AHEAD Test and Discussions – AIIMS SIMULATED TEST – III

1. Which is not a 2nd generation antihistaminic?
a) Loratidine b) Acrivastatine
c) Cyclizine d) Terfanadine

2. The hormone most responsible for regulating sodium balance is secreted from:
a. Zona glomerulosa of the adrenal cortex
b. Zona reticularis of the adrenal medulla
c. Zona fasiculata of the adrenal medulla
d. Zona fasiculata of the adrenal cortex

3. During embryological development, hematopoiesis occurs in different organs at different times. Which of the following are the correct organs, in the correct sequence, at which hematopoiesis occurs embryologically?
a. Amnion, yolk sac, placenta, bone marrow
b. Placenta, liver and spleen, yolk sac, bone marrow
c. Placenta, spleen and lymphatic organs, bone marrow
d. Yolk sac, liver, spleen and lymphatic organs, bone marrow

4. In which type of blood vessel is the mean linear velocity of a red blood cell the lowest?
a. Aorta and large arteries b. Arterioles
c. Capillaries d. Small arteries

5. True about mycobacterium other than tuberculosis:
a. Causes disseminated infection
b. Occurs in persons with normal immunity
c. Causes decreased efficacy of BCG due to cross immunity
d. Person to person transmission is seen

6. Maintenance of the corpus luteum during the first trimester of pregnancy is accomplished principally by the secretion of
a. Antidiuretic hormone (ADH)
b. Follicle stimulating hormone (FSH)
c. Human chorionic gonadotropin (hCG)
d. Luteinizing hormone (LH)

7. Aldosterone receptors are present in all except
a. Liver
b. Colon
c. Hippocampus
d. Distal nephron

8. Triglycerides are maximum in
a. Chylomicrons b. VLDL
c. LDL d. HDL

9. With time, blood stored in a blood bank tends to become relatively depleted of 2,3-diphosphoglycerate (2,3-DPG). What effect does this have on the hemoglobin-oxygen dissociation curve?
a. Shifts the curve to the left, so that the hemoglobin has a decreased oxygen affinity
b. Shifts the curve to the left so that the hemoglobin has an increased oxygen affinity
c. Shifts the curve to the right, so that the hemoglobin has a decreased oxygen affinity
d. Shifts the curve to the right, so that the hemoglobin has an increased oxygen affinity

10. Which type of enzyme reaction is effected by a folic acid deficiency?
A. Acyl transfer B. Carboxylation
C. Decarboxylation D. Methylation

11. Which of the following inhibits the activity of acetyl-CoA carboxylase?
a. Citrate b. Glucagon
c. High-carbohydrate, low-fat diet d. Insulin

12. From which intermediate in the glycolytic pathway does the pentose phosphate pathway (also known as the hexose monophosphate, or pentose, shunt) "shunt"?
a. Fructose-1,6-bisphosphate b. Fructose-6-phosphate
c. Glucose-6-phosphate d. Phosphoenolpyruvate

13. Vitamin A intoxication causes injury to
a. Lysosomes b. Mitochondria
c. Endoplasmic reticulum d. Microtubules

14. Which of the following citric acid cycle intermediates is required for heme synthesis?
a. α Ketoglutarate b. Fumarate
c. Isocitrate d. Succinyl-CoA

15. Which of the following metabolic processes occurs exclusively in the mitochondria?
a. Cholesterol synthesis b. Fatty acid synthesis
c. Gluconeogenesis d. Ketone body synthesis

16. Bone marrow aplasia is seen with all except:
a. Methicillin b. Chloramphenicol
c. Alpha methyl hydantoin d. Phenylbutazone

17. Chronic burrowing ulcer is caused by:
a) Microaerophillic stereptococci
b) Peptostreptococcus
c) Streptococcus viridans d) Streptococcus pyogenes

18. The "window period" in HIV infection means:
A. The time lapse between the infection and detection of viral antibodies
B. The time lapse between the infection and development of AIDS
C. The time lapse between obtaining the sample and detection of virus in the lab
D. None of the above

19. The time gap between appearance of koplik's spot and cutaneous rash in measles is:
A. 24Hrs B. 3-4 days
C. 2 weeks D.10 days

20. Both intranuclear and intracytoplasmic inclusions are present in which of the following viruses
A. Pox Virus B. Measles virus
C. Hepatitis B virus D.HIV

21. The virulence factors of Neisseria gonorrhea include all of the following except:
A. Outer membrane proteins B. IgA Protease
C. M-Protems D. Pili

22. The angulation and torque values built into the bracket are often referred to as the
a. Appliance specification b. Appliance prescription
c. Appliance individualization d. Either (a) or (c)

23. True about polio:
a) paralytic polio is most common
b) spastic paralysis
c) increased muscular activity leads to increased paralysis
d) polio drop given only in >3 year

24. All of the following are true when using bonded attachments rather than bands except one
a. Less painful b. Requite no separation of teeth
c. More esthetic
d. Make it difficult to handle tooth size problems.

25. All of the following sutures are non-resorbable except
a. Polyglactin 910 b. Surgical silk
c. Nylon d. Surgical cotton

26. Which of the following is an advantage of chromic gut over gut sutures
a. Delayed resorption b. Ease of use
c. Greater strength d. Fewer allergic reactions

27. Silk sutures used to close intraoral wounds should be removed in
a. 3 – 5 days b. 5 – 7 days
c. 12 – 14 days d. 15 – 18 days

28. All of the following about principles of suturing are true except
a. Suture should pass through equal depth and distance from the incision on both sides
b. Needle should always pass from thicker to thinner tissues
c. Needle always passes from movable to fixed tissue
d. Needle always passes from deeper to superficial tissue

29. In a completely edentulous mandible, the ideal location to place implants for an implant supported overdenture is
a. Anterior mandible between the mental foramina
b. Over the mental foramina
c. Molar region d. Retromolar region

30. Elevated temperature after surgery under prolonged general anesthesia often results from
a. Bronchopneumonia b. Atelectasis
c. Lung abscess d. None of the above

31. Centric occlusion can be made to coincide with centric relation to provide a broad area of tooth contact. This relation is called as
a. Freedom in centric in dentures.
b. Centric relation occlusion in dentures.
c. Centric occlusion in dentures
d. Balanced occlusion in dentures

32. Centric relation is a recordable and reproducible position. Centric occlusion cannot be reproduced by the edentulous patient because of
a. Loss of proprioceptive impulses
b. Loss of tonicty of TMJ ligaments
c. Loss of height of crest of the edentulous ridge
d. All of the above

33. Which of the following is not a difference between Centric relation and Centric occlusion
a. Centric relation is a bone to bone relationship. Centric occlusion is the relationship of upper and lower teeth to each other.
b. Centric relation is established for denture occlusion where as centric occlusion is present in natural dentition.
c. Centric relation is a recordable and reproducible position. It serves as a reference relation.
d. In natural dentition the centric occlusion is usually posterior to centric relation

34. Significance of centric relation are all of the following except
a. This position is more constant and definite than vertical dimension, and is independent of the presence or absence of teeth
b. It is a recordable and reproducible position.
c. It serves as a reference relation.
d. An accurate centric relation orients the upper cast to the opening axis of the articulator and the mandible.

