Pre-Medical

ZOOLOGY

NCERT CAPSULE

CATALYST COURSE

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LEADER COURSE

DIGESTION AND ABSORPTION

1. The process of conversion of complex food substances into simple absorbable forms is called
(a) Egestion (b) Digestion
(c) Ingestion (d) Assimilation
Pg. 257, 1st para

2. The major components of our food are
(a) Carbohydrates (b) Proteins
(c) Fats (d) All of these
Pg. 257, 1st para

3. One gram of fat produces
(a) 4.1 kcal of chemical energy.
(b) 9.45 kcal of chemical energy.
(c) 7.0 kcal of chemical energy.
(d) 5.0 kcal of chemical energy.
Pg. 264, 4th para

4. The amount of heat liberated from the complete combustion of 1 gm of food in a bomb calorimeter is known as its____.
(a) Gross caloric value
(b) Gross energy value
(c) Physiological value
(d) Both (a) and (b)
Pg. 264, 4th para

5. Gross calorific values of carbohydrates, proteins and fats (in kcal/gm) are ____, ____ and ____, respectively.
(a) 4.1, 5.65 and 9.45 (b) 5.65,4.1 and 9.45
(c) 9.45,4.1 and 5.65 (d) 4.1, 9.45 and 5.65
Pg. 264, 4th para

6. The physiological calorific values of carbohydrates, proteins and fats (in kcal/gm) are ____, ____ and ____, respectively.
(a) 4.0, 5.65 and 9.45 (b) 9.0, 4.1 and 9.45
(c) 4.0, 4.0 and 9.0 (d) 4.1, 9.0 and 5.65
Pg. 264, 4th para

7. One kilo calorie is the amount of energy required to raise the temperature of 1 kg of water by
(a) 1°C (b)2°C
(c) 3°C (d)4°C
Pg. 264, 4th para

8. Which of the following is a function of food?
(a) Providing energy to the body.
(b) Providing organic materials for growth and repair of tissues.
(c) Providing organic materials for repair of tissues.
(d) All the above
Pg. 257, 1st para

9. Digestion in our body takes place by means of
(a) Biochemical method
(b) Mechanical method
(c) Both (a) and (b)
(d) Electrical method
Pg. 257, 1st para

10. Which of the following molecules are not utilized by/ our body in their original form?
(a) All biomacromolecules
(b) All biomicromolecules
(c) Biomolecules having molecular weight less than 1000 Dalton.
(d) All the above
Pg. 257, 1st para

11. The role of water in our body is to
(a) Act as medium for transport of substances.
(b) Provide medium for all metabolic reactions.
(c) Prevents dehydration of body.
(d) All of these
Pg. 257, 1st para

12. Human digestive system consists of
(a) Alimentary canal
(b) Associated glands
(c) Both (a) and (b)
(d) Gastrointestinal tract only
Pg. 257, 2nd para

13. The anterior opening of alimentary canal is
(a) Anus (b) Mouth
(c) Vestibule (d) Pupil
Pg. 257, 3rd para

14. The posterior opening of alimentary canal is
(a) Anus (b) Mouth
(c) Vestibule (d) Pupil
Pg. 257, 3rd para

15. Oral cavity contains
(a) Teeth (b) Tongue
(c) Gums (d) All of these
Pg. 257, 3rd para

16. Teeth of human are
(a) Thecodont (b) Diphyodont
(c) Heterodont (d) All of these
Pg. 257, 3rd para

17. If tooth is embedded in a socket of jaw bone, then it is known as
(a) Thecodont (b) Diphyodont
(c) Heterodont (d) All of these
Pg. 257, 3rd para

18. How many deciduous teeth's are present in human?
(a) 20 (b) 30
(c) 32 (d)24
Pg. 257, 3rd para

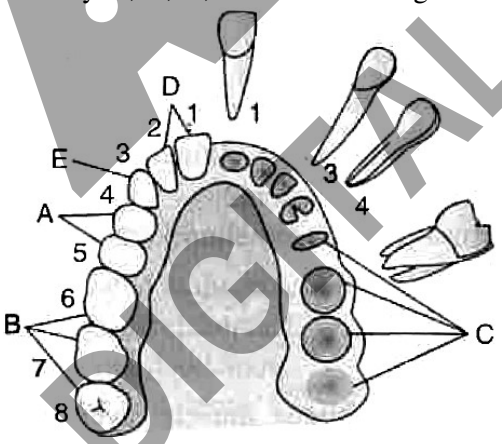
19. In majority of mammals, including human, two set of teeth gets formed during their life time. These teeth are called
(a) Thecodont (b) Heterodont
(c) Diphyodont (d) Lophodont
Pg. 257, 3rd para

20. An adult human has 32 permanent teeth which are of four different types and they are called
(a) Thecodont (b) Heterodont
(c) Diphyodont (d) Lophodont
Pg. 257, 3rd para

21. Arrangement of teeth in each half of the upper and lower jaw in the order as I, C, PM, M is represented by
(a) Dental formula (b) Odontology
(c) Dentology (d) Enamel
Pg. 257, 3rd para

22. The dental formula of adult human is
(a) $\frac{0033}{3133}$ (b) $\frac{1003}{1003}$
(c) $\frac{2123}{2123}$ (d) $\frac{3131}{3121}$
Pg. 257, 3rd para

23. Identify A, B, C, D and E in the given figure.



(a) A: Molars, B: Incisors, C: Premolars, D: Canine, E: Socket of jaw.
(b) A: Premolars, B: Socket of jaw, C: Canine, D: Molars, E. Incisors.
(c) A: Premolars, B: Molars, C: Socket of jaw, D: Incisors, E: Canine.
(d) A: Socket of jaw, B: Canine, C: Premolars, D: Molars, E: Incisors.

