate count

c) Methylene blue test

d) Nitric acid test

e) Coliform count

Correct Answer - A:B:C:E

Answer: (a) Phosphatase test, (b) Standard plate count, (c) Methylene blue test, (e) Coliform count

(Ref: Park 23rd/655; Community Medicine with Recent Advances by Suryakantha 4th/186]

- Nitric acid test is done epidemic dropsy(argemone oil detection)"- Park 23rd/658
- **Phosphatase test:** This test is widely used to check the efficiency of pasteurization. This test is based on the fact that raw milk contains an enzyme called phosphatase which is destroyed on heating at a temperature which corresponds closely with the standard time and temperature required for pasteurization
- **Methylene blue test** Pasteurization of Milk Park 23rd/655
- It kills nearly 90% of the bacteria in milk including the more heat-resistant tubercle bacillus and the Q fever organisms. But it will not kill thermoduric bacteria nor the bacterial spores

105. All is true about foreign body impaction in ear except-

a) Objects located medial to isthmus of canal is difficult to remove

b) Syringing is used for removal of vegetative foreign body

c) Syringing uses room temperature water

d) Blunt hook is used to remove rounded foreign body

e) GA is preferred in children to remove foreign bodies

Correct Answer - B

Answer- B. Syringing is used for removal of vegetative foreign body

- Methods of removing a foreign body include: forceps removal, syringing suction, microscopic removal with special instruments and postaural approach.
- Foreign bodies of vegetable origin such as nuts, peas and beans, are hygroscopic and should not be syringed.
- No attempts should be made to remove smooth spherical objects such as beads by forceps.
- Beads which have a diameter less than that of the isthmus can be syringed; larger ones are better removed, with a hook.

106. All are true about epistaxis except:

a) Keisselbach's plexus is source in 90% cases

b) If anterior packing is left in nose for more than 48hrs antibiotic coverage is given

c) Anterior nasal pack is easy to insert and less traumatic than balloon temponade

d) Trotter method is first aid method

e) Cauteristaion is done in refractory cases under general anaesthesia

Correct Answer - C

Answer- C. Anterior nasal pack is easy to insert and less traumatic than balloon temponade

- Keisselbach's plexus: This plexus is the commonest site of bleeding (90% of cases)
- Anterior nasal packing- Prophylactic antibodies should be used it pack is in a place for more than 24 hours.
- A balloon tamponade may be used as an alternative to anterior nasal packing and This is less traumatic as it is best suited fpr epistaxis.
- Trotter's method- Patient may put in the sitting position with the head bending forwards with mouth open.
- Nasal endoscopy assisted bipolar cauterization under general anaesthesia may be done to coagulate the bleeder in case ofepistaxls is refractory to conservative measures.

107. True about Secretory otitis media:

a) Type C tympanogram may be seen in early stage of otitis media with effusion

b) Flat tympanogram is present

c) Leads to conductive deafness

d) Presence of cleft palate reduces its chance

e) Most common cause is Eustachian tube dysfunction

Correct Answer - A:B:C:E

Answer- A, B, C, E, Type C tympanogram may be seen in early stage of otitis media with effusion (B) Flat tympanogram is present (C) Leads to conductive deafness (E) Most common cause is Eustachian tube dysfunction

- This is an insidious condition characterized by accumulation of non-purulent effusion in the middle ear cleft.
- Eustachian tube (ET) dysfunction is considered the major etlologic factor in the development of middle ear disease.
- Type B tympanogram: A flat or dome-shaped, graph. Seen in middle ear fluid or thick tympanic membrane.
- Type C tympanogram: Seen in Eustachian tube obstruction or early stage of otitis media with effusion.
- Hearing loss- Hearing loss is of conductive type of 20-40 dB.
- Malfunctioning of Eustachian tube(causes include palatal defects e.g cleft palate, palatal paralysis) and increased secretory activity of middle ear mucosa.

108. Which cause reddish lesion on tongue:

a) Median rhomboid glossitis

b) Hairy leukoplakia

c) Lichen planus

d) Geographic tongue

e) Fordyce's spots

Correct Answer - A:D

Answer- A, D, Median rhomboid glossitis (D) Geographic tongue

Red Lesions of Oral Cavity lesion-

- Papillomas
- Pemphigoid
- Erythroplakia
- Granular-cell tumour
- Epulides
- Hemangioma

109. True Statement regarding wax in ear-

a) Syringing and instrumental manipulation are generally done to remove impacted wax

b) If wax is hard and impacted, ceromiilytic substances is used to soften wax

c) In syringing fluid is injected along the lower wall of the meatus

d) Wax has antibacterial property

e) None

Correct Answer - A:B:D

Answer- A, B, D, Syringing and instrumental manipulation are generally done to remove impacted wax (B) If wax is hard and impacted, ceromiilytic substances is used to soften wax (D) Wax has antibacterial property

- Wax has acidic pH and is bacteriostatic and fungistatic.
- If wax is too hard and impacted, to be removed by syringe or instrument,it should be softened by drops of 5% sodium bicarbonate in equal parts of glycerine and water.
- Hydrogen peroxide, liquid paraffin or olive oil may also achieve
- the same result. Commercial drops containing ceruminolytic agent paradichlorobenzene 2% can also be used.
- Wax is removed either by instrumental manipulation or by syringe.
- The auricle is pulled upwards and backwards to straighten out the meatus, and the fluid is injected along the upper wall of the meatus.

110. True about spasmodic dysphonia-

a) A neurological problem

b) Mostly psychogenic in origin

c) Hyperadduction of vocal cord may be seen

d) Botulinum toxin relives spasm

e) Speech therapy is beneficial

Correct Answer - A:C:D:E

Answer- A, C, D, E, A neurological problem (C) Hyperadduction of vocal cord may be seen (D) Botulinum toxin relives spasm (E) Speech therapy is beneficial

- "spasmodic dysphonia is a neurological disorder affecting the voice muscles in the larynx, or voice box.
- Etiology is unknown but lt is usually stress-related.
- Botulinum toxin lnjection into the laryngeal muscles has been tried in the treament of spastic dysphonia.
- Voice therapy is useful to improve voice only when combined with injection

111. Feature(s) of peritonsillar abscess:

a) Foul breath

b) Hot potato voice

c) Shifting of uvula in opposite side

d) Difficulty in swallowing even own saliva

e) Always presents as b/1 severe pain in throat

Correct Answer - A:B:C:D

Answer-A,Foul breath B,Hot potato voice C,Shifting of uvula in opposite side D,Difficulty in swallowing even own saliva

Clinical features are divided into :?

- General : They are due to septicaemia and resemble any acute infection.
- They include fever (up to 104°F), chills and rigors, general malaise, body aches, headache, nausea and constipation.

Local :

- Severe pain in throat. Usually unilateral.
- Odynophagia. It is so marked that the patient cannot even swallow his own saliva which dribbles from the angle of his mouth. Patient is usually dehydrated.
- Muffled and thick speech, often called "Hot potato voice".
- Foul breath due to sepsis in the oral cavity and poor hygiene.
- Ipsilateral earache. This is referred pain via CN IX which supplies both the tonsil and the ear.
- Trismus due to spasm of pterygoid muscles which are in close proximity to the superior constrictor.

112. True about antrochoanal polyp-

a) Starts as edema of maxillary sinus mucosa

b) Suppressed by steroids

c) Comes out via accessory ostium and grows in the choana and nasal cavity

d) More common in adults than children

e) Commonly presents as unilateral nasal obstruction

Correct Answer - A:C:E

Answer-A,Starts as edema of maxillary... C,Comes out via accessory ostium... E,Commonly presents as unilateral ...

- Age- Common in children
- Aetiology- Infection
- Number- Solitary
- Laterality- Unilateral
- Origin- Maxillary sinus near the ostium
- Growth- Grows backwards to the choana; may hang down behind the soft palate
- Size and shape- Trilobed with antral, nasal and choanal parts. Choanal part may protrude through the choana and fill the nasopharynx obstructiong both sides
- Recurrence- Uncommon, if removed completely
- Treatment- Polypectomy; endoscopic removal or Caldwell Luc operation if recurrent.

113. True about component of vision 2020-

a) Cataract surgery should be performed at primary level

b) Retinal surgery should be performed at tertiary level

c) Need to develop 10 centre of excellence at tertiary level and 100 training centre at advanced tertiary level

d) Ophthalmia neonatorum is included in childhood blindness

e) Primary vision center covers a population of 50000

Correct Answer - B:D:E

Answer- B,Retinal surgery should... D,Ophthalmia neonatorum... E,Primary vision center...

- At the primary level, the health worker screens for cataract and, reports those with vision less than a locally determined guideline.
- At the secondary level, cataract surgery should be perfomed with equal emphasis on the quality and quantity of surgery
- At the tertiary level lies the provision of facilities for surgical treatment of complicated cases such as congenital cataract, subluxated lens, complicated cataracts and cataract associated with systemic diseases.
- The Government of India has adopted 'Vision 2020: Right to Sight' under 'National Programme for Control of Blindness'.

Target diseases identified for intervention under 'Vision 2020'initiative in India included-

1. Cataract,
2. Childhood blindness,
3. Refractive errors and low vision,
4. Corneal blindness,
5. Diabetic retinopathy,

5. Glaucoma, and
7. Trachoma (focal)

Childhood blindness-

- Common causes of childhood blindness are ophthalmia neonatorum, injuries, congenital cataract.

Eye care infrastructure development-

- Primary level Vision Centre: There is a need to develop 20000 vision centres.
- Secondary level- secondary level populatian of 500000
- Each advanced tertiary Level center of excellence will cater to a population of 50 millions.

114. True about Nodular episcleritis-

a) Can be associated with SLE

b) Take longer time to resolve than diffuse variety

c) More symptomatic than diffuse type

d) Painless

e) Elevated hard nodule

Correct Answer - A:B:C:E

Answer- A,Can be associated with SLE B,Take longer time to resolve than diffuse variety C,More symptomatic than diffuse type E,Elevated hard nodule

- This is a benign inflammatory affectation of the deep subconjunctival connective tissues, including the superficial
- scleral lamellae, and frequently affects both eyes.

Two types of presentations may occur:

1. simple or diffuse episcleritis; and
2. nodular episcleritis.

- In nodular episcleritts a circumscribed nodule of dense leucocytic infiltration which is is hard, tender and immovable.
- Nodular episleritis tends to be more symptomatic and takes longer to resolve.
- Nodular episcleritis is characterized by a pink or purple flat nodule.
- Both episcleritis and scleritis are mainly seen in adults can be associatedwith other conditions such as rheumatoid arthritis and systemic lupus erythematosus (SLE).
- There may be little or no pain.

115. Which type of cataract is/are associated with Myotonic dystrophy:

a) Posterior subcapsular

b) Anterior subcapsular

c) Nuclear cataract

d) Cortical cataract

e) All of the above

Correct Answer - A

Answer- A. Posterior subcapsular

- Myotonlc dystrophy is associated with, posterior subcapsular type of presenile cataract. Christmas tree cataract is typically seen in this condition.

116. What is the WHO criteria for defining blindness :

a) < 3/60 vision with available correction

b) < 6/60 vision with available correction

c) < 3/60 vision with best correction

d) <6/60 vision with best correction

e) <3/60 vision without correction

Correct Answer - C

Answer- C. < 3/60 vision with best correction

- As per WHO, blindness is defined as Visual acuity of less than 3/60 in the better eye with best possible correction.

117. True about Acanthamoebic keratitis-

a) More in those wearing rigid gas permeable than soft contact lenses user

b) Can occur as opportunistic infection in patients with herpetic keratitis

c) Can be cultured on non-nutrient agar enriched with E. coli

d) Painful condition

e) Radial kerato-neuritis may occur

Correct Answer - B:C:D:E

Answer- B,Can occur as opportunistic infection.. C,Can be cultured on non-nutrient... D,Painful condition E,Radial kerato-neuritis may occur

- Corneal infection with acanthamoeba results from direct corneal contact with any material or water contaminated with the organism.
- Its occurrence is frequently associated with the wearing of soft contact lenses.
- Acanthamoeba keratitis can also occur as opportunistic infection in patients with herpetic keratitis, bacterial keratitis, bullous keratopathy and neuroparalytic keratitis.

Symptoms-

- Very severe pain
- Initial lesions of acanthamoeba keratitis are in the form fine epithelial and subepithelial opacities, and radial kerato-neuritis.
- Laboratory diagnosis: Culture on non-nutrient agat (E.coli enriched)

118. True about ferritin line in eye:

a) Ferry's Line-corneal epithelial iron line at the edge of filtering blebs

b) Stockers Line-Corneal epithelial iron line at the edge of pterygium

c) Hudson-Stahli line- visible all around the base of cone in Keratoconus

d) Fleischer's ring: Horizonatl corneal epithelial iron line at the inferior one third of cornea due to aging

e) Coat's white ring- A form of iron deposit at the level of Bowman's layer of cornea

Correct Answer - A:B:E

Answer- A,Ferry's Line-corneal epithelial... B,Stockers Line-Corneal epithelial... E,Coat's white ring- A form of iron deposit ...

- Ferry's Line = corneal epithelial iron line at the edge of filtering blebs.
- Stockers Line-Corneal epithelial iron line at the edge of pterygium
- Hudson-Stahil Line= Horizontal corneal epithelial iron line at the inferior one third of cornea due to aging.
- Fleischer's ring: Visible all around the base of cone in Keratoconus
- Coat's ring: remnants of a foreign body. The remnants are fine iron deposits in the cornea.

119. Which of the following is the feature of sodium fluorescein angiography compared to indocyanine green angiography:

a) In choroidal circulation it passes freely across the endothelium

b) Diffuse freely through retinal capillaries

c) Albumin binding is less than indocyanine green

d) Bind < 50% to albumin

e) Stimulated by a longer wavelength of light

Correct Answer - A:C

Answer- A, C, In choroidal circulation it passes freely across the endothelium (C) Albumin binding is less than indocyanine green

- Upon entering the circulation, approximately 8O% of the dye moleculcs bind to plasma proteins.
- Indocyanine green: binds primarily (95%) to albumin.
- In the choroidal circulation, fluorescein passes freely across the endothelium of the capillaries to the extravascular spaces
- A physiological barrier to the dye presents the passage across Bruch's membrane and the intact retinal pignent epithelium.
- The fundus camera has a mechanism to use blue light (420-49O nm wavelength) for exciting the fluorescein present in blood vessels.

120. True about phthisis bulbi-

a) Size of eye decreases

b) Removed by enucleation operation especially if painful

c) IOP increases in late stage

d) Calcification may occur in Bowman's layer of cornea

e) None

Correct Answer - A:B:D

Answer- A, B, D, Size of eye decreases (B) Removed by enucleation operation especially if painful (D) Calcification may occur in Bowman's layer of cornea

- It is the final stage end result of any form of chronic uveitis.
- As a result of it the eye becomes soft, shrinks and eventually becomes a small atrophic globe (phthisis bulbi).
- Commonly the retinal pigmented epithelium may undergo a metaplasia leading to intraocular ossification (calcification) in the end- stage of phthisis bulbi.
- Enucleation +/- prosthesis insertlon is performed if there is associated chronic pain or for cosmetic reasons.