35. In natural dentition the centric occlusion is usually anterior to centric relation
a. 0.5 to 1 mm b. 0.2 to 0.5 mm
c. 0.75 to 1.5 mm d. 1 to 2 mm

36. Centric relation is established for denture occlusion where as centric occlusion is present in natural dentition. If in natural dentition the CR and CO coincides then its called
a. Centric relation occlusion. b. Long centric
c. Centric occlusion d. Balanced occlusion

37. A newborn infant has some of its abdominal viscera protruding through a defect in the abdominal wall. Which of the following is the likely cause of this defect?
a. Failure of the intestinal loop to retract from the umbilical cord
b. Failure of the yolk stalk to degenerate
c. Failure of peritoneal fusion
d. Incomplete fusion of the lateral body folds

38. If a patient has a drooping right eyelid and a dilated right pupil, which of the following neural structures is most likely affected?
a. Cervical sympathetic chain b. Facial nerve
c. Oculomotor nerve d. Superior cervical ganglion

39. 1st drug to be used in absence seizures:
a) Phenytoin b) BZD
c) Valproate d) Carbamazepine

40. Gacial Colliculus is seen in:
A. Midbrain B. Pons
C. Medulla D. Interpeduncular foosa

41. Which area is out of the blood brain barrier
A. Thalamus B. Cerebral cortex
C. IV ventricle D. Area postrema

42. The inferior cerebellar peduncle has all the following tracts except:
A. Vestibulo cerebellar B. Olive cerebellar
C. Spino cerebellar D. Ponto cerebellar

43. Middle cerebellar penducle transmits…..fibres:
A. Ponto cerebellar pathway B. Tectospinal pathway
C. Spino cerebellar pathway
D. Middle cerebellar pathway

44. Structures not passing through inferior cerebellar peduncle:
A. Anterior spinocerebellar B. Posterior spinocerebellar
C. Vestibulo cerebellar D. Cuneocerebellar

45. Increased Gamma efferent discharge is seen in all except:
A. Jendrassik's maneuver B. Anxiety
C. Rapid shallow breathing D. Stimulation of skin

46. Golgi tendon organs detect:
A. Static muscle length B. Dynamic muscle length
C. Muscle tension D. Muscle action

47. More resistance in expiration is due to:
A. Increased compression of airway
B. Due to change from linear to turbulent flow
C. Saturation with moisture
D. Increased rate of flow during expiration

48. Respiration stops in the last stage of expiration, in forced expiration because of:
A. Respiratory muscle fatigue
B. Collapse of alveoli
C. Dynamic compression of airways
D. Breaking effect of inspiratory muscles

49. The intrapleural pressure is negative both during inspiration and expiration because:
A. Intrapulmonary pressure is always negative
B. Thoracic cage and lungs are elastic structure
C. Transpulmonary pressure determines the negativity
D. Surfactant prevents the lungs to collapse

50. Which is the by product of the urea cycle:
A. Aspartate B. Succinate C. Ornithine D. Fumarate

51. Major source of ammonia in the kidney is:
A. Urea B. Aspartate C. Glutamine D. Glutamate

52. Urinary protein is detected by:
A. Barfoed test B. Hay's test
C. Boiling test D. Ehrlich's test

53. Urea is produced by the enzyme:
A. Urease B. Uricase
C. Arginase D. Glutaminase

54. Most common non protein nitrogenous fraction of blood:
A. Urea B. Uric acid C. Urobilinogen D. Creatinin

55. Which of the following would you consider to be general properties of viruses
A. New virus particle arises directly (by division) from preexisting viruses
B. Fall in to the general size range of 200-3000 angstrom unit
C. Contain equal proportions of protein, lipo polysaccharide and nucleic acids
D. Contain DNA but no RNA

56. Most common opportunistic infection in AIDS is:
A. Cryptococcosis B. Tuberculosis
C. Candidiasis D. Aspergillosis

57. A 39-year-old HIV-positive man has a seizure accompanied by loss of consciousness and leg and arm jerking. The patient is lethargic, unable to answer simple questions, and has an obvious left-sided hemiparesis. The causative organism is most likely:
a. Cryptococcus neoformans b. Herpes simplex
c. Mycobacteria tuberculosis d. Toxoplasma gondii

58. An otherwise healthy patient who wears contact lenses develops a small ulceration of the eye. Which of the following organisms is most likely involved?
a. Acanthamoeba b. Cytomegalovirus
c. Herpes simplex d. Toxocara

59. A 4-year-old boy is brought to the emergency department in extreme respiratory distress, with a temperature of 103.8 F. He is drooling, has difficulty swallowing, and exhibits inspiratory stridor and swelling of the epiglottis. He has had no previous vaccinations. Which of the following agents is the most likely cause of these symptoms?
a. Haemophilus influenzae b. Klebsiella pneumoniae
c. Legionella pneumophila d. Mycoplasma pneumoniae

60. Which of the following is an example of type II hypersensitivity?
a. Allergic rhinitis b. Erythroblastosis fetalis
c. Food allergy d. Serum sickness

61. Digoxin toxicity is precipitated by all except:
a. Electrolyte disturbance b. Acute myocardial infarction
c. Hepatic disease d. Renal disease

62. Inorganic bone is
a. Autograft b. Allograft c. Xenograft d. Alloplasts

63. Percentage of abrasives in tooth powder is
a. 60% b. 70% c. 80% d. 90%

64. Percentage of which supragingival calculus formation is reduced by pyrophosphates incorporated into tooth pastes
a. 20% b. 30% c. 40% d. 50%

65. Number of brushing strokes to be given in each position in bass method
a. 5 b. 10 c. 20 d. 25

66. While using powered tooth brush the bristle should be placed
a. At the gingival margin
b. Coronal to gingival margin
c. Apical to gingival margin
d. Under the gingival margin

67. Percentage of alcohol present in chlorohexidine mouthwash
a. 2% b. 4% c. 8% d. 12%

68. The condylar guidance can be measured using a
a. Protrusive interocclusal record.
b. Lateral interocclusal record.
c. Retrusive interocclusal record.
d. All of them

69. Approximate value of condylar guidance is with in
a. +30degrees and almost the same value on both sides.
b. +20degrees and almost the same value on both sides.
c. +30degrees and different value on both sides.
d. +20degrees and different value on both sides.