24. The dental formula is given to show
(a) The structure of molars.
(b) Number and types of teeth in both jaws.
(c) Homodont condition
(d) Diphyodont condition
Pg. 258, 1st para

25. The dental formula of human being is
(a) $I_2, C_2 PM_1, M_3$ (b) I_2, C_1, PM_2, M_3
(c) I_3, C_1, PM_2, M_2 (d) I_2, C_2, PM_3, M_1
Pg. 258, 1st para

26. Select the incorrect statement among the following about human tongue.
(a) The human tongue has freely movable muscular organ.
(b) It is attached to the floor of the oral cavity by the frenulum.
(c) The upper surface of the tongue has small projections called papillae.
(d) All papillae of human tongue bear taste buds.

27. The tongue is attached to the floor of oral/buccal cavity by
(a) Epiglottis (b) Frenulum
(c) Gubernaculum (d) Mesentery
Pg. 258, 1st para

28. Which of the following acts as a common passage for food and air?
(a) Larynx (b) Pharynx
(c) Oesophagus (d) Glottis
Pg. 258, 2nd para

29. A cartilaginous flap called prevents the entry of food into the glottis (opening of the windpipe) during swallowing.
(a) Capsule (b) Epiglottis
(c) Glottis (d) Gullet
Pg. 258, 2nd para

30. Select the total number of correct statements from the following.
(a) The oesophagus and the trachea (wind pipe) open into the pharynx.
(b) The hard chewing surface of the teeth, made up of dentine, helps in the mastication of food.
(c) The oral cavity leads into a long pharynx which serves as a common passage for food and air.
(d) The tongue is a freely movable muscular organ attached to the roof of the oral cavity by the frenulum.
(a) 1 (b) 2
(c) 3 (d) 4

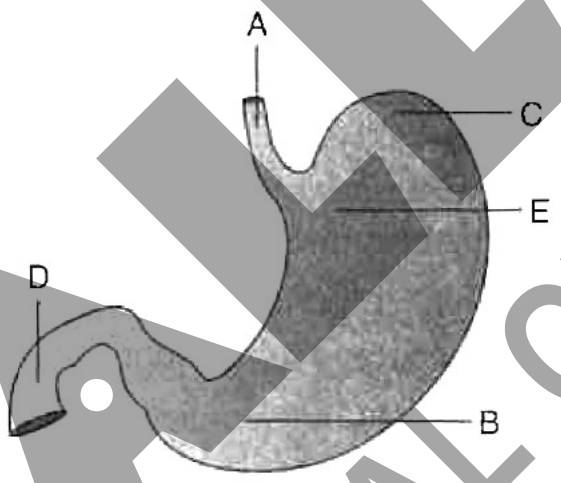
31. Stomach is divided into how many major parts?
(a) 1 (b) 2
(c) 3 (d) 4
Pg. 259, 1st para

32. The shape of human stomach is of which English alphabet?
(a) J (b) M
(c) N (d) O
Pg. 258, 2nd para

33. Which part of stomach opens into the first part of small intestine?
(a) Cardiac (b) Fundic
(c) Pyloric (d) Any of these
Pg. 259, 1st para

34. Which of the following is the highly-coiled part of small intestine?
(a) Duodenum (b) Jejunum
(c) Ileum (d) All of these
Pg. 259, 1st para

35. Identify A to E in the given figure.



(a) A: Oesophagus, B: Pyloric, C: Fundus, D: Superior portion of duodenum, E: Cardiac.
(b) A: Pyloric, B: Cardiac, C: Fundus, D: Oesophagus, E: Superior portion of duodenum.
(c) A: Superior portion of duodenum, B: Oesophagus, C: Cardiac, D: Fundus, E: Pyloric.
(d) A: Oesophagus, B: Fundus, C: Pyloric, D: Superior portion of duodenum, E: Cardiac.
Pg. 259, Fig. 16.3

36. A muscular sphincter that regulates the opening of oesophagus into stomach is
(a) Pyloric sphincter
(b) Gastroesophageal sphincter
(c) Sphincter of Oddi
(d) Cervical sphincter

37. Select the incorrect option from the matching.
(a) J-shaped - Stomach
(b) C-shaped - Duodenum
(c) Bean-shaped - Kidney
(d) O-shaped - Vasa recta
Mixed

38. A muscular sphincter that regulates the opening of stomach into duodenum is
(a) Pyloric sphincter
(b) Gastroesophageal sphincter
(c) Sphincter of Oddi
(d) Cervical sphincter
Pg. 259, 1st para