121. Advantage of continuous curvilinear capsulorhexis over can opener technique-

a) Preferred method of anterior capsulotomy in phaco emulsification

b) More chances of posterior capsular opacification

c) Keeps the nucleus in place

d) Resists radial tears

e) Helps in stabilizing and centering the lens implant

Correct Answer - A:C:D:E

Answer- A, C, D, E, Preferred method of anterior capsulotomy in phaco emulsification (C) Keeps the nucleus in place (D) Resists radial tears (E) Helps in stabilizing and centering the lens implant

- Can-opener's technique. In it an irrigating cystitome (or simply a 26 gauge needle, bent at its tip) is introduced into the anterior chamber and multiple small radial cuts are made in the anterior capsule for 360 degree.
- Condnuous circular capsulorhexis (CCC)- Recently this is the most commonly performed procedure. In this the anterior capsule is torn in a circular fashion either with the help of an irrigating bent-needle cystitome or with a capsulorrhexis forceps.
- Can-opener capsulotomy can be used with phacoemulsificotion.
- CCC resists radial tears
- CCC stabilizes the nucleus.
- CCC also helps stabilize and centre the lens implant.

122. Which of the following is/are feature of aortic stenosis-

a) Duration between onset of symptom and death is generally 10-15 year

b) Angina occurs mainly because of fixed coronary blood flows

c) No increase in cardiac output despite exercise

d) Ejection systolic murmur radiating to neck may present

e) Left ventricular hypertrophy

Correct Answer - C:D:E

Answer- C, D, E, No increase in cardiac output despite exercise
(D) Ejection systolic murmur radiating to neck may present
(E) Left ventricular hypertrophy
The average time to death after the onset of various symptoms is as follows:

- angina pectoris, 3 years
- syncope, 8 years
- dyspnea, 2 years
- congestive heart failure, 1.5-2 years.
- Mild or moderate stenosis:
- usually asymptomatic
- Exertional dyspnoea
- Angina
- Exertional syncope
- Sudden death
- Episodes of acute pulmonary oedema

Signs

- Ejection systolic murmur
- Slow-rising carotid pulse
- Thrusting apex beat (LVpressure overload)
- Narrowpulse pressure
- Signs of pulmonary venous congestion (e.g. crepitations)
- The murmnur of AS is characteristically an ejection (mid) systolic murmur.
- The LV becomes increasingly hypertrophied and coronary blood flow may then be inadequate.

123. True about organophosphate-induced delayed polyneuropathy:

a) Usually occurs after 2-3 month of acute exposure

b) Involves both sensory and motor nerve

c) Steroid is used for treatment

d) Incomplete recovery

e) None

Correct Answer - A:B:D

Answer- A, B, D, Usually occurs after 2-3 month of acute exposure (B) Involves both sensory and motor nerve (D) Incomplete recovery

- Organophosphate-induced delayed polyneuropathy (OPIDN) is a rare complication that usually occurs 2-3 weeks after acute exposure. It is a mixed sensory/motor polyneuropathy.
- Recovery is often incomplete

124. Unlike Child Pugh scoring, MELD score have:

a) Bedside assessment easy

b) Prothrombin time expressed as international normalized ratio (INR)

c) Serum creatinine estimation

d) Four component is used in scoring

e) Albumin level estimation

Correct Answer - B:C

Answer- B, Prothrombin time expressed as international normalized ratio (INR) and (C) Serum creatinine estimation

- This score is calculated iron three noninvasiue variables: the prothrombin time expressed as the international normalized ratio (INR), the serum bilirubin level, and the serum creatinine concentration
- MELD is currently used to establish priority listing for liver transplantation.

125. Risk factors associated with health care associated pneumonia (HCAP)-

a) Acute care hospitalization for at least 2 days in the preceding 90 days

b) Home infusion therapy

c) Immunosuppressive disease or immunosuppressive therapy

d) Antibiotic therapy in the preceding 90 days

e) Hospitalization for > 48 h

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

Answer- (A) Acute care hospitalization for at least 2 days in the preceding 90 days (B) Home infusion therapy (C) Immunosuppressive disease or immunosuppressive therapy (D) Antibiotic therapy in the preceding 90 days (E) Hospitalization for > 48 h

- Acute care hospitalization for at least 2 days in the preceding 90 days
- Residence in a nursing home or extended care facility
- Home infusion therapy, including chemotherapy, within the past 30 days
- Long-term dialysis within the past 30 days
- Home wound care
- Family member with an infection involving a multiple drug resistant pathogen
- Immunosuppressive disease or immunosuppressive therapy

126. All are feature(s) of sarcoidosis except:

a) High CD4: CD8 ratio

b) Hypercalciuria and hypercalcimia maybe present

c) f Serum levels of angiotensin-converting enzyme (ACE)

d) Schauman and asteroid bodies are pathognomic

e) None

Correct Answer - D

Answer- D. Schauman and asteroid bodies are pathognomic

- Hypercalcemia and/or Hypercalciuria occurs in about 10% of sarcoidosis patients.
- Bronchoalveolar lavage fluid In sarcoidosis is usually characterized by an increase in lymphocyte and a high CD4/ CD8 ratio.
- "Schauman and asteroid bodies- although characteristic, these cells are not pathognomic of sarcoidosis because they may be encountered in other granulomatous diseases.
- The granuloma is the pathologic hallmark of sarcoidosis.
- "Serum levels of anglotensin-converting enzyme (ACE) can be helpful in the diagnosls of sarcoidosis.

127. Transudative pleural effusion occurs in:

a) Urinothorax

b) Dressler syndrome

c) Nephrotic syndrome

d) Myxedema

e) Congestive heart failure

Correct Answer - A:C:D:E

Answer- (A) Urinothorax (C) Nephrotic syndrome (D) Myxedema (E) Congestive heart failure

- Congestive heart failure
- Cirrhosis
- Pulmonary embolization
- Nephrotic syndrome
- Peritoneal dialysis
- Superior vena cava obstruction
- Myxedema
- Urinothorax

128. True about primary sclerosing cholangitis:

a) Involves only intrahepatic bile duct, not extrahepatic bile duct

b) Associated with Inflammatory bowel disease

c) Causes macronodular cirrhosis

d) Periductal fibrosis of smaller bile ducts

e) None

Correct Answer - B:D

Answer- (B) Associated with Inflammatory bowel disease
(D) Periductal fibrosis of smaller bile ducts

- PSC is characterized by Inflammation and obliterative fibrosis of Intrahepatic and extrahepatic bile ducts wlth dilation of preserved segments.
- Inflammatory bowel disease , particularly ulcerative colitis, coexists in approximately 70% of individuals with PSC.
- Primary sclerosing cholangltis causes micronodular cirrhosis.
- Following changes are seen-fibrosing cholangitis, periductal fibrosis, dilation of intervening bile ducts and cholestatis with full blown picture of biliary cirrhosis"

129. True about insulinoma:

a) Encapsulated

b) Mostly multiple

c) Associated with MEN-I

d) Enucleation is the treatment of choice for benign tumour

e) Histology similar to normal (3-cells

Correct Answer - A:C:D:E

Answer- (A) Encapsulated (C) Associated with MEN-I
(D) Enucleation is the treatment of choice for benign tumour
(E) Histology similar to normal (3-cells

- Insulinoma is usually solitary and well encapsulated tumour
- 10% are multiple (always associated with MEN 1) and 10% are malignant.
- Microscopically, the tumour is composed of cords and sheet of well-dffirentiated Beta-cells which do not differ from normal cells.
- Enucleationis the treatment of choice for benign insulinomas.

130. 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.

131. All are true about SjOgren's syndrome execept-

a) Bilateral parotid gland enlargement

b) Parotid gland enlargement may be painful

c) Xerostomia may present

d) Progression to lymphoma

e) Males are affected more than females

Correct Answer - E

Answer- E. Males are affected more than females

- Sjogren's syndrome is an autoimmune disorder associated with parotid glands.
- It affects women more (40- 60 years)

Clinical Features-

- Dry eyes (keratoconjuctivitis sicca)
- Xerostomia
- Vaginal dryness
- Raynaud's phenomenon
- Lymphoma
- Splenomegaly

132. Feature of Felty's syndrome is/ are-

a) Seropositive for rheumatoid factor

b) Splenomegaly

c) Long standing rheumatoid arthritis

d) Neutrophilia

e) Keratoconjunctivitis sicca

Correct Answer - A:B:C:E

Answer- (A) Seropositive for rheumatoid factor
(B) Splenomegaly (C) Long standing rheumatoid arthritis
(E) Keratoconjunctivitis sicca

- Felty syndrome is a potentially serious condition that is associated with rheumatoid arthritis.

Clinical features-

- Lymphadenopathy
- Vasculitis,
- leg ulcers
- Splenomegaly
- Weight loss
- Recurrent infections
- Skin pigments
- Keratoconjunctivitis sicca
- Seropositive for RF

133. Malignancies associated with AIDS-

a) Primary CNS lymphoma

b) Cervical cancer

c) Kaposi sarcoma

d) Ovarian cancer

e) Endometrial cancer

Correct Answer - A:B:C:D

Answer- (A) Primary CNS lymphoma (B) Cervical cancer (C) Kaposi sarcoma (D) Ovarian cancer

- The neoplastic diseases considered to be AIDS defining conditions are Kaposi's sarcoma non-Hodgkin's lymphoma, and invasive cervical carcinoma, ovarian carcinoma.

134. 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.

135. True about Severe Combined Immunodeficiency(SCID):

a) Adenosine deaminase enzyme may be given for treatment

b) Haematopoietic stem cell transplant (HSCT) is curative

c) Most common inheritance is X linked recessive and autosomal recessive

d) Lymphocytosis is present in most cases

e) Increased risk of infection by pneumocystis jiroveci

Correct Answer - A:B:C:E

Answer- A,Adenosine deaminase enzyme... B,Haematopoietic stem... C,Most common inheritance... E,Increased risk of infection...

- The most common form, accounting for 5o% to 6o% of cases,X-linked and inherited in the autosomal recessive mode.
- Adenosine deaminase deficiency: This the first immunodeficiency disease associated with an enzyme deficiency.
- Persons with SCID have severe infections by Candida albicans, Pneumocystis jiroveci, Pseudomonas, cytomegalovirus, varicella.
- HSC transplantation is the mainstay of treatment.

136. Proximal renal tubular acidosis(RTA) is/are associated with:

a) Fanconi anemia

b) Multiple myeloma

c) Lead poisoning

d) Sjogren's syndrome

e) SLE

Correct Answer - A:B:C

Answer- A,Fanconi anemia B,Multiple myeloma C,Multiple myeloma

- Inherited Fanconi's syndrome Cystinosis .
- Heavy metal toxicitY Lead, cadmium and mercury Poisoning
- Wilson's disease
- Drugs Carbonic anhydrase Inhibitors Ifosfamide
- Paraproteinaemia Myeloma
- Amyloidosis
- Hyperparathyroidism

137. High anion gap acidosis is/are associate

a) Lactic acidosis

b) Ethylene glycol poisoning

c) Aspirin overdose

d) Diarrhea

e) Renal tubular acidosis

Correct Answer - A:B:C

Answer- A,Lactic acidosis B,Ethylene glycol poisoning C,Aspirin overdose

- Lactic acidosis
- Ketoacidosis(diabetic,alcoholic,starvation)
- Toxins (ethylene glycol, methanol, glycol, pyroglutamic acid)
- Renal failure (acute and chronic)

138. Tubular proteinuria is/are seen in :

a) Multiple myeloma

b) Wilson disease

c) Lead poisoning

d) Fanconi syndrome

e) None

Correct Answer - B:C:D

Answer- B,Wilson disease C,Lead poisoning D,Fanconi syndrome

- Tubular proteinuria occurs as a result of faulty reabsorption of normally filtered proteins in the proximal tubule, such as Beta2-microglobulin and immunoglobulin light chains.
- Causes include acute tubular necrosis, toxi injury (lead, aminoglycosides), drug-induced interstitial nephritis, and hereditary metabolic disorders (Wison disease and Fanconi syndrome).

139. All are true Celiac disease except-

a) Antiendomysial antibody is present

b) Oat, rye and barley can be safely given

c) Associated with dermatitis herpetiformis

d) Associated with gliadin

e) No risk for development of cancer

Correct Answer - B:E

Answer- B,Oat, rye and barley can be safely given E,No risk for development of cancer

- It is an inflammatory disorder of the small bowel occurring in genetically susceptible individuals, which results from
- intolerance to wheat gluten and similar proteins found in rye, barley and, to a lesser extent, oats.
- Serum antibodies-IgA antigliadin, antiendomysial, and anti-tTG antibodies- are present.
- Celiac disease is associated with dermatitis herpetiformis (DH).
- The most important complication of celiac dlsease is the development of cancer.

140. Respiratory failure type II is/ are seen in-

a) Myasthenia gravis

b) Acute exacerbation in COPD

c) Acute severe Asthma

d) Pulmonary edema

e) Pulmonary embolism

Correct Answer - A:B:C

Answer- A,Myasthenia gravis B,Acute exacerbation in COPD C,Acute severe Asthma

- Acute severe asthma
- Acute exacerbation of COPD
- Upper airway obstruction
- Acute neuropathies/ paralysis
- Narcotic drugs
- Primary alveolar hypoventilation
- Flail chest injury

141. Photosensitivity is/ are not seen in-

a) Acute intermittent porphyria

b) Variegate porphyria

c) Porphyria cutanea tarda

d) Congenital erythropoietic porphyria

e) Erythropoietic protoporphyria

Correct Answer - B

Answer- B.Variegate porphyria

- Ferrochelatase- erythropoietic protoporphyria
- Protoporphyrinogen oxidase- Variegate porphyria
- PBG deaminase- acute intemittent
- Uroporphyrinogen synthetase- Congenital erythropoietic porphyria
- Uroporphyrinogen decarboxylase- porphyria cutanea tarda

142. True about 4th heart sound:

a) Low pitch

b) Present during early diastole

c) Absent in atrial fibrillation

d) Produced in the ventricle during ventricular filling phase

e) Present in severe left ventricular hypertrophy

Correct Answer - A:C:D:E

Answer- A,Low pitch C,Absent in atrial fibrillation D,Produced in the ventricle during ventricular filling phase E,Present in severe left ventricular hypertrophy

Fourth heart sounds (S4):

- Low pitched
- Pre-systolic sound produced in the ventricle during ventricular filling
- Produced during second rapid filling phase (before S1)
- Best heard with bell of stethoscope.
- The right-sided S4 is present in patients with right ventricular hypertrophy secondary to either pulmonic stenosis or pulmonary hypertension.

143. True about atrial flutter:

a) Narrow-complex tachycardia of up to 150/min

b) P wave absent

c) Associated with 2 : 1, 3 : 1 or 4 : 1 AV block

d) Best therapy is catheter ablation

e) Occur due to macro re-entry circuit within the right atrium

Correct Answer - A:C:D:E

Answer- A,Narrow-complex... C,Associated with... D,Best therapy... E,Occur due to macro re-entry...