70. All statements about Condylar Guidance (Posterior Determinant) are true except
a. It is the path of movement taken by the condyle in the glenoid fossa.
b. The condyle moves along the surface of glenoid fossa during mandibular movement so the glenoid fossa determines the path of movement of the condyle.
c. The condylar guidance can be measured using a protrusive interocclusal record.
d. The condyle traverses 'L" shaped path

71. Infective endocarditis due to pseudomonas is most commonly seen with
a. Intravenous drug abuse of pentazocin
b. HIV patient
c. Chronic steroid therapy
d. Elderly with community acquired pneumonia

72. Xylitol added to chewing gum can reduce the incidence of dental caries. Which of the following is not a reasonable explanation for such anti cariogenic action of Xylitol
a. It increases salivary flow
b. It is a non-cariogenic sugar substitute
c. It arrests incipient caries lesions
d. Cariogenic bacteria are reduced in number

73. Caries spread rate can be well assessed by graphic analysis of various factors. Which of the following factors are depicted in 'Stephan's curve'.
a. pH of saliva following a sucrose rise is plotted against time
b. Consumption of sugary snacks between meals plotted against time
c. The effect of acid binding to calcium salts and removing them from the tooth surface
d. Increase in salivary flow and rate of remineralisation

74. Average diameter of colloidal silica particles of micro filled composites ranges from;
a. 0.01 to 0.05 um b. 0.04 to 0.06 um
c. 0.01 to 0.04 um d. 0.01 to 0.03 um

75. Stability of self cured material is less due to eventual breakdown of
a. Inorganic Fillers b. Tertiary Amines
c. Activating chemical ingredients d. Photoinitiators

76. Life threatening complications of diabetes mellitus are all except
a. Malignant otitis externa
b. Rhinocerebral mucormycosis
c. Emphysematous pyelonephritis
d. Emphysematous apendicitis

77. Which burs may be used in Modified tooth preparation for composite restorations:
a. Inverted cone diamond bur
b. Rounds burs or inverted cone
c. Round burs or diamond stones
d. Inverted cone bur or diamond stone

78. If both enamel and dentin have been etched, then the area must be left slightly moistened result in :
a. Micro mechanical bond to enamel
b. Micro chemical bond to enamel
c. Micro chemical bond to dentin
d. Micro mechanical bond to dentin

79. Over drying etched dentin surface compromises dentin bonding as a result of :
a. Collapse of collagen network in etched dentin layer
b. Prevention of primer penetration
c. Compromises adhesive penetration
d. None of the above

80. Which of the following is true about electric pulp tester?
a. Suggests whether the pulp is vital or nonvital
b. Provides information regarding the health or integrity of a vital pulp
c. Provides any information about the vascular supply to the tooth
d. The electrode is placed on the incisal third of the facial surface

81. The most effective technique in Anesthesia Test is
a. Selective infiltration b. Block anesthesia
c. Intraligamcntary anesthesia d. Either of these

82. While gathering the patient's dental history patient will not report with
a. Pain when cold liquids come in contact
b. When breathing through the mouth
c. There is \spontaneous pain
d. After a recent restoration or prophylaxis and scaling

83. Which of these is not a type of irreversible pulpitis?
a. Depending on type of treatment: Endodontic or Conservative
b. Depending on symptoms: acute, subacute, or chronic
c. Depending on involvement: partial or total
d. Depending on presence of microbes: infected or sterile

84. Which of these histories can guide you towards one type of irreversible pulpitis?
a. Prolonged painful response to cold that can be relieved by heat
b. Prolonged painful response to heat that can be relieved by cold.
c. Prolonged painful response to both heat and cold stimulation.
d. all of them

85. What is the treatment for Hyperplastic pulpitis?
a. Extraction b. Endodontic therapy
c. A sedative dressing or packing containing zinc oxide and cugenol
d. Excision of the overgrowth followed by restoration

86. A calcium hydroxide base appeared to disintegrate when acid came into contact with it during an acid-etching procedure. Which base can be used in conjunction with acid-etching procedures for a composite?
a. Acid-resistant calcium hydroxide bases containing disalicylates
b. Reinforced ZOE cement containing alumina
c. EBA ZOE cements
d. Zinc phosphate cement containing copper salts

87. When an amalgam is placed over a ZOE base, the cement sometimes crumbles and becomes incorporated into the amalgam mass. All of the following are remedies of this problem EXCEPT
a. Decreasing the thickness of the base.
b. A more rigid cement base, such as zinc phosphate cement, should be placed over the ZOE
c. Maintain thickness of low-strength base at 0.5 mm.
d. Use GIC as a base

88. High-strength dental stone dies sometimes fracture during separation from rubber impressions. All of the following are remedies of this problem EXCEPT
a. Optimum strength is achieved only at the correct water powder ratio using a die separator to safely remove the die
b. Vacuum mixing of high-strength dental stone ensures maximum strength by minimizing porosity.
c. The poured die should be allowed to set for at least 20 minutes or until final set before it is removed from the impression.
d. Increasing the thickness of polyether impression materials increases the ease of removal of the die.

89. The occlusal surfaces of teeth of a Type 3 gypsum model poured from an alginate impression were chalky and friable. All of the following are causes of this problem EXCEPT
a. Excess water in the depressions of an alginate impression
b. Blood and saliva remaining on the impression
c. Prolonged immersion of the impression in anti expansion solution
d. Prolonged immersion of the impression in disinfecting solution

Select the correct answer using the codes given below:
a. 1, 2 and 3 b. 2, 3 and 4 c. 1 and 4 d. 1, 2, 3 and 4

90. Agranular cytoplasmic reticulum is involved in the synthesis of
a. Protein b. Lipid c. Vitamin d. Carbohydrate

91. Most common site of histiocytosis is
a. Bone b. Skin c. Lung d. Liver

92. Features seen in hemolytic anemia are all except
a. Tear drop and burr cells b. Decreased Haptoglobin
c. Reticulocytosis d. Hemoglobinuria

93. Pulmonary circulation differs from systemic circulation
a. Pulmonary vasodilation in hypoxia
b. Pulmonary vasoconstriction in hypoxia
c. Decreased blood volume during systole
d. Increased basal vasoconstrictor tone

94. Digoxin is indicated in all of the followings except
a. Atrial flutter b. WPW syndrome
c. Atrial fibrillation d. PSVT

95. Anaesthetic agent of choice in renal failure
a. methoxyflurane b. isoflurane
c. enflurane d. Ketamine

96. Which of the following favours filtration at the arteriolar end of the capillary bed.
a. Decrease in hydrostatic pressure of capillaries
b. Increase in hydrostatic pressure of capillaries
c. Increase in oncotic pressure of capillaries
d. Decrease in oncotic pressure of interstitium