39. The large intestine consists of
(a) Caecum (b) Colon
(c) Rectum (d) All of these
Pg. 259, 1st para

40. A part of large intestine which is a blind sac and harbours some symbiotic microorganism is
(a) Colon (b) Caecum
(c) Rectum (d) Ileum
Pg. 259, 1st para

41. The colon is divided into
(a) Ascending colon
(b) Descending colon
(c) Transverse colon
(d) All of these
Pg. 259, 1st para

42. Which of the following is true about appendix?
(a) Narrow finger-like tubular projection.
(b) Arises from the caecum.
(c) Vestigial organ
(d) All of these
Pg. 259, 1st para

43. The wall of alimentary canal from oesophagus to rectum possesses how many histological layers?
(a) 1 (b) 2
(c) 3 (d) 4
Pg. 259, 2nd para

44. Which of the following histological layers are present in the wall of human alimentary canal from oesophagus to rectum?
(A) Serosa (B) Bowman's layer
(C) Muscularis (D) Submucosa
(E) Mucosa (F) Ganglion layer
(a) A, B, C, D (c) A, B, D, F
(b) B, C, D, E (d) A, C, D, E
Pg. 259, 3rd para

45. Which of the following is the outermost histological layer of alimentary canal?

(a) Serosa (thin mesothelium)

(b) Mucosa

(c) Submucosa

(d) Muscularis

Pg. 259, 2nd para

46. Where is the oblique muscle layer situated in the human alimentary canal?

(a) Oesophagus (b) Stomach

(c) Large intestine (d) Small intestine

Pg. 259, 2nd para

47. Select the total number of false statements from the following.

(A) Muscularis is formed by smooth muscles usually arranged into an inner circular and an outer longitudinal layer.

(B) Submucosal layer is formed of loose connective tissues containing nerves, blood and lymph vessels.

(C) Serosa is the outermost layer and is made up of a thin mesothelium (epithelium of visceral organs) with some connective tissues.

(D) The innermost layer lining the lumen of the alimentary canal is the mucosa.

(E) Mucosal epithelium has goblet cells which secrete mucus that help in lubrication.

(a) 3 (b) 4

(c) 5 (d) All are true

Pg. 259, 2nd para

48. Mucosal layer that forms irregular folds in the stomach is called

(a) Rugae (b) Villi

(c) Microvilli (d) Papilla

Pg. 259, 2nd para

49. Mucosal layer that forms small finger-like projections in intestine is called

(a) Villi (b) Microvilli

(c) Crypts (d) Papilla

Pg. 259, 2nd para

50. Mucosal layer that forms depressions in between villi in intestine is called

(a) Villi (b) Microvilli

(c) Crypts (d) Papilla

51. In the wall of alimentary canal, which of the following is the true sequence from outer to inner?

(a) Serosa, longitudinal muscle, mucosa, submucosa.

(b) Mucosa, serosa, long muscle.

(c) Serosa, long muscle, circular, submucosa, mucosa.

(d) Serosa, long muscle, submucosa, mucosa.

Pg. 259, 2nd para

52. The narrower distal end of stomach is called

(a) Cardiac (b) Duodenum

(c) Pharynx (d) Pylorus

Pg. 259, 1st para

53. Intestinal villi are mainly concerned with

(a) Assimilation (b) Secretion

(c) Ultrafiltration (d) Absorption

Pg. 260, 1st para

54. Pylorus is situated at the junction of

(a) Oesophagus and stomach.

(b) Stomach and duodenum.

(c) Duodenum and ileum.

(d) Ileum and rectum.

Pg. 260, 1st para

55. Brush bordered epithelium is found in

(a) Trachea (b) Stomach

(c) Small intestine (d) Fallopian tube

Pg. 259, 1st para

56. Vermiform appendix is a part of

(a) Alimentary canal

(b) Nervous system

(c) Vascular system

(d) Reproductive system

Pg. 260, 1st para

57. Crypt of Lieberkuhn is an example for

(a) Simple tubular gland

(b) Coiled tubular gland

(c) Compound alveolar gland

(d) Compound tubular gland

Pg. 260, 1st para

58. Serosa is made up of

(a) Mesothelium

(b) Some connective tissue

(c) Both (a) and (b)

(d) None of these

Pg. 259, 2nd para

59. In duodenum, glands are present in

(a) Mucosa (b) Submucosa

(c) Muscular layer (d) Both (a) and (b)

Pg. 259, 2nd para

60. Which of the following is responsible for the increase in surface area of small intestine?
(a) Villi (b) Microvilli
(c) Both (a) and (b) (d) Bigger lumen
Pg. 260, 1st para

61. Which olf the following statement is true about villi?
(a) They are small finger-like folding in small intestine.
(b) They are supplied with network of capillaries.
(c) They are supplied with large lymph vessel called lacteal s.
(d) All the above
Pg. 259, 3rd para

62. Goblet cells are an example of
(a) Multicellular gland
(b) Unicellular gland
(c) Alveolar gland
(d) Tubular gland
Pg. 260, 1st para

63. Select the incorrect statement from the following.
(a) Mucosal epithelium has goblet cells which secrete mucous that help in lubrication.
(b) Mucosa forms gastric gland in stomach and crypts of Lieberkuhn in intestine.
(c) All the four histological layers shows modification in different parts of alimentary canal.
(d) Muscularis layer is formed by outer circular and inner longitudinal muscle layer.
Pg. 260, 1st para