- Atrial flutter is characterised by a large (macro) re-entry circuit, usually within the right atrium encircling the tricuspid annulus.
- The atrial rate is approximately 300/min, and is usually associated with 2 : 7, 3 : 1 or 4 : 1 AV block
- Atrial flutter should always be suspected when there is a narrow-complex tachycardia of 150/min.
- For recurrent episodes of common atrial flutter, catheter ablation of the cavotricuspid isthmus abolishes the arrhythmia in over 90% of patient.

144. Positive ECG sign(s) of ischemia in Tread mill test is/ are-

a) Upsloping depression of the ST segment mV below baseline

b) Downsloping depression of the ST segment >0.1 mV below baseline

c) Junctional ST-segment

d) Tachycardia

e) Ventricular premature beats

Correct Answer - B

Answer- B. Downsloping depression of the ST segment >0.1 mV below baseline

- Thc ischemia ST:-segment respone generally is defined as flat or downsloping depression of the ST segmant >O.1 mV
- below baseline (i.e., tha PR segnent) and lasting longer than O.08s.
- Upsloping or junctional ST-segment changes are not considered characteristic of ischemia and do not constitute a positive test.

145. Which of the following is/ are included in management of acute ischemic stroke-

a) Unfractioned Heparin

b) LMWH

c) Streptokinase

d) Aspirin

e) Recombinant tissue plasminogen activator (rt-PA)

Correct Answer - D:E

Answer- D,Aspirin E,Recombinant tissue plasminogen activator (rt-PA)

- Recombinant Tissue plasminogen Activator (RtPA) is the only thrombolytic agent that is approved for the treatment of acute ischaemic stroke.
- Use of aspirin within 48 h of stroke onset reduced both stroke recurrence risk and mortality mininally.

146. Finding(s) In hemolytic anemia is/are:

a) Increase in conjugated bilirubin

b) Increase in unconjugated bilirubin

c) Increase in urine urobilinogen

d) Increase in faecal stercobilinogen

e) Increased bilirubin in urine

Correct Answer - B:C:D

Answer- B,Increase in unconjugated bilirubin C,Increase in urine urobilinogen D,Increase in faecal stercobilinogen

- Decrease Haemoglobin
- Increased Unconjugated bilirubin
- Increase lactate dehydrogenase
- Increase Reticulocytes
- Increase urobilinogen

147. True about idiopathic thrombocytopenic purpura:

a) In children, it is usually an chronic disease

b) Self-limited course in acute form

c) In adults, it is a more acute disease

d) Immune-mediated destruction of platelets

e) None

Correct Answer - B:D

Answer- B,Self-limited course in acute form D,Immune-mediated destruction of platelets

- It is an acquired disorder in which there is immune- mediated destruction of platelets and possibly inhibition of platelet release from the megakaryocyte.
- In children, it is usually an acute disease most commonly following an infection, and with a self limited course.
- In adults, it is a more chronic disease.

148. True about coagulation disorders-

a) In DIC both PT and aPTT increase

b) Hemophilia C is a X linked recessive condition

c) Factor VIII can be given in hemophilia B

d) Hemophilia A is inherited as X- linked recessive

e) None

Correct Answer - A:D

Answer- A,In DIC both PT and aPTT increase D,Hemophilia A is inherited as X- linked recessive

- Hemophilia A: Inheritance is X- linked recessive, leading to affected males and carrier females.
- Common findings include the prolongation of PT and/or aPTT;

149. Plexiform lesion is prominent in which group of pulmonary hypertension-

a) Recurrent thromboemboli

b) Interstitial lung diseases

c) Familial pulmonary HTN

d) Congenital heart disease with left-to-right shunts

e) Pulmonary hypertension associated with human immunodeficiency

Correct Answer - C:D:E

Answer- C,Familial pulmonary HTN D,Congenital heart disease... E,Pulmonary hypertension associated...

- Plexiform lesions are most prominent in idiopathic and familial pulmonary hypertension, unrepaired congenital heart disease with left to right shunts and pulmonary hypertension associated with human immunodeficiency.

150. In which of the following condition, non-hepatic surgery is associated with most adverse outcome:

a) Child-Pugh score B

b) Child-Pugh score C

c) Acute viral hepatitis

d) Acute alcoholic hepatitis

e) Chronic viral hepatitis

Correct Answer - B

Answer- B. Child-Pugh score C

Table 3. Child-Pugh Grading System

Class	**Total Points**
A: well-compensated disease	5-6
B: functional compromise-worsening disease	7-9
C: decompensated disease	10-15

151. True about multiple sclerosis:

a) Periventricular involvement can't be seen by imaging studies

b) May produce mass lesion

c) Autoimmune inflammatory condition

d) Oligoclonal bands may be present in CSF

e) Spinal cord involvement may occur

Correct Answer - B:C:D:E

Answer- B,May produce mass lesion C,Autoimmune inflammatory condition D,Oligoclonal bands may be present in CSF E,Spinal cord involvement may occur

- "Elevated IgG in cerebrospinal fluid and discrete bands of IgG (oligoclonal bands) are present in many patients.
- It is an autoimmune disease of the CNS characterized by chronic inflammation demyelination, gliosis (scarring) and neuronal loss; the course can be relapsing-remitting or progressive.

152. Safest transplantation approach in liver disease-

a) Directly transplanting embryonic stem cell in the liver

b) Transplanting donor hepatocytes into liver

c) Transplanting mesenchymal stem cell from adipose tissue to liver

d) Injecting erythropoietin into body

e) None

Correct Answer - C

Answer- C. Transplanting mesenchymal stem cell from adipose tissue to liver

- Today, autologous (from the patient) adipose tissue stem cell are the only stem cells that have been used clinically for treating liver disease.
- Many trials have shown that patients with liver cirrhosis have benefitted from autologous adipose tissue derived mesenchymal stem cells

153. True about postoperative ileus:

a) Colon recovers earlier than small intestine

b) Small intestine most commonly affected

c) Adhesion is most common cause

d) Usually resolves within 48-72 hour

e) Radiographs show diffusely dilated bowel with air in the colon and rectum

Correct Answer - D:E

Answer- D,Usually resolves within 48-72 hour E,Radiographs show diffusely dilated bowel with air in the colon and rectum

- Ileus that occurs immediately after surgery in the absence of precipitating factors and resolves wlthln 2 to 4 days is referred to as primary or postoperative ileus.
- Postoperative ileus affects the stomach and colon primarily.
- After laparotomy, small bowel motility retun within several hours, gastric motility within 24 to 48 hours, and colonic motility in 48 to 72 hours.
- Abdominal radiographs reveal diffusely dilated bowel throughout the intestinal tract with air in the colon antd rectum.

154. True about secondary bacterial peritonitis-

a) Marked leukocytosis with left shift of the WBCs to band forms

b) Usually caused by polymicrobial infection

c) May be associated with appendicular perforation

d) Associated with cirrhosis of the liver

e) None

Correct Answer - A:B:C

Answer- A,Marked leukocytosis with left... B,Usually caused by polymicrobial ... C,May be associated with...

- Secondary peritonitis develops when bacteria contaminate the peritoneum as a result of spillage from an Intraabdominal viscus
- Patients are febrile, with marked leukocytosis and a left shift of the WBCs to band forms.
- Peritoneal infection is usually caused by two or more bacterial strains.

155. Correct statement about intestinal ischemia:

a) Watershed zones are usually affected

b) Arterial ischemic lesion has better demarcation than ischemia caused by impaired venous drainage

c) Crypts may be hyperproliferative

d) Microscopic examination may show coagulative necrosis of the muscularis propria

e) Surface epithelium is normal

Correct Answer - A:B:C:D

Answer- AWatershed zones..., B,Arterial ischemic lesion has better... C,Crypts may be hyperproliferative D,Microscopic examination...

Intestinal responses to ischemia occur in two phases-

1. The initial hypoxic injury occurs at the onset of vascular compromise.
2. Reperfusion injury, is initiated by restoration of the blood supply and it is at this time that the greatest damage occurs.

- Colon is the most common site of gastrointestinal ischemia, mucosal and mural infarction may involve any level of the gut from stomach to anus.
- There b coagulative necrosis of the muscularis propria within 2 to 4 days, and perforation may occur.
- Microscopic examination of ischemic intestine demonstrate the characteristic atrophy or sloughing of surface epithelium.
- Crypts may be hyperproliferative.

156. True about Colorectal cancer:

a) Right side cancer usually presents with obstructive symptoms

b) May be associated with HNPCC

c) Left-sided cancer presents with alteration in bowel habit

d) Left side colon is more commonly involved

e) All

Correct Answer - B:C:D

Answer- B,May be associated with HNPCC C,Left-sided cancer presents with alteration in bowel habit D,Left side colon is more commonly involved

- Tumors of the left side of the colon which are far more common.It usually present with a change in bowel habit or rectal
- bleeding, while more proximal lesions typically present later with iron deficiency anaemia or a mass.
- Hereditary Nonpolyposis Colon Cancer (Lynch's Syndrome): It is characterized by the davelopment of colorectal carcinoma at an early age.
- Tumors of the left colon can gradually occlude the lumen, causing changes in bowel habits with alternating constipation and increased frequency of defecation.

157. True about thyroid cancer:

a) Follicular cancer is more common in radiation exposed patient

b) Harthle cell carcinoma has better prognosis than follicular cancer

c) Follicular cancer have better prognosis than pupillary cancer

d) Insular variant of papillary carcinoma has better prognosis than papillary cancer

e) Medullary carcinoma is associated with MEN-2b

Correct Answer - E

Answer- E, Medullary carcinoma is associated with MEN-2b

- Medullary thyroid carcinoma in MEN 2B develops earlier and is more aggresive than in MEN 2A.
- Papillary Carcinomas are the most common form of thyroid Cancer.
- Harthle cell carcinoma may have a worse clinical prognosis.

158. True about Schatzki ring:

a) Contain true esophageal muscle

b) Concentric symmetric narrowing of lower esophagus

c) Consists of esophageal mucosa above and gastric mucosa below

d) Dysphagia is usually to solid foods

e) Association with reflux disease

Correct Answer - B:C:D:E

Answer-B,Concentric symmetric narrowing of lower esophagus CConsists of esophageal mucosa above and gastric mucosa below, D,Dysphagia is usually to solid foods E,Association with reflux disease

- Schatzki's ring is a thin submucosal circumferential ring in the distal oesophagus, usually at the squamocolumnar junction.
- It consists of esophageal mucosa above and gastric mucosa below.
- It does not have a component of true esophageal muscle the dysphagia is usually to solid foods only and comes on abruptly with nearly complete obstruction.
- There is a strong associatian wlth reflux disease.

159. True about intestinal type of gastric cancer-

a) Incidence decreased nowadays

b) Associated with H. pylori infection

c) More common in male than female

d) Better prognosis than diffuse

e) More common than diffuse type

Correct Answer - A:B:C:D

Answer- A,Incidence decreased nowadays B,Associated with H. pylori infection C,More common in male than female D,Better prognosis than diffuse

- "For unclear reason, the incidence and mortality rates for gastric cancer have decreased markedly during the past 65 years. Gastric cancer incidence has decreased worldwide but remains high in Japan, China, Chile and Ireland" - Harrison 16/e, p 524
- More common in women.
- The prognosis be less favourable.
- Intestinal metaplasla occurs due to persistent irritation of the gastric mucosa, most commonly from H. pylori infection.
- The Lauren system separates gastric adenocarcinoma into intestinal or diffuse types based on histology.

160. Correct statement about Intussusception in children is/ are all except-

a) Appendix is the most common leading point

b) Ileocolic is the most common site

c) Usually presents with pain without vomiting

d) Can be corrected by air and barium enema

e) Diagnosis is confirmed on abdominal ultrasound

Correct Answer - A:C

Answer- A,Appendix is the most common leading point C,Usually presents with pain without vomiting

- Most intussusceptions in children are seen from two months to two years of age intussusception is secondary to a pathological lead polnt, such as a Meckel's diverticulum, enteric duplication cyst or even a small bowel lymphoma.
- Classically, a previously healthy infant presents with colicky pain and vomiting.

161. Non-absorbable suture(s) is/are:

a) Silk

b) Catgut

c) Polypropylene

d) Polyester

e) Nylon

Correct Answer - A:C:D:E

Answer- A,Silk C,Polypropylene D,Polyester E,Nylon

- Non-absorbable sutures are:Silk,Linen,Surgical Steel,Linen,Polyester,Polybutester,Polypropylene,polyethylene, Nylon.

162. Correct statement about surgical site infection-

a) Can occurs due to environmental flora in OT

b) Superficial infection require re-surgical exploration of wound

c) Does not occur later than 14 days post-operative

d) Shaving is beneficial for prevention

e) Can occur even after 1 yr in case of implant left in situ

Correct Answer - A:B

Answer- A,Can occurs due to environmental flora in OT B,Superficial infection require re-surgical exploration of wound

- They can occur anytime from O to 3O days after the operation or up to 7 year after a procedure that has involved the implantation of a foreign material.
- Preoperative hair removal(clipping) should be done immeditately before an oPeration.

163. Regarding pre-operative antibiotic prophylaxis, which of the following statement(s) is/are correct:

a) Should be started 2 days before surgery

b) Should be given half an hour prior to surgery

c) Not needed in clean surgery

d) Should be given more than 1 hour before surgery

e) None

Correct Answer - B

Answer- B. Should be given half an hour prior to surgery

- "Antibiotic prophylaxis is indicated for most clean contaminated and contaminated.
- Antibiotics started as late as 7 to 2 hours after bacterial contamination are markedly less effective.

164. Grade III (contaminated) wound is/ are-

a) Appendicular perforation

b) Wound contaminated with gross fecal material spillage

c) Wound in urinary tract without unusual contamination

d) Surgery over a clean site

e) Incision through abscess

Correct Answer - B

Answer- B. Wound contaminated with gross fecal material spillage

- Contaminated wounds (class III) include open accidental wounds encountered early after injury, those with extensive introduction of bacteria into a normally sterile area of the body due to major breaks in sterile technique (e.g., open cardiac massage), gross spillage of viscus contents such as from the intestine, or incision through inflammed, albeit nonpurulent tissue.

165. True about testicular cancer-

a) Seminoma is more common than non-seminoma

b) Cryptorchidism is associated with seminoma

c) Retroperitoneal LN dissection is done for grade II testicular tumour

d) Usually presents as painless testicular lump

e) Seminomas metastasise mainly via haematogenous route

Correct Answer - A:B:C:D

Answer- A,Seminoma is more common... B,Cryptorchidism... C,Retroperitoneal LN dissection... D,Usually presents...

- Seminoma is the most common type of germ cell tumour.
- A major risk for the development of testicular cancer is cryptorchidism.
- Seminomas metastasise mainly via the lymphatics and haematogenous spread is uncommon.
- Usually the patient presents with a painless testicular lump.