97. Chymotrypsinogen is a
a. Zymogen b. Carboxypeptidase
c. Transaminase d. Elastase

98. The two radiographs were taken with the buccal object rule in mind. In film #2, the x-ray tube was directed from a mesial angulation. What is the spacial position of the circular object in these radiographs?
a. The object lies lingual to the first molar
b. The object lies buccal to the first molar
c. The object lies between the second premolar and the first molar
d. The object lies directly apical to the first molar

99. Which of the following positioning errors is the most likely cause of a reverse occlusal plane curve on a panorex (panoramic radioradiograph)?
a. Chin tilted too far upward
b. Chin tilted too far downward
c. Head turned slightly upward
d. Head turned slightly downward

100. Image magnification may be minimized by:
a. Using a short cone
b. Placing the film as far from the tooth as possible
c. Using a long cone
d. Shortening the exposure time

1. Ans. is (c) i.e. Cyclizine: [Ref. K.D.T. 5th/ep 139, 140]

- Histamine is a naturally occuring amine.
- It is found in most body tissues but is predominantly secreted by 1 cells.
- Histamine acts as a local hormone (autacoid) i.e. it acts within the immediate vicinity of its release.

H1 receptor antagonists:

- They are classified in two types

1. first generation antihistamines
2. second generation antihistamines

Antihistamine			
First generation Highly sedative	**Moderately sedative**	**Mid sedative**	**Second generation**
• Diphenhydramine • Dimenhydrinate • Promethazine • Hydroxyzine	• Phenivamine • Cyproheptadine • Meclizine • Buclizine • Cinnarizine	• Chlorpheniramine • Methdilazine • Mepyramine • Dimethindene • Triprlolodine • Mebhydroline • Cyclizine • Clemastine • Ebastine • Atorvalastine	• Terfanadine • Fexofenadine • Astemizole • Loratadine • Desloratadine • Cetrizine • Azelastine • Mizolastine

2. Ans. a: choice A. the hormone involved is aldosterone, which acts to increase sodium resorption in the kidney. Note that aldosterone (a mineralcorticoid) and the glucocorticoids (cortisol, cortisone) are produced by the adrenal cortex, not medulla. The medulla, with a different developmental origin and cell type, produces catecholamines such as epinephrine and norepinephrine. The cortex, which is outside the medulla, is in three regions. On the outside is the Zona Glomerulosa, source of the mineralcorticoids. Inside of that is the Zona Fasiculata, which together with the innermost layer of the cortex, the Zona Reticularis, produce glucocortoids. Remember that interior to the Zona Reticularis, you will find the adrenal medulla. Also note that as a memory aid, the cortex layers from the outside in are G-F-R, like the GFR of the kidney.

3. Ans. d: By the third week of development, hematopoiesis begins in the blood islands of the yolk sac. Beginning at 1 month of age and continuing until 7 months of age, blood elements are also formed in the liver. Hematopoiesis occurs in the spleen and lymphatic organs between 2 and 4 months, and in the bone marrow after 4 months.

4. Ans. c: The same volume of blood flows through each of the different types of blood vessels each minute. Because the capillaries have the largest cross-sectional area (averaging 2500-5000 cm2), and the velocity of blood flow is inversely related to cross-sectional area, the mean linear velocity of a red blood cell is lowest in the capillaries. Under resting conditions, the mean linear velocity of a red blood cell in the capillaries is 0.3-0.6 mm/sec, whereas the velocity in the aorta is approximately 200 mm/sec. This low velocity of red blood cells in the capillary network allows plenty of time for oxygen to diffuse to the tissues.

5. Ans. c. causes decreased efficacy of BCG due to cross immunity.: Ref: Anantnarayan 7th /e p365, Greenwood microbiology 16th /e p216

- Mycobacteria other than trubercle bacilli (MOTT) which occasionally 'anonymous' causes human disease resembling tuberculosis haves been called atypical 'anonymous' or 'unclassified' mycobacteria.
- They are also called "environmental" or opporturustics as their natural habitat appears to be soil and water and water and they cause opportunistic infections in human beings.
- The name "non tuberculous mycobacteria" (NTM) has gained wide acceptance in recent years.
- They have also been called 'paratubercle', "tuberculoid" and MOTT (mycobacteria other than tubercle bacilli)
- They are usually referred as MOTT and environmental bacteria in text

6. Ans. c: The corpus luteum secretes estrogens, progesterone, and relaxin. hCG, secreted by the syncytiotrophoblast lining the placental villi, maintains the corpus luteum during the first trimester of pregnancy. hCG appears in the maternal blood stream soon after implantation occurs. This hormone, in addition to maintaining the corpus luteum, also promotes the continued secretion of progesterone. As a result, the endometrial lining remains functional and menses does not occur.

7. Ans. A: Liver:

- The aldosterone receptor, also called minerlocorticoid receptor (or MR, MLR, MCR), is officially labeled nuclear receptor subfamily 3, group C, member 2, (NR3C2). It belongs to the steroid hormone receptor family where the ligand

diffuses into cells, interacts with the receptor and results in a signal transduction affecting specific gene expression in the nucleus.

- MR is expressed in many tissues, such as the kidney, colon, heart, central nervous system (hippocampus), brown adipose tissue and sweat glands. In epithelial tissues, its activation leads to the expression of proteins regulating ionic and water transports (mainly the epithelial sodium channel or ENaC, Na+/K+pump, serum and gluccorticoid induced kinase or SGK 1) resulting in the reasorbtion of sodium, and as a consequence an increase in extracellular volume, increase in blood pressure, and an excretion of potassium to maintain a normal salt concentration in the body.
- The receptor is activated by mineralocorticoids such as aldosterone and deoxycorticosterone as well as glucocorticoids, like cortisol and cortisone. It also responds to some progestins.

8. Ans. A: Chylomicrons [Ref: Chatterjee & Shinde Biochemistry 6/e, p 338 (T21,2); Harper 26/e, p 206;
Maximum content of TG's is seen in – Chylomicrons
Maximum content of exogenous TG's is seen in – Chylomicrons
Maximum content of endogenous TG's is seen in – VLDL
Maximum cholesterol is seen in – LDL
Chylomicrons are the lipoprotein particles lowest in density and largest in size and contains the highest percentage of lipids and the smallest percentage of proteins. VLDLs and LDLs are successively denser, having higher ratios of protein to lipid. HDL particles are densest.

9. Ans. b: 2,3-diphosphoglycerate (2,3-DPG) is produced in red cells (RBCs) by a variation on the glycolytic pathway, and levels diminish when glycolysis by the RBCs slows. The depletion of 2,3-DPG in stored blood causes the hemoglobin dissociation curve to shift to the left, leading to an increase in oxygen affinity. This increase is helpful in the picking up of oxygen by hemoglobin from the lungs, but it can be very problematic in the release of oxygen from the blood to the tissues. This is not just a theoretical point: considerable effort has been expended in developing improved solutions for storing packed RBCs and methods for "restoring" older stored cells so that the 2,3-DPG levels are adequate. In practice, in otherwise reasonably healthy patients, older trAnsfused blood will quickly regenerate 2,3-DPG when placed in the glucose-containing environment of the serum; however, even transiently decreased 2,3-DPG levels in a severely compromised patient can be dangerous.