64. Which of the following are digestive glands associated with alimentary canal?
(a) Salivary gland (b) Liver
(c) Pancreas (d) All of these
Pg. 260, 2nd para

65. How many salivary glands are present in the human body?
(a) 3 (b) 4
(c) 5 (d) 6
Pg. 260, 2nd para

66. The following are salivary glands, except
(a) Parotid
(b) Submaxillary/Submandibular
(c) Sublingual
(d) Brunner gland
Pg. 260, 2nd para

67. The gland which is situated below tongue is
(a) Parotid (b) Submaxillary
(c) Sublingual (d) Submandibular

68. Select the incorrect matching.

Position	Gland
(a) Cheeks	Parotid
(b) Lower jaw	Submaxillary/ Submandibular
(c) Below tongue	Sublingual
(d) Pineal gland	Dorsal side of midbrain

Pg. 260, 2nd para

69. The largest gland of our body is
(a) Parotid (b) Pancreas
(c) Liver (d) Adrenal
Pg. 260, 3rd para

70. What is the approximate weight of the liver of an adult human?
(a) 1.2 to 1.5 kg (b) 2.5 to 3.5 kg
(c) 0.5 to 1.0 kg (d) 200 gm
Pg. 260, 3rd para

71. Liver is situated in
(a) Thoracic cavity (b) Abdominal cavity
(c) Pelvic cavity (d) Cranial cavity
Pg. 260, 3rd para

72. Liver is majorly divided into how many lobes?
(a) 1 (b) 2
(c) 3 (d) 4
Pg. 260, 3rd para

73. Each lobule in liver is covered by a thin connective tissue sheath called
(a) Hepatic fascia
(b) Glisson's capsule
(c) Falciform ligament
(d) Coronary ligament
Pg. 260, 3rd para

74. The structural and functional unit of liver is
(a) Cystic duct (b) Hepatocyte
(c) Hepatic lobules (d) Kupffer cells
Pg. 260, 3rd para

75. The function of gall bladder is
(a) Storage of bile
(b) Concentration of bile
(c) Both (a) and (b)
(d) Formation of bile
Pg. 260, 3rd para

76. Common bile duct is formed by the joining of
(a) Hepatic ducts (b) Cystic duct
(c) Duct of Wirsung (d) Both (a) and (b)
Pg. 261, 1st para

77. Cystic duct is located in
(a) Urinary bladder (b) Gall bladder
(c) Liver (d) Pancreas
Pg. 260, 3rd para

78. Bile is secreted by
(a) Glisson's capsule (b) Gall bladder
(c) Hepatic cells (d) Kupffer cells

Pg. 261, 1st para

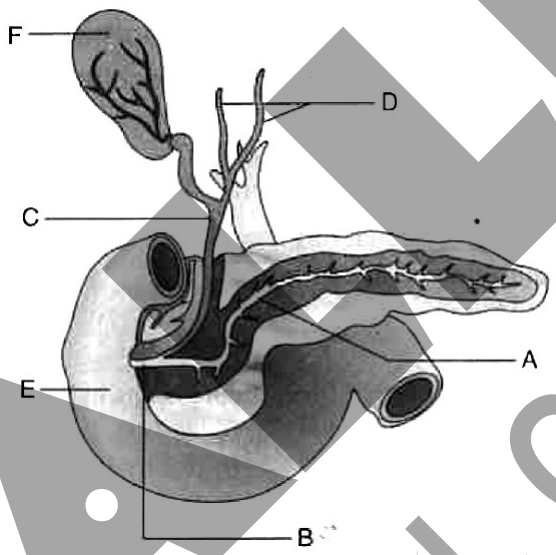
79. The bile duct and pancreatic duct opens together into the duodenum as hepatopancreatic duct which is guarded by sphincter called
(a) Sphincter of Boyden
(b) Hepatopancreatic ampulla
(c) Sphincter of Oddi
(d) Cardiac sphincter

Pg. 261, 1st para

80. Pancreas secretes
(a) Insulin (b) Glucagon
(c) Enzymes (d) All of these

Pg. 261, 2nd para

81. Identify A to F in the given figure.



(a) A: Common bile duct, B: Gall bladder, C: Pancreatic duct, D: Duodenum, E: Hepatopancreatic duct, F: Ducts from liver.
(b) A: Pancreatic duct, B: Hepatopancreatic duct, C: Common bile duct, D: Ducts from liver, E: Duodenum, F: Gall bladder.
(c) A: Hepatopancreatic duct, B: Ducts from liver, C: Pancreatic duct, D: Gall bladder, E: Duodenum, F: Common bile duct.
(d) A: Gall bladder, B: Common bile duct, C: Duodenum, D: Pancreatic duct, E: Hepatopancreatic duct, F: Ducts from liver.