166. True about obstructive jaundice-

a) Cholangiocarcinoma cause intermittent jaundice

b) Courvoisier law related to pancreatic head cancer

c) Cholangitis presents with fever and jaundice

d) Increase in urine urobilinogen

e) Increase in fecal urobilinogen

Correct Answer - B:C

Answer- B,Courvoisier law related to pancreatic head cancer C,Cholangitis presents with fever and jaundice

- examination often demonstrates clinical signs of jaundice, cachexia is often noticeable and a palpable gall bladder is present if the obstruction is in the distal commnon bile duct (Courvoisier's sign).
- Stone in CBD: Intermitent pain, intermitent fever and Intermittent jaundice are classical of stone in CBD.
- Cholangitis: The most common presentation is fever, epigastric or right upper quadrant pain, and jaundice and is known as Charcot's triad.
- Urine Urobilinogen : Absent
- Stools Sterocobilinogen- Absent

167. True statement regarding surviving sepsis guideline:

a) Activated protein C is useful

b) qS0FA should be assessed in case of prolong stay of patient in ICU

c) Suggest against the use of IV immunoglobulins in patients with sepsis

d) Recommend the use of erythropoietin for treatment of anemia associated with sepsis

e) Recommend empiric broad-spectrum therapy

Correct Answer - B:C:E

Answer- B,qS0FA should be assessed... C,Suggest against the use of IV ... E,Recommend empiric...

- Recombinant human activated protein C was completely omitted from the 2Ol2 guidelines.
- "A higher SOFA score is associated with an increased probability of mortality.
- Patients with suspected infection who are likely to have a prolonged ICU stay or to die in the hospital can be promptly identified at the bedside with qSOFA.
- Recommend empiric broad-spectrum therapy with one or more antimicrobials for patients presenting with sepsis or septic shock to cover all likely pathogens.
- Against using IV hydrocortisone to treat septic shock patients if adequate fluid resuscitation and vasopressor therapy are able to restore hemodynamic stability.

- Recommend against the use of erythropoietin for treatment of anemia associated with sepsis.

168. True statement regarding surviving sepsis guideline:

a) Activated protein C **is** useful

b) qS0FA should be assessed in case of prolong stay of patient in ICU

c) Suggest against the use of *IV* immunoglobulins in patients with sepsis

d) Recommend the use of erythropoietin for treatment of anemia associated with sepsis

e) Recommend empiric broad-spectrum therapy

Correct Answer - B:C:E
Answer:(b) qS0FA should be assessed in..., (c) Suggest against the use of IV..., (e) Recommend empiric broad-...
[Ref: Harrison 19th/1758; wwwfoamcast.org/2017/01/19; jamanetwork.com/journakSchwartz 9th/128-29]

169. True about management of peptic ulcer-

a) Vagotomy- decreases acid secretion

b) Early dumping syndrome occurs due to hypoglycaemia

c) Late dumping consists of abdominal and vasomotor symptoms

d) Billroth I gastrectomy has high rate of morbidity and mortality

e) Highly selective vagotomy has low incidence of side effects

Correct Answer - A:D:E

Answer- A,Vagotomy- decreases acid secretion D,Billroth I gastrectomy has high rate of morbidity and mortality E,Highly selective vagotomy has low incidence of side effects

- Highly selective vagotomy has most satistactory operation for duodenal ulceration, with a low incidence of side effects.
- Billroth I carries with it the morbidity and mortality associated with any gastric resection
- In vagotomy, section of the vagus nerves, whfuh are critiaally involved ln the secretion of gastric acid., reduces the maximal acid output by approrximately 5O Per cent.
- Early dumping consists of abdominal and vasomotor symPtoms.
- Late dumping is reactive hypoglycaemia. The carbohydrate load in the small bowel causes a rise in the plasma glucose, which
- in turn, causes insulin levels to rise, causing a secondary hypoglycemia.

170. True about surgical occlusive dressing-

a) Maintain moisture in wound

b) Provides mechanical support

c) Prevents microbial entry

d) Wide Mesh is helpful

e) Used for highly exudative wounds

Correct Answer - A:B:C

Answer- A,Maintain moisture in wound B,Provides mechanical support C,Prevents microbial entry

Wound dressings can be categorized into four classes:

- nonadherent fabrics;
- absorptive dressings;
- occlusive
- dressings;
- creams,
- ointments and solutions
- "Occlusive dressing class provides moisture retention ,mechanial protection and a barrier to bacteria.
- Wide mesh gauze is composition of absorptive dressing.

171. Which of the following nipple discharge is most probably physiological-

a) B/L spontaneous discharge

b) B/L milky discharge with squeezing from multiple ducts

c) U/L bloody discharge

d) U/L bloody discharge with squeezing from a single duct

e) U/L spontaneous serous discharge

Correct Answer - B

Answer- B, B/L milky discharge with squeezing from multiple ducts

- Nipple discharge is classified as pathologic if it is spontoneous, unilateral, blaody, serous, clear, or associated wlth a mass.
- Physiological discharge is usually bilateral, involves multiple ducts, and is assoctated with nipple stimulation or breast compression.
- Unilateral, localized to a single duct.
- The most common cause of spontaneous nipple discharge from a single duct is a solitary intraductal papilloma.

172. True about Fat necrosis in women:

a) History of trauma can be elicited in >90% cases

b) More common in lactating women

c) Can be easily differentiated from malignancy on mammography

d) No malignant

e) None

Correct Answer - D:E

Answer- D,No malignant E,None

- Trauma is presumed to be the cause, though only about 5O% of patients give a history of injury.
- Fat necrosis is a rare lesion of the breast.
- A carcinoma, even displaying skin tethering and nipple retraction, and biopsy is required for diagnosis.
- Fat necrosis can mimic cancer by producing a palpable mass or a denslty on mamtnography that may contain calcifications.

173. True about omphalocele is all, EXCEPT:

a) Umbilical cord inserts into the sac

b) Incidence of approximately 1 in 5000 live births

c) Abdominal wall defect measures ≥4 cm in diameter

d) Viscera covered by peritoneum

e) None of the above

Correct Answer - E

Answer- E. None of the above

- Omphalocele refers to a congenital defect of the abdominal wall in which the bowel and solid viscera are covered by peritoneum and amniotic membrane.
- The umbilical cord inserts into the sac.
- The abdominal wall defect measures ≥4 cm in diameter. Omphalocele has an incidence of approximately 1 in 5000 live births.
- The abdominal viscera (commonly liver and bowel)are contained within a sac composed of peritoneum and amnion from which the umblical cord arises at the apex and center.

174. Feature(s) of oesophageal atresia with trachea-oesophageal fistula :

a) Drooling of saliva

b) Associated with oligohydramnios

c) Nasogastric tube cannot passes into stomach

d) May be associated with VACTERL anomalies

e) Abdominal distension

Correct Answer - A:C:D:E

Answer- A, C, D, E, Drooling of saliva (C) Nasogastric tube cannot passes into stomach (D) May be associated with VACTERL anomalies (E) Abdominal distension

- Affected infants present soon after birth with drooling and cyanotic episodes on attempting to feed.
- There may have been polyhydramnios due to failure to swallow amniotic fluid.
- The diagnosis is confirmed when a nasogastric tube goes no further than the upper oesophageal pouch on the chest x-ray and abdominal gas signifies the tracheo- oesophageal fistula.
- The VACTERL ascociation (uertebral, anorectal, cardiac, tracheoesophageal, renal, and limb anomalies) is present of 25% of cases.
- As the neonate coughs and cries, air is transmitted through the fistula into the stomach, resulting in abdominal distension.

175. Correct statement(s) about hypospadias is/are:

a) Urethral opening on ventral aspect

b) Chordae on dorsal aspect

c) May be associated with penile torsion

d) Proximal varieties are more common

e) Coupons spongiosum is deficient

Correct Answer - A:C

Answer- A, C, Urethral opening on ventral aspect (C) May be associated with penile torsion

- There is incomplete development of the prepuce, called a dorsal hood, in which the foreskin is on the sides and dorsal aspect of the penile shaft and absent ventrally.
- There is a variable degree of chordae (a ventral curvature of the penis most apparent on erection)
- "Penile torsion is a fairly common congenital (present from birth) condition that can affect any male infant.

176. True about Bronchogenic cyst:

a) More common in anterior mediastinum than middle mediastinum

b) May have malignant potential

c) Produce symptoms which are usually compressive in nature

d) Air-fluid may be seen on chest X-ray

e) Mostly asymptomatic

Correct Answer - B:C:D:E

Answer- B, C, D, E, May have malignant potential (C) Produce symptoms which are usually compressive in nature (D) Air-fluid may be seen on chest X-ray (E) Mostly asymptomatic

- Bronchogenic cysts are the most common primary cysts of the anterior mediastinum.
- The diagnosis is confirmed by CT as a spherical fluid- or mucus filled nonenhancing mass. An air fluid level may be present on chest Xray.
- Two thirds of bronchogenic cysts are asymptomatic.
- Malignant degeneration has been reported.

177. A patient has Glasgow coma scale score -E1 VT M2. What is not required for his/her management:

a) Head end elevation

b) Total parenteral nutrition

c) Stress ulcer prophylaxis

d) Central line placement

e) None

Correct Answer - E

Answer- None

Domain	Response	Score
Eye openng	Spontaneous	4
	To speech	3
	To pain	2
	None	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate	3
	Incomprehensible	2
	None	1
Best motor response	Obeying	5
	Localizing	4
	Withdrawal	3
	Flexing	4
	Extending	1
	None	

Total score		6
		5
	Deep come or death	4
	Fully alert and oriented	5
		3
		1

178. True about pyomyositis-

a) Staphylococcus aureus is the most common causative organism

b) Streptococcus pyogens is the most common causative organism

c) Quadriceps is one of the most commonly affected muscle

d) Treatment involves drainage of abscess without antibiotic coverage

e) Best detected by MRI

Correct Answer - A:C:E

Answer- A, C, E, Staphylococcus aureus is the most common causative organism (C) Quadriceps is one of the most commonly affected muscle (E) Best detected by MRI

- Pyomyositis is an acute bacterial infection of the skeletal muscle caused by Staphylococcus aureus.
- It may be primary or secondary to a penetrating injury or contiguous anatomic infection.
- It typically affects the major muscles of the lower extremity and the gluteal muscles.
- Patients usually presents with pain, tenderness and edema of the involved muscle group.
- Abscess can develop in the muscle groups. Diagnosis is confirmed by needle aspiration or operative incision and drainage.
- Treatment involves adequate drainage along with antibiotic therapy against Staphylococcus aureus.
- Pyomyositis is characterized by a localized infectious process, conventional purulence, lack of surrounding tissue necrosis

179. All of the following are true about prostate specific antigen except -

a) Normal level is 10-14 ng/ml

b) It may Elavated in BPH and Ca Prostate

c) It is produced by prostate

d) It is a glycoprotein

e) None

Correct Answer - A

Answer- A. Normal level is 10-14 ng/ml

- It is a glycoprotein produced only in the prostatic cells (both benign & malignant).
- Normal serum level → less than 4 ng/ ml
- 4- 10 ng/ml > this range is common for both BHP and Ca.
- More than 10 ng/ml → approx 75% will have cancer.

180. Feature(s) of Patterson Kelly syndrome:

a) Dysphagia

b) More common in male than female

c) Achlorhydria

d) Treatment consists of dilation of oesophagus by oesophageal bougies

e) All

Correct Answer - A:C:D

Answer- A, C, D, Dysphagia (C) Achlorhydria (D) Treatment consists of dilation of oesophagus by oesophageal bougies

- Classical features of this syndrome include dysphagia, irondeficieny anaemia, glossitis, angular stomatitis, koilonychia (spooning of nails) and achlorhydria.
- Affects females past 40 years
- Dilatatian of the webbed area by oesophageal bougies

181. All are feature(s) of Beckwidth-Wide man syndrome except:

a) Omphalocele

b) Macrosomia

c) Hyperglycemia

d) Viscerомegaly

e) None

Correct Answer - C

Answer- C. Hyperglycemia

- Beckwidth- Wiedemann syndrome is an overgrowth syndrome that is characterized by visceromegaly, macroglossia, macrosomia,mphalocele and hyperinsulinemic hypoglycemia.

182. Correct statement about electrocautery-

a) In monopolar mode one electrode used at surgical field and second electrode is attached to patient plate

b) Patient plate should have conductive jelly to ensure proper contact with body

c) Burn may be seen at site of patient plate

d) Cutting has more voltage than coagulation

e) None

Correct Answer - A:B:C:D

Answer- A, B, C, D, In monopolar mode one electrode used at surgical field and second electrode is attached to patient plate (B) Patient plate should have conductive jelly to ensure proper contact with body (C)Burn may be seen at site of patient plate (D) Cutting has more voltage than coagulation

- High-frequancy alternating current can be delivered in either unipolar or bipolar fashion.
- The unipolar (or monopolar) device is composed of a generator, an electode for application, and an electrode for the returning current to complete the circuit.
- Complications of diathermy: Electrocution, Explosionanl, Burns.

183. Most common post-operatives complaints of patients is/ are:

a) Pain

b) Nausea

c) Vomiting

d) Shivering

e) Sedation

Correct Answer - A:B:C
Answer- A, B, C, Pain (B) Nausea (C) Vomiting

- Nausea, vomiting and pain are most common post-op complications.

184. True about abdominal aortic aneurysm-

a) Most common below renal artery

b) May presents as pulsatile abdominal mass

c) Atherosclerosis is most common cause

d) For asymptomatic aneurysms repair is indicated if the diameter is >4 cm

e) None

Correct Answer - A:B:C

Answer- A, B, C, Most common below renal artery, (B) May presents as pulsatile abdominal mass (C) Atherosclerosis is most common cause

- 9O% of abdominal aortic aneurysm (AAA) of size > 4cm in diameter is due to atherosclerosis.
- Male are more frequently affected than female.
- The aneurysm most commonly arises below the level of renal artery.
- It is usually detected on routine examination as a palpable, pulsatile, expansile, and non tender mass.

185. True about constitutional growth delay -

a) Baseline growth hormone decreased

b) IGF- f levels is low for chronological age

c) Growth delay only occurs after 2-3 years of age

d) Puberty spurt is delayed

e) Final height is within normal limits

Correct Answer - B:D:E

Ans. (b) IGF-I levels is low for chronological age, (d) Puberty spurt is delayed, (e) Final height is within normal limits

Constitutional Growth Delay

- These children are born with a normal length and weight and grow normally for first 6-12 months of life.
- Their growth then shows a deceleration so that the height and weight fall below the 3rd centile.
- By 3 yr of age, normal height velocity ls resumed and they continue to grow just below and parallel to the 3rd centile with a normal height velocity.
- The onset of puberty and adolescent growth spurt ls also delayed in these children but final height is within normal limits.
- Bone age is lower than chronological age and corresponds to the height age.
- History of delayed puberty and delayed height spurt is usually present in one or both parents.
- IGF-1 levels tend to be lower chronological age but within the normal range for bone age
- Pubertal growth spurt is delayed.
- Growth hormone responses to provocative testing tend to be lower

than in children

186. Feature of pallid breath holding spell in comparison to cyanotic breath holding spell:

a) More common than cyanotic breath holding spell

b) Elicited by painful stimulus

c) Bradycardia is prominent

d) Atropine is given in refractory cases

e) None

Correct Answer - B:C:D

Ans. (b) Elicited by painful stimulus. (c) Bradycardia is prominent, (d) Atropine is given in refractory cases

Breath holding spells

- Breath holding spell is a paroxysmal event occuring in 0.1% - 5% of healthy children from the *age* of 6 months to 6 years.
- The name for this behaviour may be misnomer in that it connotes prolonged inspiration. Infact, breath-holding occurs during expiration and is reflexive (not volitional) in nature.