10. Ans. d: Folic acid deficiency results in the development of macrocytic anemia that yields macro-ovalocytes and hypersegmented neutrophils on the peripheral blood smear. Folic acid is a pteridine vitamin that exists as tetrahydrofolate (TH4) in its most reduced form. TH4 can accept methyl, methylene, or formyl carbons and transfer them as methyl groups. This function is vital in nucleotide and amino acid synthesis. By far the most common cause of folate deficiency is inadequate dietary intake. Alcoholics and those with poor diets are at the highest risk for developing this type of anemia. Pantothenic acid is a key vitamin in acyl trAnsfer reactions (choice A). It forms part of coenzyme A, which trAnsfers acyl groups in thiol esters as acetyl CoA, succinyl CoA, and other acyl CoA forms.

11. Ans. b: The key thing to remember here is that acetyl-CoA carboxylase catalyzes the first and rate-limiting step of fatty acid synthesis. If you got that far, you could have figured out which of the choices would inhibit the synthesis of fatty acids. Certainly glucagon, a catabolic hormone released in response to low blood glucose, would be a likely candidate to inhibit the synthesis of fatty acids. In fact, glucagon inhibits fatty acid synthesis by a CAMP-dependent phosphorylation of acetyl-CoA carboxylase. Conversely, glucagon stimulates fatty acid oxidation. Clinical correlate: Glycogen metabolism is profoundly affected by specific hormones. Insulin, a polypeptide hormone, increases the capacity of the liver to synthesize glycogen. When insulin levels are high, the production of glycogen is high. The action of insulin is opposed by both glucagon and epinephrine which will increase blood glucose levels.

12. Ans. c: The hexose monophosphate shunt is an alternative route for the oxidation of glucose; it supplies the cell with NADPH and pentose sugars. The NADPH is used in many biosynthetic processes (e.g., fatty acid and cholesterol synthesis), whereas the pentoses are involved in the synthesis of nucleotides and some coenzymes. The pathway "shunts" from glucose-6-phosphate, which is oxidized in a series of NADPH-generating reactions, to ribulose-5-phosphate. The non-oxidative phase, which involves the transfer of C2 and C3 units from one sugar to another, follows. One resulting intermediate is fructose-6-phosphate which can serve as a re-entry point to glycolysis, thereby closing the "shunt" loop. Although all the other choices are glycolytic intermediates, they are not involved in the hexose monophosphate shunt.

13. Ans. A: Lysosomes [Ref: O.P. Ghai 6/e, p 121: Harrison 16/e p 408]: "Excess of vitamin A can lead to rupture of Lysosomal membranes" O.P. Ghai 6/e, p 121

14. Ans. d: The porphyrin ring of heme is derived from the citric acid cycle intermediate succinyl-CoA and the amino acid glycine. The initial synthetic step, which is rate-limiting, is catalyzed by aminolevulinic acid synthase (ALA synthase).

15. Ans. d: Of the processes listed, only ketone body synthesis occurs exclusively in the mitochondria. Other mitochondrial processes include the production of acetyl-CoA, the TCA cycle, the electron trAnsport chain, and fatty acid oxidation. The most common cause of ketone body formation is ketoacidosis secondary to diabetes. The essential diagnostic characteristics include: hyperglycemia, acidosis (with blood pH < 7.3), serum bicarbonate < 15 and serum positive for ketones.

16. Ans. A: Methicillin

Causes of drug induced aplastic anemia	
Antibiotics	**Psychotropic**
Chloramphenical	• Phenothiazine
Cotrimoxazole	**Anticonvulsant**
Nitrofurantoin	• Phenytoin (alpha methyl hydantoin)
Antiinflammatory	**Antirheumatic**
Phenylbutazone	• Gold salts
Indomethacin	• D penicillamine
Dicofenac	**Cytotoxic drugs**
Antithroid	• Vincristine
Carbimazole	• Andriamcycin
Methimazole	• Methotrexate etc.
methylthiouracil	

17. Ans. 'a' S.Das 3/e,p 131; textbook of surgery by Ijaz Ahsan 2/e p89(preview on google books- books.google.com

- "This type of ulcer is due to symbiotic action of microaerophilic non- haemolytic streptococci and haemolytic staphylococcus aureus"- S.Das
- Chronic burrowing ulcers or meleney's ulcers are seen in the post- operative wounds either after the operation for perforated viscus or for drainage of empyema thoracis.
- Clinically it is an undermined ulcer with lot of granulation tissue in the floor.
- This condition is painful, toxaemic, and the general condition deteriorates without treatment.

18. Ans. 'A' [Ref. Ananthanarayan 7th Ed Pg 591] It takes 2-6 months for the appearance of HIV antibodies after infection and the individual is highly infectious during this period. This seronegative infective stage is known as "window period". During this period both ELISA and WESTERN BLOT tests are negative.

19. Ans. 'B' [Ref. Ananthanarayan 7th Ed Pg 519] Koplick's spots are pathognomonic intraoral spots that appear 2-3 days before the onset of cutaneous rash in measles (Rubeola virus). They are bluish white ulcerations on the buccal mucosa.

20. Ans. 'B' [Ref. Ananthanarayan 7th Ed Pg 449] Inclusion bodies are demonstrated in virus-infected cells histologically. They may be intracytoplasmic (Rhabdo virus, pox viruses), intranuclear (Herpes viruses)orboth(Measlesvirus). The intracytoplasmic inclusion bodies in rabies (Rhabdo virus) are known as negri bodies.

21. Ans. 'C' [Ref. Ananthanarayan 7th Ed Pg 226] Pili are special type of fimbria, and they act as virulence factors by promoting attachment to host cells and inhibiting phagocytosis. They are usually present on gram-negative male bacteria and help in attachment to female bacteria in conjugation. The only gram-positive organism having pili is *Corynebacterium diphtheria.*

22. Ans. B. (Rf. Pg. 346, Proffit)

23. Ans. c. i.e. IM injections and increased muscular activity increases the risk of paralytic polio
Ref: O.P. Ghai 6th/e p210-212

- The incubation period of poliovirus from contact to initial clinical symptoms is usually considered to be 8-12 days with a range of 5-35 days.

Polio virus infection may follow one of the several courses:

1. Inapparent infection
- It occurs in 80-95% of cases and causes no disease and no sequale

2. Abortive poliomyelitis
- It occurs in about 5% of patients.
- It is non specific influenza like syndrome which occurs 1-2 week after infection.