Pg. 261, Fig. 16.6

82. All are secretion of pancreas, except
(a) Insulin
(b) Glucagon
(c) Chymotrypsinogen
(d) Enterokinase

Pg. 261, 3rd para

83. Mixed gland (endocrine + exocrine) from the following is
(a) Liver (b) Parotid
(c) Pancreas (d) Adrenal

Pg. 261, 3rd para

84. The major function performed by buccal cavity is
(a) Mastication of food.
(b) Facilitation of swallowing.
(c) Both (a) and (b)
(d) None of these

Pg. 261, 4th para

85. The bolus formed in buccal cavity conveyed into pharynx and then oesophagus by a process is called
(a) Peristalsis
(b) Emesis
(c) Deglutination/Swallowing
(d) Deglutition

Pg. 261, 4th para

86. Mucus in saliva helps in lubricating and adhering the masticate food particle into a in buccal cavity.
(a) Chyme (b) Chyle
(c) Bolus (d) Any of these

Pg. 261, 4th para

87. Saliva contains
(a) Salivary amylase/Ptyalin
(b) Electrolyte (Na^+, K^+, CI^-, HCO_3^-, etc.)
(c) Lysozyme
(d) All of these

Pg. 261, 4th para

88. Lysozyme acts as
(a) Antiviral agent (b) Antibacterial agent
(c) Acts on lipid (d) Acts on carbohydrates

Pg. 261, 4th para

89. How much percentage of starch is hydrolysed in mouth?
(a) 30 (b) 50
(c) 70 (d) 90

Pg. 261, 4th para

90. Lysozyme is a
(a) Cellular barrier
(b) Cytokine barrier
(c) Physiological barrier
(d) Physical barrier

Pg. 261, 4th para

91. The optimum pH for salivary enzyme is
(a) 6.2 (b) 5.8
(c) 6.8 (d) 8.8

Pg. 261, 4th para

92. Salivary amylase acts on
(a) Slightly basic pH
(b) Highly acidic pH
(c) Slightly acidic pH
(d) Highly basic pH

Pg. 261, 4th para

93. Starch $\xrightarrow[pH\ 6.8]{\text{Salivary analyse}}$ A. The product A is
(a) Sucrose (c) Maltose
(b) Galactose (d) Glucose

Pg. 262, 1st para

94. Starch $\xrightarrow[pH\ 6.8]{\text{Salivary analyse}}$ A. The product A is
(a) Monosaccharide (b) Polysaccharides
(c) Disaccharide (d) Amylopectin

Pg. 262, 1st para

95. Gastric glands are situated in
(a) Submucosa (c) Muscularis
(b) Mucosa (d) Serosa

Pg. 262, 2nd para

96. Match the columns.

Column-A	**Column-B**
A. Mucus neck cells	1.HCl
B. Peptic or chief cells	2. Intrinsic factor
C. Parietal/Oxyntic cells	3. Pepsinogen
	4. Mucus

(a) A $\rightarrow$4, B $\rightarrow$3, C $\rightarrow$1,2
(b) A $\rightarrow$1, 4, B $\rightarrow$2, C $\rightarrow$2
(c) A $\rightarrow$4, B $\rightarrow$l,3, C $\rightarrow$2
(d) A $\rightarrow$4, B $\rightarrow$2, 3, C $\rightarrow$1

Pg. 262, 2nd para

97. Which of the following is required for absorption of vitamin B_{12}?
(a) HCl (b) Pepsin
(c) Intrinsic factor (d) Amylase

Pg. 262, 2nd para

98. The stomach stores food for
(a) 1 hour (b) 2-3 hours
(c) 4-5 hours (d) 30 minutes

Pg. 262, 3rd para

99. Digestion of carbohydrates starts from
(a) Buccal cavity (b) Stomach
(c) Small intestine (d) Large intestine

Pg. 261, 4th para

100. Select the total number of true statements from the following.
A. In stomach, bolus is converted to chyme.
B. Chief cells secrets intrinsic factor required for absorption of vitamin B_{12}.
C. Pepsinogen $\xrightarrow{HCl}$ Pepsin
D. Pepsin converts protein into amino acids.
(a) 1 (b) 2
(c) 3 (d) 4

Pg. 262, 3rd para

101. Protection of mucosal epithelium from highly concentrated HCl in stomach is performed by
A. HCO_3 ion B. Mucus
C. Pepsin D. Intrinsic factor
(a) A and C only (b) B only
(c) A and B only (d) A, B and C only

Pg. 262, 3rd para

102. The optimal pH for pepsin is
(a) 6.8 (b) 1.8
(c) 3.8 (d) 6.0

Pg. 262, 3rd para

103. Which of the following is incorrect about gastric juice?
(a) Gastric juice of an infant contains rennin.
(b) Small amount of lipase is present.
(c) Gastric juice is secreted by gastric glands.
(d) Rennin does not help in the digestion of milk protein present in gastric juice of infants.