There are two major types of breath holding spells ?

1. Cyanotic form (more common):

- Temporary disappearance or a decrease in intensity of the systolic murmur is usual as flow across the right ventricular outflow tract diminishes.
- Paroxysmal hypercyanotic attacks (hypoxic, "blue," or "tet" spells) are a particular problem during the 1st 2 years of life.
- The infant becomes hyperpnea and restless, cyanosis increases, gasping respirations ensue, and syncope may follow.

- Most frequently in morning on initially awakening or after episodes of vigorous crying

2. Pallid form:

- Triggered by sudden fright or pain or falling with a minor injury to the head
- Child may gasp and give a brief cry
- Child becomes pale, loses consciousness and becomes limp
- Child may become sweaty and may stiffen and have a few body jerks or lose bladder control.

Treatment:

- A subgroup of infants with breath holding spells have iron deficiency anemia. Iron therapy may treat not only the anemia, but also the breath-holding spells.
- Pallid infantile syncope may respond to atropine sulfate, which is used on an ongoing basis if spells are frequent, or intermittently if spells are situationally predictable (such as with venepuncture).

187. Which of the following finding is normal in infant?

a) Papilledema is rare in raised intracranial pressure

b) Floppy infant

c) Stroking patellar tendon of one side leads to contraction on opposite side

d) Elbow cross midline if passively done by examiner

e) Parachute reflex

Correct Answer - A:C:E

Ans. (a) Papilledema is rare in raised, (c) Stroking patellar tendon of one side leads tocontraction on opposite side (e) Parachute reflex

- In increased intracranial tension (ICT), there is separation of the cranial sutures, wide fontanels and increased head circumference.
- The **Macewen's** or **crackpot sign** indicates raised intracranial pressure after sutures and fontanel have closed.
- Papilledema is unusual in infant unless the increase in intracranial pressure is very rapid.
- Botulism causes acute flaccid paralysis → floppy infant which is not a normal finding.
- The knee jerk in an infant may produce a crossed adductor response (tapping the patellar tendon in one leg causes contraction in the opposite extremity), which, if present, does not become abnormal until 6-7 mo of age.
- When the upper extremity of a normal term infant is pulled gently across the chest, the elbow normally does not quite reach the

midsternum (scarf sign). The elbow of a hypotonia infant extends beyond the midline with ease"

- The parachute reflex is demonstrated by suspending the child by the trunk and by suddenly producing forward flexion as if the child were to fall. The child spontaneously extends the upper extremities as a protective mechanism. The parachute reflex appears before the onset of walking.

188. Which vaccine is recommended at 2 years of age according to latest IAP guidelines:

a) MMR

b) Pneumococcal conjugate

c) Varicella Rubella

d) Booster of Typhoid Conjugate Vaccine

e) IPV booster

Correct Answer - D

Ans.(d) Booster of Typhoid Conjugate Vaccine

Recommended age at which the vaccines should be received and type of vaccine:

AGE	VACCINE
At Birth	Hepatitis B
	• DTaP - Diphtheria, Tetanus, Acellular Pertussis
	• IVP - Inactivated Polio vaccine
2 months	• Hepatitis B
	• Pneumococcal vaccine
	• HIB - *Haemophilus* influenza Type B
	• Rotavirus vaccine
	• DTaP
	• IVP
4 months	• Pneumococcal vaccine
	• HIB
	• Rotavirus vaccine

6 months	• DTaP • IVP • Hepatitis B • Pneumococcal vaccine • HIB • Influenza vaccine** • Rotavirus vaccine
12 months	• MMR - Measles, Mumps, Rubella • Pneumococcal vaccine • Hepatitis A
15 months	• DTaP • HIB • Varicella
18 months	Hepatitis A
2 years	Booster of Typhoid Conjugate Vaccine
4 to 6 years of age	• DTaP • MMR • IVP • Varicella
11 years of age to adult	• Tdap • Meningococcal vaccine • HPV (human papilloma vaccine)

189. A child is presenting features of rickets including changes on bones and has hypophosphatemia. Which of the following is true:

a) It is commonly caused by X linked recessive disorder

b) Normal zone of provisional calcification adjacent to the metaphysis is present

c) There is defect of mineralization of matrix

d) CRF maybe the cause

e) Renal tubule dysfunction leads to hypophosphatemia

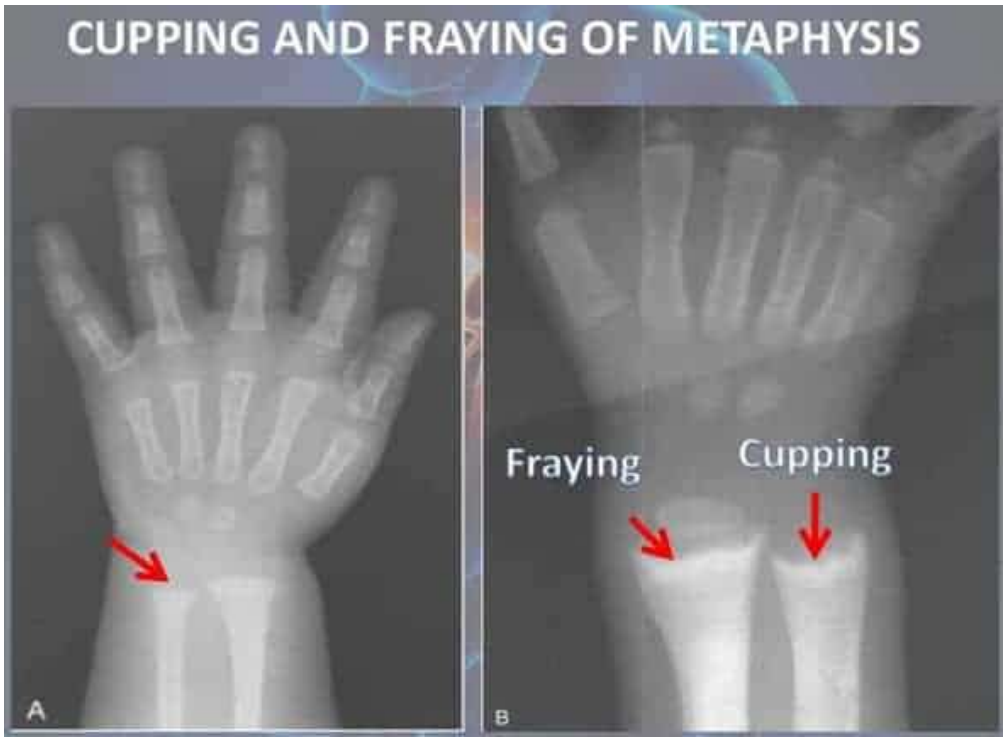
Correct Answer - C:E

Ans.(c)There is defect of mineralization of matrix, (e) Renal tubule dysfunction leads to hypophosphatemia

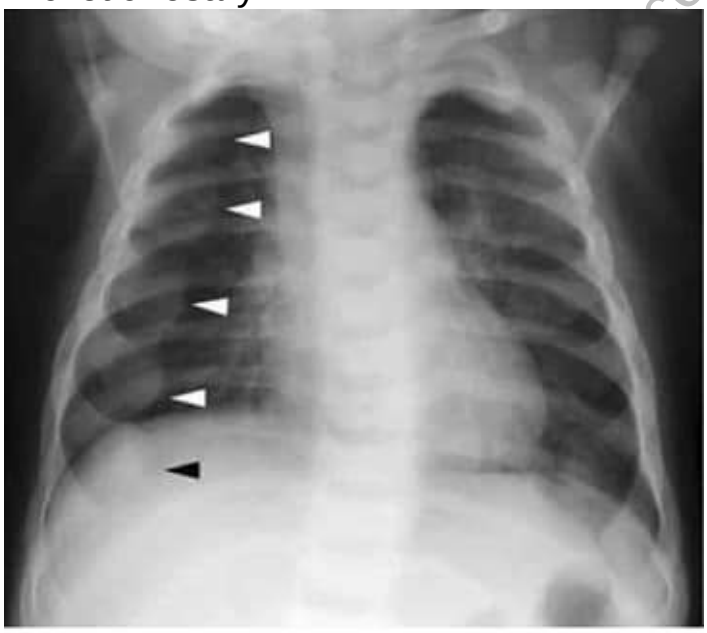
- X-linked. hypophosphatemic rickets (XLH) inherited in dominant manner(not recessive)
- Radiological changes are characteristically seen at metaphysis.
- The first change is loss of normal zone of provisional calcification adjacent to the metaphysis.
- Rickets, a disease of growing bone, occurs in children only before fusion of the epiphyses, and is due to unmineralized matrix at the growth plates.

RADIOGRAPHIC FINDINGS:

- Thickening and widening of epiphysis
- Cupping and fraying of metaphysis



- Irregular metaphyseal margins
- Flaring of anterior ends of ribs
- Ricketic rosary



'Rachitic rosary': costochondral junction enlargement (arrowheads)

- Bowing of diaphysis

190. Which of the following is/are true about atrial septal defect(ASD):

a) Ostium primum is most common type

b) Surgery usually done before 3 year

c) Second heart sound-Wide and fixed

d) Soft delayed diastolic rumble at left lower left sternal border

e) None

Correct Answer - B:C:D

Ans. (b) Surgery usually done before 3 year, (c) Second heart sound-Wide and fixed, (d) Soft delayed diastolic rumble

Clinical manifestations of ASD

- Patients with ASD are generally asymptomatic.
- Mild effort intolerance and respiratory tract infection may occur.
- CHF is rare.

Physical examination

- Parasternal impulse
- Systolic thrill at 2nd left interspace.
- Accentuation of S, due to loud tricuspid component.
- Wide split and fixed S2.
- Ejection systolic murmur at the second and third left interspaces.
- Delayed diastolic murmur at the lower left sternal border.
- ASD with mitral stenosis → Lutembacher syndrome.

Chest x-ray in ASD

- Mild to moderate cardiomegaly artery segment.
- Prominent pulmonary
- Right atrial and right ventricular enlargement.

- Relatively small aortic shadow
- Plethoric lung fields.

191. Risk factor for Neural tube defect is/are:

a) Diabetic mother

b) MTHFR mutation

c) Antiepileptic drug intake

d) Methotrexate intake

e) All

Correct Answer - E
Ans. E. All A,Diabetic mother B,MTHFR mutation C,Antiepileptic drug intake D,Methotrexate intake
ETIOLOGY:

- Teratogens-(hyperthermia, sulphas, antihistaminic, nutrition deficiencies and anticonvulsants use)
- Most strongly tied = carbamazepine, **valproic acid** (folate antagon)
- Folate deficiency

192. True about breast milk jaundice is/are:

a) Appears after week

b) Typically bilirubin level is around 10-20 ng/d1

c) Phototherapy is useful

d) Managed conservatively

e) Diaper staining is presenting feature

Correct Answer - A:B:C:D

Ans. (a) Appears after 1 week, (b) Typically bilirubin level is around 10-20 ng/d1 (c) Phototherapy is useful, (d) Managed conservatively

BREAST MILK JAUNDICE:

- Occurs later in new born period, with bilirubin level peaking in 6th to 14th days.
- First, at birth, the gut is sterile, and normal gut flora takes time to establish.

Breast milk contains:

- Glucuronidase → Increase deconjugation and enterohepatic recirculation of bilirubin.
- High epidermal growth factor (EGF) → Increase Bilirubin uptake in the gut (enterohepatic circulation)
- Second, breast-milk of some women contains 3-alpha-20-beta pregnanediol.
- It inhibits uridine diphosphoglucuronic acid (UDPGA) glucuronyl transferase responsible for conjugation and subsequent excretion of bilirubin.
- In the newborn liver, activity of glucuronyl transferase is only at 0.1-1% of adult levels, so conjugation of bilirubin is already reduced.

- Third, lipoprotein lipase in breast milk produces increased FFA that inhibit hepatic glucuronyl transferase, which decreases conjugation of bilirubin.

TREATMENT:

Phototherapy:

- Any newborn with a total serum bilirubin greater than 359 µmol/l (21 mg/dL) should receive phototherapy

193. High risk infant are:

a) Birth order > 3

b) Twinning

c) Birth weight < 3 kg

d) Failure to gain weight for 3 consecutive months

e) Artificial feeding

Correct Answer - B:C:E

Ans. (b) Twinning, (d) Failure to gain weight for 3 consecutive months, (e) Artificial feeding

High risk infant risk

- Birth weight less than 2.5 kg
- Twins
- Birth order 5 or more
- Artificial feeding
- Weight below 70% of expected weight (i.e II and III degree of malnutrition)
- Failure to gain weight during three successive months
- Children with PEM, diarrhoea Working mother / one parent

194. True about cephalohematoma:

a) Maximum at birth then regress

b) Occurs due to forcep injury to periosteum

c) Edematous swelling of soft tissue

d) Localized collection of blood below periosteum

e) May extend across the midline and across suture lines

Correct Answer - B:D

Ans. (b) Occurs due to forcep injury to periosteum, (d) Localized collection of blood below periosteum

Cephalohematoma :

- It is caused by injury to the periosteum of the skull during labor and delivery.
- This leads to development of hemorrhage over one or both parietal bones with palpable edges appreciated as the blood reaches the limits of the periosteum.
- It is a collection of blood In b/w the pericranium and. the flat bone(subperiosteal) of the skull usually unilateral and, over a parietal bone

195. True about newborns:

a) Apgar score provide an immediate estimate of the physical condition of the baby

b) APGAR scoring is done at l min

c) APGAR scoring at 5 min has no prognostic value

d) Normal respiratory rate is RR is 30-60 breaths/min

e) Normal heart rate > 100 beats/min

Correct Answer - A:B:D:E

Ans. a. Apgar score provide an immediate estimate of the physical condition of the baby; b. APGAR scoring is done at l min; d. Normal respiratory rate is RR is 30-60 breaths/min; e. Normal heart rate > 100 beats/min

APGAR:

- A baby's first test
- Quick assessment of the newborn's overall well-being
- Given one-minute after birth and five minutes after birth
- Rates 5 vital areas

APGAR at 1 min, indicators for neonatal resuscitation

- Later times APGAR score (after 5 minutes) indicates about long term neurological damage (not neonatal mortality)

Signs	**0**	**1**	**2**
Heartbeats per minute	Absent	Slow (<100)	>100
Respiratory effort	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion of extremities	Active motion
	No		

Reflex irritability	No response	Grimace	Cry or cough
Color	Blue or pale	Body pink, extremities blue	Completely pink

196. Maximum risk to foetus occurs when maternal infection with rubella occurs during which of the following time:

a) 6-12week

b) 12-l8week

c) 14-20week

d) 20-24week

e) 32-36week

Correct Answer - A

Ans. (a)6-12week

- In general, the earlier in pregnancy infection occurs, the greater the damage to the fetus. Maximum damage to the fetus occurs when infection is acquired in the first trimester of pregnancy.
- During acute rubella in pregnancy, the rate of congenital infection is over 90% in the 12 first weeks of pregnancy, approximately 60% in weeks 13 to 17, 25% in weeks 18 to 24 and then increases again during the last month of pregnancy

197. True about paracetamol toxicity in children:

a) Hypernatremia is common side effect of N-acetylcysteine

b) Liver failure may occur after 3-4 days

c) N-acetylcysteine is very less effective if given after 24 hour of paracetamol ingestion

d) N-acetylcysteine be given orally or IV

e) Renal damage also may occur

Correct Answer - B:C:D:E

Ans. b. Liver failure may occur after 3-4 days; c. N-acetylcysteine is very less effective if given after 24 hour of paracetamol ingestion; d. N-acetylcysteine be given orally or IV; e. Renal damage also may occur

- Acetaminophen intoxication ls a common cause of acute liver failure in adolescents and adults.
- Acetaminophen toxicity results from the formation of a highly reactive intermediate metabolite, N-acetyl-p-benzoquenoneimine (NAPQI).
- The acute toxic dose of acetaminophen is generally considered to be >200 mg/kg ln children younger than 12 yr of age, a single ingestion of >7.5 g is considered a minimum toxic dose in adolescents and adults.
- Adolescents have a higher incidence of toxic plasma concentration after ingestion than do children, and their exposures are often associated with intentional overdose.
- An IV preparation of NACLs also available

- N-acetyl cysteine can cause nausea & vomiting and diarrhoea or constipation.
- Rarely, it can cause rashes, fever, headache, drowsiness, low blood pressure and liver problems.