- Fever, malaise, anorexia and headache are prominent features and there My be sore throat and abdominal or muscular pain.
- The illness is short lived for up to 2-3 days.
- Recovery is complete and no neurological signs or sequalae develop.

24. Ans. D. They make it easier to handle tooth size problems during treatment by leaving the interproximal surfaces accessible for modification if needed. (Rf. Pg. 347, Proffit)

25. Ans. A. 56, NM **26. Ans. A.** 266, LA1 **27. Ans. B.** 269, LA1

28. Ans. B. 60, NM **29. Ans. A.** 313, PETERSON **30. Ans. B.** 161, TO

31. Ans. d: The maxillomandibular relationship in which the condyles articulate with the thinnest avascular portion of their respective discs with the complex in the anterosuperior position against the shapes of the articular eminences.

32. Ans. a **33. Ans. a**

34. Ans. a: Centric occlusion can be made to coincide with centric relation to provide a broad area of tooth contact - Freedom in centric in dentures. In natural dentition it may not coincide because of habitual occlusion.

35. Ans a: In natural tooth interferences in CR initiates impulses that direct mandible away from deflective contacts into CO. Once tooth is lost there are no proprioceptive impulses to guide the mandible away from deflective contacts and hence centric occlusion cannot be reproduced by the patient.

36. Ans. d: In natural dentition the centric occlusion is usually anterior to centric relation (0.5 to 1 mm).

37. Ans. d: During the fourth week of development, the lateral body folds move ventrally and fuse in the midline to form the anterior body wall. Incomplete fusion results in a defect that allows abdominal viscera to protrude from the abdominal cavity, a condition known as gastroschisis.

38. Ans. c: The oculomotor nerve innervates the levator palpebrae superioris, which elevates the eyelid. This nerve also innervates the inferior oblique muscles, as well as the superior, inferior, and medial rectus muscles. The oculomotor nerve also contains preganglionic parasympathetic fibers that synapse, in the ciliary ganglion, on postganglionic parasympathetic nerve fibers that innervate the sphincter pupillae muscle, which constricts the pupil. A lesion of the oculomotor nerve may therefore result in both drooping of the eyelid (ptosis) and dilation of the pupil (mydriasis).

39. Ans. c. i.e., Valproate: Ref: Harriosn 17th / e.p.2511; 16th /e.p.2370, K.D.T. 5th/ e.p.378

Choice of antiepileptic drugs (adults)

Seizure type	Initial choice	Second line
Tonic- clonic	Phenytoin, Carbamazepine, valproate	Lamotrigine, oxcarbazepine
Myoclonic partial	Valproate Carbamazepine, phenytoin	Lamotrigine Valproate, Lamotrigine, oxcarbazepine
absence	valproate	Ethosuximide, lamotrigine
Unclassifiable	Valporate	lamotrigine

40. Ans. B [Ref. Gray's 39th ed Pg. 291, B. D. Chaurasia 4th ed Vol. III Pg. 342; Handelman Neuroanatomy 2000, Pg. 12; Snell's neuroanatomy 6th ed Pg. 196-97, 446]

Facial colliculus is a slight elevation in the rhomboid fossa (or floor of 4th ventricle) produced by the fibers from motor nucleus of facial nerve looping over abducent (motor) nucleus. It lies at the inferior end of medial eminence in pons.

41. Ans. D [Ref. Ganong 21st ed Pg. 618-19]

Circumventricle organs

- These organs have fenestrated capillaries, & because of their permeability they are said to be "outside the blood brain barrier". They function as neurohemal organs i.e. in which polypeptide secreted by neurons enter the circulation example oxytocin & vaso pressin enter posterior pituitary.

42. Ans. D [Ref. B. D. Chaurasia 4th ed Vol. III Pg. 339] Middle cerebellar peduncle transmits ponto cerebellar (afferent) tract; it has no efferent tract. Anterior spinocerebellar tract is in superior peduncle, whereas, posterior spinocerbelllar tract is in superior cerebellar peduncle, ehereas, posterior spinocerebellar tract is in inferior peduncle.

43. Ans. A [Ref. B. D. Chaurasia 4th ed Vol. III Pg. 339] Middle cerebellar peduncle transmits ponto cerebellar (afferent) tract; it has no efferent tract. Anterior spinocerebellar tract is in superior peduncle, whereas, posterior spinocerbelllar tract is in superior cerebellar peduncle, ehereas, posterior spinocerebellar tract is in inferior peduncle.

44. Ans. A [Ref. B. D. Chaurasia 4th ed Vol. III Pg. 339] Middle cerebellar peduncle transmits ponto cerebellar (afferent) tract; it has no efferent tract. Anterior spinocerebellar tract is in superior peduncle, whereas, posterior spinocerbelllar tract is in superior cerebellar peduncle, ehereas, posterior spinocerebellar tract is in inferior peduncle.

45. ANS. C [REF. GANONG 22ND ED PG. 133]

GAMMA AFFERENT DISCHARGE IS INFLUENCED BY

- Anxiety causes increased discharge so hyperactive tendon reflexes.
- Stimulation of skin especially by noxious agents, increase γ discharge to ipsilateral flexor muscle spindles while decrease to extensors. Opposite pattern (i.e. flexor↓, extensor↑) is produced in opposite limb.
- Jendrassik's maneuver (pulling hands apart when flexed fingers are hooked together) increases γ efferent discharge.

46. ANS. C [REF. GANONG 22ND ED PG. 134-33; GUYTON 11TH ED PG. 674-80, 135, 93; OXFORD PHYSIOLOGY 3RD ED PG. 254]

Golgi tendon organ functions as a transducer in a feed back circuit that regulates muscle force (tension), whereas muscle spindle feed back circuit regulates muscle length & velocity.

47. ANS. A [REF. HARRISON 16TH ED PG. 1549]

Airway resistance during expiration is more than during inspiration due to dynamic collapse of airways.

- Air flow during forced exhalation is the result of the balance between the elastic recoil of lungs promoting flow and the resistance of airways limiting flow.
- In normal lungs as well as lungs affected by COPD, maximum expiratory flow diminishes as the lungs empty because the lung parenchymal provides progressively less elastic recoil and because the cross sectional area of airways falls raising the resistance to airflow.
- The major site of increased resistance in most individuals with COPD is in airways < 2 mm diameter.

48. ANS. C [REF. HARRISON 16TH ED PG. 1549]

49. ANS. B [REF. GANNONG REVIEW OF MEDICAL PHYSIOLOGY 22ND ED PG. 650; CHAUDHARI CONCISE MEDICAL PHYSIOLOGY 5TH ED PG. 121]

- Both the thoracic cage and the lungs are elastic structures.
- Being elastic structure they both tend to recoil, but in opposite direction.
  - The thoracic cage has inherent tendancy to expand, while trying to expand, it draws the parietal pleura with it (because parietal pleura is strongly attached to inner side of the chestwall)
  - The lungs have an inherent tendency to collapse because of their elasticity and surface tension of thin layer of fluid lining the alveoli.