Pg. 262, 3rd para

104. Select the correct matching.

Column-I	**Column-II**
A. Bolus	1. Stomach
B. Chyme	2. Small intestine
C. Chyle	3. Buccal cavity

(a) A-3,B-l,C-2 (b) A - 1 , B-2, C-3
(c) A-3,B-2, C-l (d) A-2, B - 1 , C -3

Pg. 262, 3rd para

105. Which of the following is released in intestine?
(a) Bile juice (b) Pancreatic juice
(c) Intestinal juice (d) All of these

Pg. 262, 3rd para

106. Gastric juice of an infant contain ____, small which helps in the digestion of milk proteins.
(a) HCl (b) Trypsin
(c) Rennin (d) Amylases

Pg. 262, 3rd para

107. Bile and pancreatic juice is released in small intestine by
(a) Cystic duct
(b) Bile duct
(c) Pancreatic duct
(d) Hepatic pancreatic duct
Pg. 262, 3rd para

108. Select the total number of enzymes secreted by pancreases from the following.
Trypsinogen, Amylase, Lipase, Pepsinogen, Prorennin, Maltase, Sucrose, Chymotrypsinogen, Procarboxypeptidase, Nucleases.
(a) 4 (b) 5
(c) 6 (d) 7
Pg. 262, 3rd para

109. Trypsinogen is activated by
(a) Enterokinase (b) Chymotrypsin
(c) Rennin (d) Acidic pH
Pg. 262, 3rd para

110. Which of the following enzyme activates other enzyme in pancreatic juice?
(a) Enterokinase (b) Chymotrypsin
(c) Trypsin (d) Lipase
Pg. 262, 3rd para

111. Enterokinase is secreted by
(a) Mouth (b) Stomach
(c) Small intestine (d) Large intestine
Pg. 262, 3rd para

112. Bile juice contains all except
(a) Bilirubin and biliverdin
(b) Bile salts and cholesterol
(c) Phospholipids
(d) Enzymes
Pg. 262, 3rd para

113. Which of the following statement is incorrect about bile?
(a) It contains bilirubin and biliverdin, which is a waste product.
(b) Bile salts in it helps in emulsification of fats.
(c) Bile also activates lipases.
(d) Bile contains digestive enzyme.
Pg. 262, 4th para

114. Intestinal juice or succus entericus is formed by the secretion of
(a) Goblet cells
(b) Brush border cells lining mucosa
(c) Both (a) and (b)
(d) None of these
Pg. 262, 4th para

115. Enzymes like dipeptidases, lipases, nucleosidases, nucleotidases, maltase and sucrase is present in
(a) Bile juice (b) Gastric juice
(c) Pancreatic juice (d) Succus entericus
Pg. 262, 4th para

116. Brunner's gland
(a) Is situated in mucosal layer.
(b) Is present in submucosal layer.
(c) Secretes HCl
(d) Helps in the activation of gastric enzyme.
Pg. 262, 4th para

117. Select the incorrect option from the following.
(a) Proteins, Peptones, Proteoses $\xrightarrow{\text{Trypsin/Chymotrypsin, Carboxypeptidase}}$ Dipeptides
(b) Starch $\xrightarrow{\text{Amylase}}$ Disaccharides
(c) Fats $\xrightarrow{\text{lipases}}$ Diglycerides $\rightarrow$ Monoglycerides
(d) Nucleotides $\xrightarrow{\text{Nuclease}}$ Nucleosides
Pg. 263, 1st para

118. Select the incorrect statement from the following.
(a) Succus entericus act on end products produced by pancreatic enzyme.
(b) Final steps of digestion occur far away from mucosal epithelial cells of the intestine.
(c) The breakdown of biornacromolecule generally occurs in the duodenum region of small intestine.
(d) Simple substance formed after digestion is absorbed mainly by jejunum and ileum.
Pg. 262, 4th para

119. The action of which of the following enzyme produces glucose?
(a) Maltase (b) Lactase
(c) Sucrase (d) All of these
Pg. 263, 5th para

120. The action of which of the following enzyme produces only glucose?
(a) Maltase (b) Lactase
(c) Sucrase (d) All of these
Pg. 263, 5th para

121. Where do we use the term faeces for undigested and unabsorbed food particle in the alimentary canal?
(a) Jejunum (b) Colon
(c) Rectum (d) End of ileum
Pg. 264, 2nd para

122. Where the faecal matters are temporarily stored till defecation?
(a) Colon (b) Caecum
(c) Ileum (d) Rectum
Pg. 264, 3rd para

123. The activities of gastrointestinal are under
(a) Neural control only,
(b) Hormonal control only,
(c) Neither hormonal nor neural control,
(d) Neural and hormonal control,
Pg. 264, 3rd para

124. The muscular activities of different parts of alimentary canal is also regulated by
(a) Local neural control
(b) CNS neural control
(c) Both (a) and (b)
(d) None of these
Pg. 264, 3rd para

125. Absorption is a process by which the end product of digestion passes through the intestinal mucosa into
(a) Blood/Lymph (b) Liver
(c) CSF (d) Heart
Pg. 264, 4th para

126. The secretion of saliva can be stimulated by
(a) Sight of food.
(b) Small amount of food.
(c) Presence of food in oral cavity.
(d) All of these
Pg. 264, 3rd para

127. In addition to controlling the neurons, hormones also influences the
(a) Gastric secretions
(b) Intestinal secretions
(c) Muscular activities of different parts of alimentary canal.
(d) All the above

128. Hormonal control of the secretion of digestive juice is carried out by local ____, produced by ____ and ____mucosa.
(a) Neurotransmitters, liver, pancreas.
(b) Hormones, liver, pancreas.
(c) Hormones, gastric, intestinal.
(d) Neurotransmitters, gastric, intestinal.
Pg. 264, 3rd para