198. All are true about anterior cruciate ligament except?

a) Commonly occurs as a result of twisting force

b) May be associated with Segond fracture

c) Rarely associated with meniscal injury

d) Lachman test is highly sensitive test for tear

e) None

Correct Answer - C

Ans.(c) Rarely associated with meniscal injury

Symptoms:

Signs and symptoms of an ACL injury usually include:

- A loud "pop" or a "popping" sensation in the knee
- Severe pain and inability to continue activity
- Rapid swelling
- Loss of range of motion
- A feeling of instability or "giving way" with weight bearing

Complications

- Higher risk of developing osteoarthritis in the knee. Arthritis may occur even if you have surgery to reconstruct the ligament.
- Segond fracture due to avulsion at the anterolateral capsular attachment. Segond fractures have a very high association with ACL tears and, meniscal injuries

Diagnosis:

- Injury to tear of anterior cruciate ligament can be detected using lachman and anterior drawer test.
- Lachmann test is a similar test to anterior drawer test in which

anterior glide of the tibia is judged with the knee in 10-15 degrees of flexion.

199. Pirani scoring of CTEV includes all except?

a) Curvature of the medial border of the foot

b) Severity of the medial crease

c) Position of the lateral part of the head of the talus

d) Emptiness of the heel

e) Severity of the posterior crease

Correct Answer - A

Ans.(a) Curvature of the medial border of the foot

PIRANI SCORING

- The Pirani score is a simple, easy to use tool for assessing the severity of each of the components of a clubfoot.

Pirani Scoring:

The components are scored as follows:

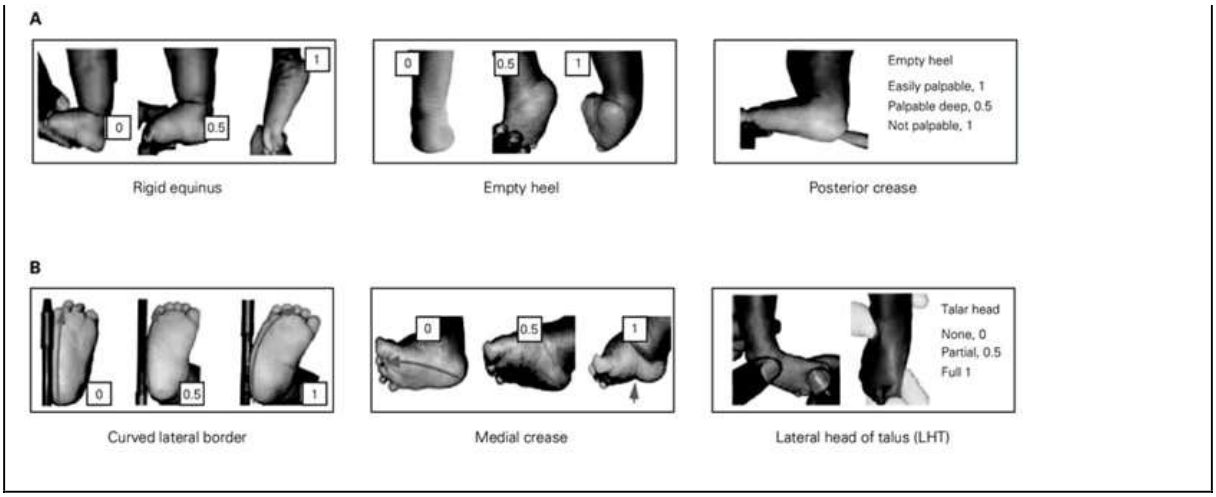
- Each component may score 0, 0.5 or 1
- Hind foot contracture score (HCFS):

Mid foot contracture score (MFCS):

.. Posterior crease
2. Empty heel
3. Rigid equinus

Mid foot contracture score (MFCS):

.. Medial crease
2. Curvature of lateral border
3. Position of head of talus



200. True about tuberculosis of Spine:

a) Middle path regimen is used in management

b) Posterior elements of the spine is most commonly affected

c) Commonly spread by hematogenous route from lung

d) Acute onset paraplegia has worse prognosis

e) Lower thoracic and upper lumbar is most common site

Correct Answer - A:C:E

Ans. a. Middle path regimen is used in management; C. Commonly spread by hematogenous route from lung e. Lower thoracic and upper lumbar is most common site

Route:

- Lymphogenous and hematogenous spread has been implicated. in thoracolumbar lesions.

Site:

- Upper thoracic spine is the most common site of spinal TB in children, the lower thoracic and upper lumbar vertebrae are usually affected in adults
- Paradiscal is the commonest type.
- Acute onset paraplegia has a better prognosis

Management:

.. Rest,
2. Drugs Intensive Phase: HRO (5-6 months); Continuation Phase: HZ (3-4 months) + HR(4-5 months); Prophylactic Phase: HE (4-5 months),
3. Radiological Follow-up (X-ray, MRI), d. Gradual Mobilisation +/- Spinal braces. management of Abscess/ Sinuses,
4. Management of Neurological complications

5. Surgery(Excisional surgery Definitive Surgery: Indication of Surgery in Pott's spine),
6. Post-operative care

201. Which of the following is/are indication of surgical management of fracture of shaft of humerus:

a) Fracture in elderly

b) Radial nerve involvement after manipulation

c) Pathological fractures

d) Vascular injury

e) Multiple fractures

Correct Answer - B:C:D:E

Ans. (b) Radial nerve involvement after manipulation, (c) Pathological fractures, (d) Vascular injury, (e) Multiple fractures

Fractured Shaft of Humerus: Operative Treatment - Indications :

Severe multiple injures :

- An open fracture .
- Segmental fractures .
- Displaced intra-articular extension of the fracture
- A pathological fracture .
- A floating elbow(simultaneous unstable humeral and forearm fractures)
- Radial nerve palsy after manipulation .
- Non-union
- Problems with nursing care in a dependent person

202. Which of the following is/are true about Ewing sarcoma:

a) Vascular origin

b) Ewing's sarcoma is second most common primary malignant bone tumour in children after Osteosarcoma

c) Metaphysis of long bone is most common site

d) Fever and weight loss may be present

e) Surgery is very useful in management

Correct Answer - B:D

Ans. b. Ewing's sarcoma is second most common primary malignant bone tumour in children and adolescent after Osteosarcoma; d. Fever and weight loss may be present

Ewing Sarcoma:

- Ewing's sarcoma arises from primitive neuroectoderm.
- Most common Site: Femur diaphysis > tibia diaphysis

Clinical features:

- Occurs between 10-20 years of age**.**
- The patient presents with pain and swelling.
- History of trauma preceding onset, but it is usually incidental.
- Often there is an associated **fever,** in which case it may be confused with osteomyelitis.

Treatment

- This is a **highly radio-sensitive tumour** melts quickly but recurs.
- Treatment consists of control of local tumour by **radiotherapy** , and control of metastasis by **chemotherapy.**
- The most common primary malignant **bone**

tumors are **osteosarcoma** (35%), chondrosarcoma (25%), and Ewing's sarcoma (16%).

- Less frequently (≤ 5%) occurring tumors are chordoma, malignant fibrous histiocytoma of bone, and **fibrosarcoma** of bone.
- The most common malignant pediatric bone tumors include **osteosarcoma** and **Ewing sarcoma**.

203. 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.

204. Spur sign is/are seen in:

a) Supracondylar fracture of humerus

b) Radial head fracture

c) Acetabulum fracture of pelvis

d) Talus fracture

e) None

Correct Answer - C

Ans. (c) Acetabulum fracture of pelvis

- Spur cells-They are irregularly distorted red cells containing several irregularly distributed thorn like projections.
- Cells with this morphologic abnormality are also called acanthocytes.
- They are seen in Splenectomised patients and patients with liver disease.

205. Cause(s) of avascular necrosis of femoral Head:

a) Fracture of femoral neck

b) Steroid use

c) alcohol use

d) Sickle cell disease

e) Caisson disease

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

Answer: A,Fracture of femoral neck B,Steroid use C,alcohol use D,Sickle cell disease E, Caisson disease

Cause of avascular necrosis of femoral head:

- Idiopathic-commonest
- Alcoholism
- Steroid therapy
- Sickle cell disease
- Patient of renal dialysis
- Patient on anticancer drug
- Post-partum necrosis
- Goucher's disease
- Caisson's disease

206. Which of the following are not included in Gurd's criteria?

a) Central nervous system depression disproportionate to hypoxaemia

b) Tachycardia<1l0bpm

c) Deep vein thrombosis

d) Axillary or subconjunctival petechiae

e) Hypoxaemia Pao_2 < 60m Hg, Fi_{02}=0.4

Correct Answer - C
Ans. c. Deep vein thrombosis

207. Correct statement about hand infection?

a) Opening of Felon by fish month incision is preferred incision technique

b) Felon is middle volar pulp infection

c) Apical subungual infection- V-shaped piece is removed from the center of the free edge of the nail along with a little wedge of the full thickness of the skin overlying the abscess

d) When the pus extends beneath the nail, it is necessary to remove the some part of nail for adequate drainage of pus

e) None

Correct Answer - C:D

Ans. c. Apical subungual infection- V-shaped piece is removed from the center of the free edge of the nail along with a little wedge of the full thickness of the skin overlying the abscess ; d. When the pus extends beneath the nail, it is necessary to remove the some part of nail for adequate drainage of pus

- In apical subungual infection: For drainage, a small V shaped piece ls removed from the centre of that free edge of the nail along with a little wedge of the full thickness of the skin overlying the abscess.
- In acute paronychia: When the pus extends beneath the nail, it is necessary to remove the proximal one-third of the nail for adequate drainage.
- DO NOT perform a "fish mouth" incision since this may results in: Unstable finger pad, neuroma., and/or loss of sensation"
- The felon should be incised in the area of maximum swelling and tenderness.

208. True about anatomy of vagina :

a) Covered by columnar epithelium

b) Covered by non-keratinized stratified squamous epithelium

c) Vaginal secretion is from transudation of vaginal epithelium

d) Supplied by cervicovaginal branch ofthe uterine artery

e) Anterior wall is longer than posterior wall

Correct Answer - B:C:D

Ans. b. Covered by non-keratinized stratified squamous epithelium; c. Vaginal secretion is from transudation of vaginal epithelium; d. Supplied by cervicovaginal branch of the uterine artery

HISTOPATHOLOGY:

The vagina is composed of 4 histological layers (internal to external):

- Nonkeratinized stratified squamous epithelium
- Elastic lamina propria
- Fibromuscular layer
- Adventitia

BLOOD VESSEL AND NERVE SUPPLIES:

- Arterial supply to the vagina is via the uterine and vaginal arteries; both branches of the internal iliac artery.
- Venous return : vaginal venous plexus, which drains into the internal iliac veins via the uterine vein.
- Lymphatic drainage : iliac and superficial inguinal lymph nodes.
- The parasympathetic and sympathetic nerves supplying the vagina are derived from the uterovaginal nerve plexus. The uterovaginal plexus lies in the base of the broad ligament,either side of the

supravaginal part of the cervix.

- Inferior fibres from the uterovaginal plexus supply the superior part of the vagina. These are derived from the inferior hypogastric plexus and the pelvic splanchnic nerves.
- The inferior part of the vagina is innervated by a branch of the pudendal nerve called thedeep perineal nerve.