50. Ans. 'D' [Ref. Satyanarayana 3rd Ed Pg 339]

Urea is the end product of protein metabolism. Overall reaction of urea cycle is

$NH_4 + CO_2 + \text{aspirate} + 3\ ATP \rightarrow \text{Urea} + \text{Fumarate} + 2ADP + 2Pi + AMP + PPi$.

51. Ans. 'D' [Ref. Satyanarayana 3rd Ed Pg 334, 336]

Glutamate serves as a "collection centre" for amino groups in biological system. In presence of the enzyme.*glutamate dehydrogenase* (GDH), it rapidly undergoes oxidative deamination, to liberate free ammonia for urea synthesis.

52. Ans. 'C' [Ref. Satyanarayana 3rd Ed Pg 766]

Abnormal urine constituent	Test
Albumins, globulins	Heat coagulation test
Proteins	Sulfosalicylic acid test
Blood	Benzidine test
Glucose	Benedicts testt
Specific test for glucose	Glucose oxidase test
Ketone bodies	Rothera's test
Bile salts	Hay's test Patternkofer's test

Bile pigments	Fouchet's test Gmelin's test

53. Ans. 'C' [Ref. Satyanarayana 3rd Ed Pg 338] Arginase is the fifth and final enzyme in urea cycle. It cleaves arginine to yield urea and ornithine. Ornithine, so regenerated, enters mitochondria, for its reuse in the urea cycle.

54. Ans. 'C' [Ref. Satyanarayana 3rd Ed Pg 70, 337-44, 394] Option 'A' urea is the end product of protein metabolism. Urea accounts for 80-90% of the nitrogen containing substances excreted in urine.

Option 'D' creatinine is formed from three amino acids - glycine, arginine and methionine. Remember that nitrogen is important constituent of all amino acids. Estimation of serum creatinine is used as a **diagnostic test to assess kidney function and considered as a more reliable indicator of renal function.**

Option 'B' uric acid is the end product of purine metabolism in humans and remember that both purines and pyrimidines contains nitrogenous bases

Option 'C "Urobilinogen" is formed during the process of degradation of Heme to bile pigments. The hemoglobin is first cleaved to protein part "globin" and non-protein part "Heme". Urobilinogen is a derivative of non-protein Heme part.

55. Ans. 'B' [Ref. Ananthanarayan 7th Ed Pg 431] Viruses do not have cellular organisation. They may have either DNA or RNA but never both They multiply by a complex process and not by binary fission and are unaffected by antibacterial antibiotics.

56. Ans. 'C' [Ref. Ananthanarayan 7th Ed Pg 589] The common opportunistic infections in AIDS are oral candidiasis, herpes zoster, hairy cell leukoplakia, salmonellosis, tuberculosis and Pneumocystis carinii. The malignancies associated with AIDS are Kaposi's sarcoma and lymphomas.

57. Ans. d: Although all five pathogens can cause central nervous system (CNS) manifestations, toxoplasmosis (caused by Toxoplasma gondii) presents with seizures in 15-25% of cases. It is the most common cause of secondary CNS infections in AIDS patients. The disease is spread by ingestion of cysts from undercooked meat or from cat feces. Tachyzoites develop from cysts phagocytized by macrophages, then spread to the brain, muscle, and other tissues, where they encyst and multiply.

58. Ans. a: All the agents listed can infect the eyeball. The agent specifically associated with contact lens use is Acanthamoeba, which can infect lens solution. This amoeba is dangerous because it causes an intractable ulcerative keratitis that may progress to uveitis. If the lesion is suspected, the clinical laboratory should be notified and specific directions for collecting samples for culture obtained. The parasites may be difficult to see in histologic sections or corneal scrapings.

59. Ans. a: Epiglottitis is the most common disease of the upper respiratory tract produced by Haemophilus influenzae type b, a gram-negative encapsulated rod. Epiglottitis is characterized by an abrupt onset of high fever, drooling, and inability to handle secretions. Stridor and respiratory distress result from laryngeal obstruction. The epiglottis is described as being cherry red and swollen. H. influenzae is also a common cause of otitis media in children and may cause bronchitis, bronchiolitis, and pneumonia in adults. The incidence of serious disease caused by Haemophilus influenzae type b decreased greatly with the introduction of an effective vaccine, which is composed of the H. influenzae type b capsular polysaccharides coupled to a carrier molecule and given to children from 2-15 months of age. The patient had not received the Hib conjugate vaccine and therefore was susceptible to this organism. Klebsiella pneumoniae(choice B) causes pneumonia and pulmonary abscesses, but is not considered to be a pathogen in the upper respiratory tract. Klebsiella is a gram-negative encapsulated rod.

60. Ans. b: Type II hypersensitivity occurs when antibodies react with antigens present on the surface of cells or other tissue components. It is conveniently subclassified into diseases produced by three distinct mechanisms. One mechanism involves complement fixation by the antibody-antigen complex, which facilitates phagocytosis; this mechanism occurs in transfusion reactions, erythroblastosis fetalis, autoimmune hemolytic anemia, agranulocytosis, or thrombocytopenia. In a second form of type II hypersensitivity, target cells coated with low levels of IgG are lysed (without phagocytosis) by monocytes, neutrophils, or natural killer cells; this mechanism is thought to operate in the destruction of large parasites, possibly some tumor cells, and in graft rejection. The third mechanism involves antibody-mediated cellular dysfunction, such as occurs in Graves disease or myasthenia gravis.

61. Ans. C: Hepatic disease: [Ref. K.D.T. 5th p 462, 463]

Digoxin toxicity at is enhanced by renal failure as it is excreted through kidneys where as digitoxin toxicity is enhanced by liver failure because it is eliminated by hepatic metabolism

Also Remember

The administration of following drugs raises the serum concentration of Digoxin by reducing both the renal and nonrenal elimination of digoxin and by reducing its volume of distribution.

- Quinidine

- Verapamil
- Amiodarone
- Propafenone

62. Ans. c: (e.g. BIO-OSS, ANORGANIC BONE HAS NO ORGANIC MATTER LEFT)

63. Ans. d **64. Ans. b** **65. Ans. c** **66. Ans. a** **67. Ans. a**

68. Ans. a: Protrusive interocclusal record is defined as, "The influence of the contacting surfaces of the mandibular and maxillary anterior teeth during mandibular movements".—GPT

69. Ans.a:

70. Ans d: Condy lar guidance is defined as, "Mandibular guidance generated by the condyle and articular disc traversing the contour of the glenoid fossa."—GPT. The glenoid fossa and the condyle are the articulating surfaces of the temporomandibular joint. The slope of the glenoid fossa is a 'S' bend. Hence, the condyle also moves along a 'S' shaped path. This shape of the glenoid fossa, which determines the path of movement of the condyle, is called the condylar guidance.