129. Absorption of digested food is carried out by
(a) Passive method
(b) Active transport
(c) Facilitated transport
(d) All of these

130. Glucose and amino acids are absorbed in the intestine mainly by
(a) Active transport
(b) Passive transport
(c) Selective absorption
(d) Osmosis
Pg. 264, 5th para

131. Which of the following statements is incorrect?
A. Absorption of simple sugar, alcohol, some water and medicines take place in stomach.
B. Maximum water absorption occurs in small intestine.
C. Small intestine is the major site of digestion and absorption of food.
D. Fatty acid and glycerol are absorbed by lacteals.
E. Nothing is absorbed in mouth and large intestine.
(a) A, D, and E only (b) D and E only
(c) D only (d) B and.C only
Pg. 264, 5th para

132. Glucose and some amino acids are absorbed with the help of carrier ions like Na+ by
(a) Active transport
(b) Diffusion
(c) Facilitated transport
(d) Osmosis
Pg. 264, 5th para

133. A small amount of monosaccharide like glucose, amino acids and some electrolytes like chloride ions are generally absorbed initially by
(a) Active transport
(b) Simple diffusion
(c) Facilitated transport
(d) Osmosis
Pg. 264, 5th para

134. The carrier ions generally used for facilitated transport of glucose and some amino acids is
(a) Ca^{2+} (b) CI
(c) K^{+} (d) Na^{+}
Pg. 264, 5th para

135. Amino acids, monosaccharides, electrolytes like Na^{+} are mainly absorbed by
(a) Osmosis
(b) Passive transport
(c) Facilitated transport
(d) Active transport
Pg. 264, 5th para

136. Which of the following statement is wrong about chylomicrons?
A. Chylomicrons are produced in the epithelial cells of small intestine.
B. It contains triglycerides, cholesterol and phospholipids.
C. It is a protein coated small vesicles. :
D. Chylomicrons are released from the epithelial cell into lacteals.
(a) A and D only (b) B and C only
(c) All of these (d) None of these
Pg. 264, 1st para

137. Chylomicrons are concerned with the
(a) Digestion of fats
(b) Absorption of proteins
(c) Digestion of protein
(d) Absorption of fats
Pg. 265, 1st para

138. The absorbed substances finally reach the tissues which utilize them for their activities. This process is called
(a) Assimilation (b) Emulsification
(c) Catabolism (d) Digestion
Pg. 265, 3rd para

139. Vomit centre is situated at
(a) Pons (b) Mid brain
(c) Cerebellum (d) Medulla
Pg. 265, vomiting

140. Defecation
(a) Is a voluntary process
(b) Is carried out by a mass peristaltic movement.
(c) Both (a) and (b)
(d) Is otherwise known as ingestion.
Pg. 265, 3rd para

141. Which of the following statement is incorrect?
(a) Faecal accumulation in the rectum initiates a neural reflex causing an urge for its removal.
(b) Reflex of vomiting is controlled by medulla.
(c) Irregular bowel movements cause constipation.
(d) In diarrhoea, absorption of food is increased.
Pg. 265, 3rd para

142. Marasmus is characterized by
(a) Thinning of limbs.
(b) Skin becomes dry, thin and wrinkled.
(c) Decreased growth rate.
(d) All of these
Pg. 266, 2nd para

143. Marasmus is caused by
(a) Obesity
(b) Dwarfism
(c) Prolonged starvation
(d) Deficiency of vitamin
Pg. 266, 2nd para

144. Kwashiorkor is due to
(a) Protein deficiency
(b) Calorie deficiency
(c) Fat deficiency
(d) Both (a) and (b)
Pg. 266, 3rd para

145. PEM stands for
(a) Protein energy malnutrition
(b) Protein energy malnourishment
(c) Protein energy management
(d) Protein energy modification
Pg. 266, 1st para

146. Kwashiorkor is characterized by
(a) Oedema
(b) Wasting of muscles.
(c) Failure of growth and brain development.
(d) All the above

147. Maximum absorption of digested food takes place in
(a) Mouth (b) Stomach
(c) Small intestine (d) Large intestine

148. Absorption of simple sugar, water and alcohol takes place in
(a) Mouth (b) Stomach
(c) Small intestine (d) Large intestine
Pg. 265, table No. 16.1

149. Mouth can absorb
(a) Fatty acid (b) Certain drugs
(c) Alcohol (d) All of these
Pg. 265, 2nd para

150. Marasmus is found in
(a) Infant (b) Adult
(c) Old age person (d) All of these
Pg. 266, 2nd para

151. Jaundice occurs due to increased level of
(a) $CaCO_3$ (b) Bicarbonate ion
(c) Bile pigments (d) CO_2
Pg. 265, Jaundice

152. Which of the following are parasites of intestine?
(a) Tapeworm and roundworm.
(b) Threadworm and hookworm.
(c) Pinworm
(d) All of these
Pg. 265, 5th para

153. Jaundice is a disorder of
(a) Excretory system
(b) Skin and eyes
(c) Digestive system
(d) Circulatory system

Pg. 261, Jaundice

154. The cause(s) of indigestion is / are
(a) Inadequate enzyme secretion.
(b) Anxiety
(c) Food poisoning, over eating and spicy food.
(d) All of these