209. Which of following is/are not fertility awareness based methods:

a) Withdrawal method

b) Rhythm method

c) Cervical mucus method

d) MTP pill

e) Sympto-thermal method

Correct Answer - A:D

Ans.(a) Withdrawal method, (d) MTP pill

All family planning methods that attempt to identify fertile time in each cycle and then modify sexual behaviour are called Fertility Awareness Based Methods (FAB)

They are as follows:

- Rhythm method/calendar method
- Basal body temperature method
- Cervical mucus method/Billing method .
- Sympto-Thermal method
- Standard days method using cycle beads
- Two day method
- Ovulation detection
- Coitus interruptus
- Lactation amenorrhoea method (LAM)
- Abstinence

210. Predisposing factor(s) for obstetrical haemorrhage is/ are:

a) Obesity

b) Placental abruption

c) Oligohydramnios

d) Smoking

e) Instrumental delivery

Correct Answer - A:B:D:E

Ans.(a) Obesity, (b) Placental abruption, (d) Smoking, (e) Instrumental delivery

Predisposing factor(s) for obstetrical haemorrhage:

Abnormal Placentation

- Placenta previa
- Placental abruption
- Placenta accreta/increta/percreta
- Ectopic pregnancy
- Hydatidiform mole

Trauma During Labor and Delivery

- Episiotomy
- Complicated vaginal delivery
- Low- or mid forceps delivery
- Cesarean delivery or hysterectomy
- Uterine rupture-risk increased by:
- Previously scarred uterus
- High parity
- Hyperstimulation

- Obstructed labor
- Intrauterine manipulation
- Mid forceps rotation

Small Maternal Blood Volume

- Small women
- Pregnancy hypervolemia not yet maximal
- Pregnancy hypervolemia constricted
- Severe preeclampsia
- Eclampsia

Other Factors

- Obesity
- Native American ethnicity
- Previous PPH

Uterine Atony

- Overdistended uterus
- Large fetus
- Multiple fetuses
- Hydramnios
- Distention with clots
- Anesthesia or analgesia
- Halogenated agents
- Conduction analgesia with hypotension
- Exhausted myometrium
- Rapid labor
- Prolonged labor
- Oxytocin or prostaglandin stimulation
- Chorioamnionitis
- Previous uterine atony

Coagulation Defects- Intensify Other Causes

- Placental abruption
- Prolonged retention of dead fetus
- Amniotic fluid embolism
- Saline-induced abortion
- Sepsis syndrome
- Severe intravascular hemolysis
- Massive transfusions
- Severe preeclampsia and eclampsia

- Congenital coagulopathies
- Anticoagulant treatment

211. All are true about puerperal sepsis except:

a) Temperature > 38^0C (100.4^oF)

b) Caesarean section has no increased risk for sepsis

c) Group A beta-hemolytic streptococcus is one of common causative organism

d) Instrument delivery increases risk

e) Retainedplacenta is a cause

Correct Answer - B

Ans.(b) Caesarean section has no increased risk for sepsis

- Puerperal pyrexia — is defined as a rise of temperature reaching 100.4° F (38° C) or more (measured orally) on 2 separate occasions at 24 hours apart (excluding first 24 hours) within first 10 days following delivery.
- Any infection of genital tract which occurs as a complication of delivery is called as Puerperal sepsis.
- Most common site of Puerperal infection — Placental site.
- Most common manifestation of Puerperal infection — Endometritis.
- Most common cause of Puerperal sepsis — Streptococcus.
- Most common route of infection — Direct spread.
- Caesarean section is easily the most common identifiable risk factor for development of puerperal infection.

212. True statement regarding investigation in endometrial cancer:

a) MRI is superior to CT in detecting myometrial involvement

b) CT is superior to MRI in detecting omental metastasis

c) USG is initial investigation to be performed

d) USG is the best investigation

e) None

Correct Answer - A:B:C

Ans. a. MRI is superior to CT in detecting myometrial involvement ; b. CT is superior to MRI in detecting omental metastasis and c. USG is initial investigation to be performed

Diagnosis of Endometrial Carcinoma

- CT scan of pelvis and abdomen may be used to detect lymph node metastases" .
- MRI candetect Myocardial invasion
- Sensitivity of PET in detecting pelvic node metastases is 80% compared to MRI(70%) and CT(48%)"
- "CT is useful in the diagnosis of lymph node metastasis and depth of myometrial invasion in endometrial cancer"
- "MRI is superior to CT or ultrasound in diagnosing adenomyosis, myomas and endometrial cancer(including myometrial invasion)

213. True about Delivery, of HIV +vewoman -

a) Vaginal delivery has lower risk for transmission of HIV to child than CS

b) Vaginal delivery has higher risk for transmission of HIV to child than CS

c) Instrumentation has no risk of increased infection

d) Vertical transmission is less in cases with preterm birth

e) NONE

Correct Answer - B

Ans.(b) Vaginal delivery has higher risk for transmission of HIV to child than CS

- Vaginal and emergency caesarean section deliveries, prematurity, and low CD4 cell count were most strongly associated with infants infection status in univariate analyses .
- Children delivered vaginally or by emergency caesarean section were more likely to be infected than those delivered by elective caesarean section, with a reduction in risk of 79% associated with the latter (P<0.001).
- Similarly, infants delivered before 37 weeks were more than twice as likely to be infected than infants who were not premature.
- Caesarean section before onset of labour and rupture of membranes approximately halves the risk of mother-to-child transmission.

Transmission rate:

- During pregnancy: 5–10%
- During labour and delivery:10–15%
- During breastfeeding:5–20%
- Overall without breastfeeding:15–25%

- Overall with breastfeeding to six months:20–35%
- Overall with breastfeeding to 18–24 months:30–45%

214. Which of the following is/are true about combined oral contraceptive pills:

a) Reduces risk of venous thromboembolism

b) Reduces risk of benign breast disease

c) Protects against endometrial cancer

d) Decreased Bone density

e) None

Correct Answer - B:C

Ans.(b)Reduces risk of benign breast disease, (c) Protects against endometrial cancer

OCPS

ADVANTAGES:

- Controls fertility
- Treats Menorrhagia & polymenorrhoea.
- Relieve dysmenorrhoea and premenstrual tension
- Prevents anaemia
- Lowers chances of
  - Fibrocystic disease
  - Ovarian cyst
  - Ovarian ,uterine & anorectal malignancy
  - PID
  - Ectopic pregnancy
- Useful in acne, PCOD and endometriosis
- Prevent RA

Non contraceptive benefits of OCPs:

- Cycle stabilization

- Cure of menstrual disorder- useful in menorrhagia & polymenorrhea
- Prevents anemia.
- Reduces the incidence of ectopic pregnancy.
- Protection against cancer – Ovarian ,Endometrial
- Benign tumour - Benign breast disease, Ovarian functional cyst, Fibromyoma uterus
- Protects - PID, Anemia, Endometriosis, PCOD, Acne, hirsutism, Rheumatoid arthritis, Osteoporosis

215. True about amniocentesis and Chorionic villus sampling:

a) In 1st trimester, amniocentesis is better than Chorionic villus sampling

b) 2nd trimester amniocentesis has less foetal loss than Chorionic villus sampling

c) Amniocentesis may result in oligohydraminos

d) Amniocentesis in lst trimester has lower risk of foetal loss than 2nd trimester amniocentesis

e) Amniocentesis in lst trimester has more risk of talipes

Correct Answer - B:C:E

Ans. b. 2nd trimester amniocentesis has less foetal loss than Chorionic villus sampling, c. Amniocentesis may result in oligohydraminos & e. Amniocentesis in lst trimester has more risk of talipes

Advantages of CVS over amniocentesis :

- The main advantage of CVS is that, results are available earlier in pregnancy. which lessen parental anxiety when results are normal.
- Allows earlier and safer methods of pregnancy termination when results are abnormal.

CVS Risks :

- Chances of fetal loss / abortion.
- If performed earlier than 9 weeks (typically around 7 weeks), increased chances of oromandibular hypogenesis and limb reduction defects.
- It can cause rupture of membranes. leakage of amniotic fluid and

infection.
- Rh isoimmunization can occur in Rh negative females.

Complications of Amniocentesis:

- Chorioamnionitis (0.1%)
- Procedure related fetal loss
- Leakage of amniotic fluid occurs in about 2% patients, but is usually self resolving. Persistent leakage of amniotic fluid causing oligohydramnios
- Talipesequinovarus
- Vaginal bleeding (2 -3%)
- Rh isoimmunization
- Preterm labor
- Respiratory distress
- Intrauterine death (IUD)

216. During external radiation therapy for cervical cancer which lymph node is/ are excluded?

a) External iliac lymph node

b) Common iliac lymph node

c) Internal iliac lymph node

d) Sacral lymph node

e) Obturator lymph node

Correct Answer - C

Ans. (c) Internal iliac lymph node

- The goal of external irradiation in cervical cancer is to sterilize metastatic disease to pelvic lymph nodes and the parametria and/ or to decrease the size of the cervix to allow optimal placement of intracavitary radioactive sources.
- Patients with known or suspected metastatic disease to periaortic lymph nodes may be considered for extended field irradiation.

Lymphatic Spread In cervical cancer:

- The cervix is drained by preureteral, Postureteral, and uterosacral lymphatic channels.
- The following are considered first station nodes: obturator external lilac, hypogastric, parametrial, presacral, and common iliac.
- Para-aortic nodes are second station, are rarely involved in the absence of primary nodal disease, and are considered metastases .

217. Which of the following is true about vulvodynia:

a) Surgery is usually done for localized vulval lesion

b) Pain without any significant lesion

c) May be associated with irritable bowel syndrome

d) Tricyclic antidepressant is useful

e) Psychological factor is associated

Correct Answer - B:C:D:E

Ans. (b) Pain without any significant lesion, (c) May be associated with irritable bowel syndrome, (d) Tricyclic antidepressant is useful, (e) Psychological factor is associated

- Vulvodynia is chronic pain of the vulva (external female genitalia) in the absence of localized infection. It is often associated with irritable bowel syndrome (IBS)

Aetiology:

- Swelling of or injury to the nerves of the vulva.
- Spasms or weakness of the muscles that support the organs of the pelvis.
- A family history of vulvodynia.

Symptoms:

Pain is the main symptom of vulvodynia. Depending on the person, the pain may:

- Be felt only in one spot, such as near the opening of the vagina, and only when something touches that area. This is called localized vulvodynia.
- Pain may be felt on or around most of the vulva, even when nothing

touches those areas. This is called generalized vulvodynia.

- Be constant or come and go for months or even years.
- Be mild or very bad.
- Be felt during and after sex.
- Flare up when you sit on a bicycle, put in a tampon, or wipe your vulva.

Other symptoms may include:

- Burning or stinging.
- Itching.
- Swelling.
- Throbbing.
- Rawness.

Treatment:

- **Medicines:**
- **Physical therapy**
- Behaviour therapy
- Psychosexual counselling
- **Oestrogen creams**
- **Lidocaine jelly**

Surgery is contraindicated

- Tricyclic **A**ntidepressants(amitriptyline, gabapentin)
- Seizure medicines
- Nerve blocks
- Medicated creams
- Antihistamines can help relieve itching.

218. Indications for in-vitro fertilization(IVF):

a) Bilateral tube blockage

b) Normal male factor

c) Hostile cervical factor

d) Proximal tubal block

e) Premature ovarian insufficiency

Correct Answer - A:D:E

Ans. (a) Bilateral tube blockage, (d) Proximal tubal block, (e) Premature ovarian insufficiency

Indications of in-vitro Fertilization (IVF)

- Mild endometriosis
- Blocked fallopian tubes or failed tubal surgery
- Failed intrauterine or fallopian insemination
- Immunological factor
- In male and female
- Abnormal semen finding .
- Idiopathic or unexplained male or female infertility
- Donor semen or sperm

219. Which of the following is/are true about management of pregnancy with NYHA class 3 or 4 heart disease:

a) Delivery should be done in specialised hospitals

b) Often tolerate major surgical procedures poorly

c) Caesarean delivery is limited to obstetrical indications

d) Mortality is 5-20%

e) Epidural is preferred for delivery & labour pain management

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

Ans. A,Delivery should be done... B,Often tolerate major surgical ... C,Caesarean delivery is limited ... D,Mortality... E,Epidural is preferred for delivery ...

New York Heart Association (NYHA) classification:

- NYHA Class I: Asymptomatic(mortality 0-1%)
- NYHA Class II: Symptoms with greater than normal activity(mortality 5-15%)
- NYHA Class III: Symptoms with regular activity(mortality 25-50%)
- NYHA Class IV: Symptoms at rest(mortality 25-50%)

Management of NYHA class III & IV

- General management: Multidisplinary team approach
- Place of therapeutic termination
- Admission for grade III and IV: Throughout pregnancy.

Cardiac indications of CS:

- Coarctation of aorta
- Aortic dissection or aneurysm,
- Aortopathy with aortic root>4 cm

- Warfarin treatment within 2 weeks
- Anaesthesia: GA or epidural(preferred)
- Vaginal delivery is preferred in most cases, and lab or induction can usually be d.one safely
- Inability to tolerate major surgical procedures.

220. Which of the following is changes during pregnancy:

a) In last trimester blood volume increase by 50%

b) Cardiac output increase by 20% in last trimester

c) Hemodynamic changes in pregnancy can cause CHF following during labour and following delivery in pre-existing cardiac lesions

d) Hypercoagulability occurs

e) None

Correct Answer - A:C:D

Ans. (A) In last trimester blood volume increase by 50% ; (C) Hemodynamic changes in pregnancy can cause CHF following during labour and following delivery in pre-existing cardiac lesions; (D) Hypercoagulability occurs

HEMATOLOGICAL CHANGES:

PARAMETERS	**CHANGES**
Blood volume (mL)	↑ by 1500 (30–40%)
Plasma volume (mL)	↑ by 1250(40–50%)
Red Cell volume (mL)	↑ by 350(20–30%)
Total Hb (g)	↑ by 85 (18–20%)
Serum Iron	↓
TIBC	↑
Hematocrit	Diminished
Erythropoietin	↑
WBC count	↑(Neutrophilic leukocytosis-8,000 to

	20,000/mm3)
Platelet count and volume	unchanged
Coagulation factors	VII, VIII , X,plasma fibrinogen: ↑ Antithrombin III , XI, XIII: ↓
ESR	↑
Plasma fibrinolytic activity	↓
Plasma Protein Concentration	↓(Albumin↓30%; Globulin↑; A:G ↓)

CARDIOVASCULAR CHANGES:

Cardiac output (L/min)	↑ by 40% (maximum at 30th week)
Stroke volume (mL)	↑ by 27%
Heart rate (per minute)	↑ by17%
Blood pressure	Unaffected or mid-pregnancy drop of diastolic pressure by 5–10 mm Hg
Venous pressure	↑ 100%
Colloid oncotic pressure (mm Hg)	↓ by 14%
Systemic vascular resistance (SVR)	↓ by 21%
Pulmonary vascular reistance (PVR)	↓ by 34%
Total extracellular volume	↑ by 16%

- **Shift of apical impulse laterally and upwards in the left 4'h intercostal space**

221. True statement about Breech delivery:

a) Vasa previa is a complication

b) Fetal congenital malformation increases breech risk

c) Increases fetal and maternal morbidity

d) Oligohydramnios increases breech risk

e) Increases risk of hip joint dislocation of baby

Correct Answer - B:C:D:E

Ans. (b) Fetal congenital malformation increases breech risk (c) Increases fetal and maternal morbidity (d) Oligohydramnios increases breech risk (e) Increases risk of hip joint dislocation of baby

ETIOLOGY:

- Prematurity

Factors preventing spontaneous version:

- Breech with extended legs
- Twins
- Oligohydramnios
- Septate or bicornuate uterus
- Short cord, relative or absolute
- IUD of fetus.