71. Ans. A: Intravenous drug abuse of pentazocin: [Ref: Harrison 16th / e p891]
Psudomonas aeruginosa infects the native heart valves of intravenous drug users as well as prosthetic heart valves.
Foreign materials mixed with heroin or any other drug may cause injury to valve leaflets or mural endocardium with resulting fibrosis and an increased risk for valve infection.

72. Ans. C Xylitol is a non-cariogenic sugar substitute. Chewing gum increases salivary flow and aids remineralisation. It reduces the Streptococcus mutans count.

73. Ans. A. The fall in pH of saliva following a sucrose rise is plotted against time, showing that the pH drops rapidly and can take up to 60 minutes to return to a neutral pH.

74. Ans. c: The microfill composites contain colloidal silica particles whose average diameter ranges from 0.01 to 0.04)um.

75. Ans. b: The color stability of self-cured materials also is less stable because of the eventual breakdown of the polymerizationinitiating chemical ingredients, tertiary amines. Direction of polymerization shrinkage for self-cured materials is generally centralized (towards the center of the mass).

76. Ans. D: emphysematous apendicitis
Malignant otitis externa (Harrison 16th /e p 189): " Invasive otitis externa also known as malignant or necrotizing otitis externa is an aggressive and potentially life threatening disease that occurs predominantly in elderly diabetics and other immunocompromised patients"

77. Ans. c: Round burs or diamond stones may be used to prepare this type of preparation, resulting in a marginal design similar to a beveled preparation; however, less tooth structure is removed in the internal portions of the preparation. Often, the preparation appears to have been "scooped out" rather than having the distinct internal line angles characteristic of a conventional preparation design

78. Ans. d: If both enamel and dentin have been etched, then the area must be left slightly moistened. This allows the primer and adhesive materials to more effectively penetrate the collagen fibrils to form a hybrid layer, which is the basis for the micromechanical bond to dentin.

79. Ans. a Overdrying etched dentin surfaces compromises dentin bonding as a result **of** the collapse of the collagen network in the etched dentin layer. This collapse prevents optimal primer and adhesive penetration and compromises hybrid layer formation.

80. Ans. a: cohen p-17, 18: The electric pulp test does not provide information regarding the health or integrity of a vital pulp. The electric pulp test does not provide any information about the vascular supply to the tooth. The electrode/conductor is then placed on sound-dried enamel on the middle third of the facial surface

81. Ans. c. cohen p-21: The most effective technique is intraligamentary injection administered in the distal sulcus of each suspect tooth.

82. Ans. c. cohen p-22: With a reversible pulpitis there is no spontaneous pain as there often is with a symptomatic irreversible pulpitis.

83. Ans. a. cohen p-22: Based on present knowledge, irreversible pulpitis in any of its many forms requires endodontic therapy.

84. Ans. d. cohen p-22: Sudden temperature changes induce prolonged episodes of pain.

85. Ans. b. cohen p-23: **86. Ans. a** **87. Ans. a** **88. Ans. a** **89. Ans. C**

90. Ans. B: Lipid [Ref: Guyton 11/e, p 20, 21: Chatterjea Shinde 6/e, p 6, 7]
There are two kinds of endoplasmic reticulum:

1. Rough or granular ER or ergastoplasm

- They are coated with ribosomes
- Functions of rough ER
- Protein synthesis

2. Smooth or agranular ER

- They do not have attached ribosomes
- Functions of smooth ER
- **Lipid synthesis**
- Modification and transport of protein synthesized in rough ER
- Provides the enzymes that control glycogen breakdown when glycogen is to be used for energy
- Provide a vast number of enzymes that are capable of detoxifying substances, such as drugs, that might damage the cell.

91. Ans. A: Bone [Ref. Robbins 7th /e p 701, 702]:

- Histiocytosis is a disorder of the mononuclear phagocytic system
- Mononuclear phagocytic system consists of monoblasts, promonocytes, monocytes and tissue macrophages
- Macriogages are transformed monocytes i.e. monocytes present in the tissues. Moncytes emigrate continuously from peripheral blood into the tissues.

92. Ans. A: Tear drop and burr cells
Burr cells are seen in uremia
Tear drop cells are seen in myelofibrosis
Haptotoglobin is an a – globulin present in high concentration in serum. It binds to free haemoglobin produced as a phagocyte system. Thus the plasma haptoglobin level is low or absent in hemolytic anemias.

93. Ans. B: Pulmonary vasoconstriction in hypoxia: [Ref: Ganong 22/e p 663; Guyton, 11/e, p 485]
The pulmonary small arteries and arterioles constrict in response to hypoxia. This is opposite to the effect observed in systemic vessels, which dilate rather than constrict in response to low oxygen.
This opposite effect in pulmonary vessels occurs in order to distribute the blood flow to better ventilated area and be more effective.

94. Ans. b **95. Ans. c**

96. Ans. B: Increase in hydrostatic pressure of capillaries [Ref: Ganong 22/e, p 592; Guyton 11/e, p 185]
The rate of filtration at any point along a capillary depends on balance of Starling forces-
(A) Hydrostatic pressure gradient: (Hydrostatic press. Of capillaries minus hydrostatic press. Of interstitium)
(B) Osmotic pressure gradient: (Plasma colloid Osmotic pressure minus interstitial fluid colloid osmotic pressure)
Net filtration press. (NFP) = Hydrostatic press. Gradient – Osmostic press. Gradient
If NFP is positive then there is outward movement of fluid across the capillaries & if negative then inward movement of fluid occurs.

97. Ans. A: Zymogen: [Ref: Harper 26/e, p 477; Lippincot's Biochemistry 3/e, p 246]
Proteolytic digestive enzymes known as proteases have two main classes depending on specificity for the amino acids forming the peptide bond to be hydrolysed.

98. Ans. a: The buccal object rule (also called the tube shift technique) is used to determine an object's spacial position within the jaws. This technique utilizes two radiographs of an object exposed with slightly different tube angulations. It then compares the object's position on the radiograph with respect to a reference point (e.g., the root of a tooth). If the tube is shifted and directed from a more mesial direction, and the object in question appears to have moved mesially with respect to the reference point, then the object lies lingual to that reference point. Conversely, if the tube is shifted mesially and the object in question moves distally , it lies on the buccal aspect of the reference object.

99. Ans. a: Mandibular structures look narrower and maxillary structures look wider Chin tilted too far downward:

1. Occlusal plane shows an excessive upward curve.
2. Severe interproximal overlapping, anterior teeth appear very distorted

100. Ans. c