Favourable adaptation:

- Hydrocephalus
- Placenta previa
- Contracted pelvis
- Cornu-fundal attachment of the placenta

Undue mobility of the fetus

- Hydramnios,

- Multipara with lax abdominal wall.
- Fetal abnormality: Trisomies 13, 18, 21, anencephaly and myotonic dystrophy

BIRTH INJURIES ASSOCIATED WITH BREECH DELIVERY COMPLICATIONS

- Brain damage
- Spinal cord injury
- Fetal distress
- Umbilical cord prolapse
- Seizures
- Cerebral palsy
- Compressed umbilical cord
- Nerve damage
- Umbilical cord wrapped around baby's neck
- Oxygen deprivation

222. Complications of shoulder dystocia?

a) Humerus fracture

b) Brachial plexus injury

c) Birth asphyxia

d) Sacroiliac joint dislocation of mother

e) All

Correct Answer - E

Ans. E. All

Complication of shoulder dystocia:

Maternal:

- PPH
- Rectovaginal fistula
- Symphyseal separation or diathesis, with or without transient femoral neuropathy
- 3rd or 4th degree episiotomy or tear
- Uterine rupture

Fetal:

- Brachial plexus palsy
- Clavicle fracture
- Fetal death
- Fetal hypoxia, with or without permanent neurologic damage
- Fracture of the humerus

223. Which of the following is true about monozygotic twin formation:

a) If division occurs after embryonic disc formation, it results in conjoint twin

b) If division occur before 72 hrs, it results in formation of diamniotic- dichorionic twins

c) If division occurs b/w 4-8 days, it results in formation of monochorionic monoamniotic twin

d) If division occurs after 8 days-it results in formation of monochorionic monoamniotic twin

e) None

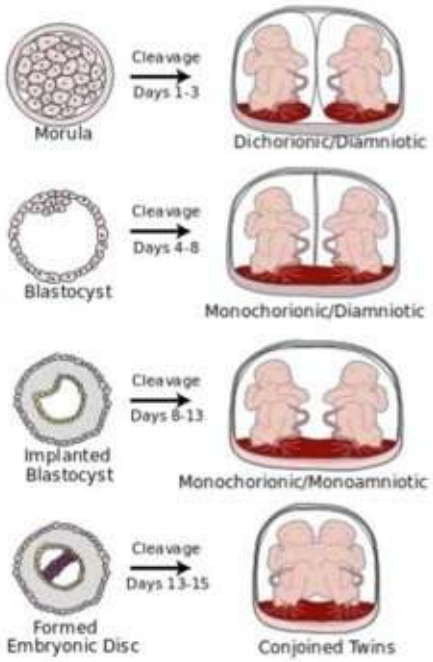
Correct Answer - A:B:C:D

Ans. a. If division occurs after embryonic disc formation, it results in conjoint twin b. If division occur before 72 hrs, it results in formation of diamniotic- dichorionic twins d. If division occurs after 8 days-it results in formation of monochorionic monoamniotic twin

DEVELOPMENT:

- If the division takes place within 72 hours after fertilization the resulting embryos will have two separate placenta, chorions and amnions (D/D)
- If the division takes place between the 4 th and 8 th day after the formation of inner cell mass when chorion has already developed diamniotic monochorionic twins develop (D/M)
- If the division after 8 th day of fertilization, when the amniotic cavity has already formed, a monoamniotic monochorionic twins develop

(M/M)



224. Acantholysis is /are not seen in :

a) Lichen planus

b) Bullous pemphigoid

c) Dermatitis herpetiformis

d) Hailey-Hailey disease

e) Pemphigus vulgaris

Correct Answer - A:B:C

Ans. (A) Lichen planus (B) Bullous pemphigoid (C) Dermatitis herpetiformis

Acantholysis:

- Separation of epidermal cells from each other.
- Acantholytic disorders includes Pemphigus family (including paraneoplastic pemphigus), eosinophilic spongiosis, Darier's disease , Hailey-Hailey's disease (Familial benign chronic pemphigus) and transient acantholytic dermatosis (Grouer's disease), as well as specific histological patterns such as focal acantholytic dyskeratosis and epidermolytic hyperkeratosis.

225. Cutaneous marker(s) of internal malignancy is/are all except:

a) Tripe palms

b) Sign of Leser-Trelat

c) Dermatomyositis

d) Migratory thrombophlebitis

e) Seborrheic patch at back

Correct Answer - E

Ans. E. Seborrheic patch at back

Cutaneous Markers of Internal Malignancies :

Causes:

- Metastases: To skin.
- Genodermatoses: With an increased predisposition to internal neoplasia.
- Exposure to carcinogens: Which result in skin changes as well as internal neoplasia.
- Paraneoplastic syndromes: Are cutaneous reaction patterns associated with internal neoplasia.

226. Nikolsky's sign is/are seen in all except :

a) Pemphigus

b) Hailey-Hailey disease

c) Staphylococcal scalded skin syndrome

d) Toxic epidermal necrolysis

e) Grover disease

Correct Answer - D:E

Ans. (D) Toxic epidermal necrolysis

Nikotsky's sign:

- Application of tangential pressure on normal skin(usually on pretibial area) results in formation of new bulla.

Seen in:

- Staphylococcal scalded-skin syndrome
- Epidermal necrolysis.
- Pemphigus
- Stevens-Johnson syndrome.
- Grover's disease

227. True about acute paronychia:

a) Pus under nail bed

b) Pus may extend to base of nail

c) Swelling of nail fold

d) Candida is most common causative organism

e) None

Correct Answer - A:B:C

Ans. A,Pus under nail bed B,Pus may extend to base of nail & C,Swelling of nail fold

Acute Paronychia:

- **Paronychia:** Inflammation of nail folds.
- **Etiology:** StaphyLococcus enter the nail fold
- **Clinical feature:** Nail fold is swollen, red and tender. Pus visible under nail fold / nail bed.

228. Cnrnnonent of Advanced cardiovascular life support (ACLS) in accordance to AHA 2015 guideline:

a) Chest compression 100-150 per minute

b) Chest compression at least 5 cm/2 inch

c) Vasopressors is used to maintain MAP > 70 mmHg in non-responsive to fluids

d) 1 Breath every 8 seconds

e) Vasopressin is used as vasopressor

Correct Answer - B

Ans. B. Chest compression at least 5 cm/2 inch

- Basic life support (BLS), advanced cardiovascular life support (ACLS), and post-cardiac arrest care all describe a set of skills and knowledge applied sequentially during the treatment of patients who have a cardiac arrest.
- ACLS comprises the level of care between BLS and post-cardiac arrest care

Update recommendations for advanced cardiac life support 2015:

- The combined use vasopressin and epinephrine offers no advantage to using standard-dose epinephrine in cardiac arrest.
- Vasopressin has been removed from the Adult Cardiac Arrest Algorithm-2015 update.

Advanced Cardiac Life Support:

- Continuous chest compressions at a rate of lil)/rnin to 120/min, vnthout pauses for ventilation. The provider delivering ventilation

should provide 1 breath every 6 seconds (10 breaths per minute).
- It may be reasonable to avoid and immediate$r correct hypotension (SBp < 90 mm Hg, MAp < 65 mmHg) during post-cardiac arrest care.

229. Anaesthetic agents(s) having epileptogenic potential:

a) Atracurium

b) Etomidate

c) Enflurane

d) Pethidine

e) Propofol

Correct Answer - A:C:D

Ans. (A) Atracurium (C) Enflurane (D) Pethidine

- **Etomidate:** Does not have epileptogenic potential.
- **Enflurane:** At high doses it produces spike and wave pattern in EEG which culminates into frank tonic-clonic seizure.
- **Atracurium:** Its metabolic product laudanosine**(**Laudanosine Toxicity)- seizures precipitated.
- Ketamlne can elicit seizures in patients with an epileptic diathesis.
- **Propofol:** Significant anticonvulsant activity.

230. True about xenon is are:

a) Environment friendly

b) Cheap

c) Low blood solubility

d) Inert

e) Stable

Correct Answer - A:C:D:E

Ans. (A) Environment friendly (C) Low blood solubility (D) Inert (E) Stable

Advantages and disadvantages of xenon (Xe) anesthesia:

Advantages:

- Inert (probably nontoxic with no metabolism).
- Minimal cardiovascular effects.
- Low blood solubilitY.
- Rapid induction and recovery
- Does not trigger malignant hyperthermia
- Environmental friendly.
- Nonexplosive

Disadvantages:

- High cost
- Low potency {MAC=70%)

231. In gas tubing, rate of turbulent flow depends upon :

a) Viscosity of gas

b) Pressure gradient

c) Length of tube

d) Radius of tube

e) Density of gas

Correct Answer - B:E

Ans. (B) Pressure gradient (E) Density of gas

Turbulent

- Turbulent flow is produced if flow rate is very high or if gas passes through bends, constrictions.
- Flow is rough.
- Reynold's number must exceed to 2000 for turbulence.
- Turbulent flow is more depend on density

232. Gas stored in liquid state in cylinders:

a) Nitrogen

b) Helium

c) CO_2

d) Cyclopropane

e) Nitrous oxide

Correct Answer - C:D:E

Ans, (C) CO_2 (D) Cyclopropane (E) Nitrous oxide

- Oxygen, nitrogen, air and helium are stored in cylinders as gases.
- Nitrous oxide, carbon dioxide and cyclopropane are stored in as liquid in equilibrium with saturated vapour.

Colour of Cylinders:

- O2-Black body with white shoulder
- N2O- Blue
- CO2-Grey
- Cyclopropane-orange
- Helium-Brown
- Air-Grey body with black and white shoulders
- Entonox-Blue body with blue and white shoulders (50% O2. + 50% N2O).

233. True about caudal anesthesia in children:

a) Average distance from the skin to the anterior wall of the sacral canal is 21 mm

b) 0.5 mL/kg dose of bupivacaine is sufficient for lumber and sacral dermatomes block

c) Beyond 6-7 years of age, it is difficult to give and is less successful in comparison to younger children

d) 2-3 cm of epidural catheter is advances through epidural space in continuos infusion

e) Distance from the upper border of the sacral hiatus to the dural sac is 30±10.4mm

Correct Answer - A:C:D:E

Ans. (A) Average distance from the skin to the anterior wall of the sacral canal is 21 mm (C) Beyond 6-7 years of age, it is difficult to give and is less successful in comparison to younger children (D) 2-3 cm of epidural catheter is advances through epidural space in continuos infusion (E) Distance from the upper border of the sacral hiatus to the dural sac is 30±10.4mm

Caudal Anesthesia

- Normal length of catheter to be introduced into the epidural space ls 2 to 3 cm, asfor any epidural block.

Dosage prescription scheme:

1. With 0.5 mL/kg, all sacral dermatomes are blocked.
2. With 1.0 ml/kg all sacral and lumbar dermatomes are blocked.

3. With 1 .25 ml/kg, the upper limit of anesthesia is at least midthoracic.
- **Drug used:** The dose of 0.25% bupivacaine ts 0.5-O.75 ml/kg
- Extradural space below sacral hiatus may range from being deep to excessively shallow-its average length ls 10-15 cm.
- Its anatomy is more easily appreciated in infants and chilDren

Indications:
- Use for pattants < 8 years old to provide intraoperative and postoperative analgesia for abdominal and lower extremity surgery.

Technique:
- Advance needle and catheter 2 to 4 mm.

234. Chest roentgenogram feature (s) of stage-2 Sarcoidosis in Scadding scoring system :

a) Bilateral hilar lymphadenopathy

b) Mediastinal lymphadenopathy

c) Upper lobe parenchymal infiltrates

d) Enlarged paratracheal nodes

e) Pulmonary fibrosis

Correct Answer - A:C

Ans. A,Bilateral hilar lymphadenopathy & C,Upper lobe parenchymal infiltrates

- Standard scoring system described by Scadding in 1961 for chest roentgenograms.
- Stage 1 - Hilar adenopathy alone, often with right paratracheal involvement.
- **Stage 2 - Combination of adenopathy plus infiltrates.**
- **BHL and parenchymal infiltrates.**
- **Patients may present with breathlessness or cough.**
- **The majority of cases resolve spontaneously.**
- Stage 3 reveals infiltrates alone.
- Stage 4 consists of fibrosis.
- Usually the infiltrates in sarcoidosis are predominantly an upper lobe process.
- Only in a few noninfectious diseases is an upper lobe predominance noted.

235. Standard treatment of whole-brain radiotherapy (WBRT) for brain Metastasis :

a) 20 grays (Gy) in 10 fractions

b) 30 grays (Gy) in 10 fractions

c) 30 grays (Gy) in 5 fractions

d) 15 grays (Gy) in 10 fractions

e) None

Correct Answer - B

Ans. B, 30 grays (Gy) in 10 fractions

- Whole-brain radiotherapy (WBRT) to 30 grays (Gy) in 10 fractions - Standard treatment in patients with multiple brain metastases.
- Current study investigated the potential benefit of dose escalation beyond 30 Gy.

236. Defence mechanism in obsessive-compulsive disorder (OCD) is/are :

a) Undoing

b) Reaction formation

c) Suppression

d) Isolation of affect

e) Projection

Correct Answer - A:B:D

Ans. A,Undoing B,Reaction formation & D,Isolation of affect

Defense Mechanism:

Synopsis of Psychiatry by Kaplan and Sadock 11th/160

- Displacement - Phobio (Especially in children) & OCD.
- Reaction formation
- Undoing
- Inhibition
- Isolation
- Dissociation

237. Beck's cognitive triad of depression includes :

a) Self

b) Future

c) Past experience

d) World and environment

e) Others

Correct Answer - A:B:D

Ans. A,Self B,Future & D,World and environment

- Aaron Beck postulated a cognitive triad of depression.

Consists of,

- Views about tlw self-a negative self precept.
- About environment-a tendency to experience the world as hostile and.demanding.
- About future - expectation of suffering and failure.

Therapy consists of modifying these distortions.

- Cognitive triad :Beliefs about oneself, the world, and the future.

238. Which is not a brain stimulation technique :

a) Electroconvulsive therapy

b) Magnetic seizure therapy

c) Deep brain stimulation

d) Rapid transcranial magnetic stimulation

e) Cognitive therapy

Correct Answer - E
Ans. E. Cognitive therapy
Synopsis of Psychiatry by Kaplon and Sadock p1065-81
Brain Stimulation Technique:

- Electrical currents or magnetic fields to alter neuronal firing.

Transcranial techniques include:

- Cranial electrical stimulation (CES)
- Electroconvulsive therapy (ECT)
- Transcranial direct current stimulation (IDCS, also direct current polarization)
- Transcranial magnetic stimulation (TMS)
- Magnetic seizure therapy (MST)

Surgical techniques:

- Cortical brain stimulation (CBS).
- Deep brain stimulation (DBS)
- Vagus nerve stimulation (VNS).

239. Feature(s) of delirium tremens is/are:

a) Most common complication in alcohol withdrawal

b) Auditory hallucination may occur

c) Visual hallucination may be present

d) Predominantly low-voltage fast activity on EEG

e) Most severe alcohol withdrawal syndrome

Correct Answer - B:C:D:E

Ans. B,Auditory hallucination may occur C,Visual hallucination may be present D,Predominantly low-voltage fast activity on EEG & E,Most severe alcohol withdrawal syndrome

Delirium tremens:

- Predominantly low-voltage fast activity.
- Most severe alcohol withdrawal syndrome.
- Visual (and auditory) hallucinations.
- Classic sign of alcohol withdrawal is tremulousness,

240. Personality type associated with coronary artery disease :

a) A

b) B

c) C

d) D

e) E

Correct Answer - A
Ans. A. A

- Psychosocial factors, including type A personality, anger, hostility, and anxiety, have been implicated in the pathogenesis of cardiovascular disease.

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