Pg. 265, indigestion

155. The abnormal frequent bowel movement and increased liquidity of faecal discharge is known as
(a) Constipation (b) Vomiting
(c) Diarrhoea (d) Indigestion

Pg. 265, Discharge

156. Swelling of gut is the most common ailment due to
(a) Bacterial infections
(b) Viral infections
(c) Infection of intestinal parasites (different types of worms)
(d) All the above

Pg. 265, 5th para

157. Which of the following is correct about vomiting?
(a) Ejection of stomach content through mouth.
(b) It is a reflex action.
(c) A feeling of nausea precedes vomiting.
(d) All of these

Pg. 265, Vomiting

158. When breast feeding is replaced by less nutritive food low in proteins and calories, the infants below the age of one year are likely to suffer from
(a) Rickets (b) Kwashiorkor
(d) Pellagra (d) Marasmus

Pg. 266, 2nd para

159. A young infant may be feeding entirely on mother's milk which is white in colour but the stools which the infant passes out is quite yellowish. What is this yellow colour due to?
(a) Bile pigments passed through bile juice
(b) Undigested milk protein casein
(c) Pancreatic juice poured into duodenum
(d) Intestinal juice

Pg. 266, 2nd para

160. Which one of the following statements is true regarding digestion and absorption of food in humans?
(a) Glucose and amino acids are absorbed through intestinal mucosa with the help of carrier ions like Na+
(b) Chylomicrons are small lipoprotein particles that are transported from intestine into blood capillaries
(c) About 60% of starch is hydrolysed by salivary amylase in our mouth
(d) Oxyntic cells in our stomach secrete the proenzyme pepsinogen

Pg. 264, 4th para

161. Which one of the following pairs of food components in humans reach the stomach totally undigested?
(a) Starch and fat
(b) Fat and cellulose
(c) Starch and cellulose
(d) Protein and starch

Pg. 261, 4th para

162. Which one of the following is the correct matching of the site of action on the given substrate, the enzyme acting upon it and the end product?
(a) Small intestine: proteins $\xrightarrow{Pepsin}$ amino acids
(b) Stomach: fats $\xrightarrow{Lipase}$ micelles
(c) Duodenum: triglycerides $\xrightarrow{Trypsin}$ monoglyc-erides
(d) Small intestine: starch $\xrightarrow{\alpha-Amylase}$ disaccharide (maltose)

Pg. 263, reaction

163. What will happen if the secretion of parietal cells of gastric glands is blocked with an inhibitor?
(a) In the absence of HCl secretion, inactive pepsinogen is not converted into active enzyme pepsin
(b) Enterokinase will not be released from the duodenal mucosa and so trypsinogen is not converted to trypsin
(c) Gastric juice will be deficient in chymotrypsin
(d) Gastric juice will be deficient in pepsinogen

Pg. 262, 2nd para

164. Epithelial cells of the intestine involved in food absorption have on their surface
(a) Pinocytic vesicles (b) Microvilli
(c) Zymogen granules (d) Phagocytic vesicles

Pg. 260, 1st para

166. A patient is generally advised to especially consume more meat, lentils, milk and eggs in diet only when he suffers from
(a) Scurvy (b) Kwashiorkor
(c) Rickets (d) Anaemia
Pg. 266, 3rd para

167. A person is eating boiled potato, what is the food component found in it?
(a) DNA which gets digested by pancreatic DNAase
(b) Lactose which is indigestible
(c) Starch which does not get digested
(d) Cellulose which is digested by intestinal cellulose
Pg. 263, 4th reaction

168. The food having fully undergone mechanical and chemical digestion inside the stomach is called
(a) Chyle (b) Bolus
(c) Amino acid (d) Chyme
Pg. 262, 3rd para

169. A person had to undergo a surgery in which a major portion of his pancreas was removed. Which of the following food constituents will he find especially difficult to digest?
(a) Starch (b) Proteins
(c) Fats (d) Lactose sugar
Pg. 262, 4th para

170. Which one of the following is a matching pair of a substrate and its particular digestive enzyme?
(a) Starch - Maltase
(b) Lactose - Rennin
(c) Maltose - Steapsin
(d) Casein - Chymotrypsin
Pg. 263, 5th para

171. The enzyme Enterokinase helps in the conversion of
(a) Pepsinogen into pepsin
(b) Trypsinogen into trypsin
(c) Caesinogen into caesin
(d) Proteins into polypeptides
Pg. 262, 4th para

172. Renin acts on
(a) Milk changes casein into calcium paracaseinate at 7.2-8.2 pH
(b) Proteins in stomach
(c) Fat in intestine
(d) Milk changes casein into calcium paracaseinate at 1-3 pH

173. Most of the fat digestion occurs in
(a) Rectum
(b) Stomach
(c) Duodenum
(d) Small intestine
Pg. 262, 4th para

174. Brunner's glands occur in
(a) Submucosa of duodenum
(b) Submucosa of stomach
(c) Mucosa of oesophagus
(d) Mucosa of ileum
Pg. 262, 5th para

175. Pancreas produces
(a) Three digestive enzymes and one hormone
(b) Three types of digestive enzymes and two hormones
(c) Two digestive enzymes and one hormone
(d) Three digestive enzymes and no hormone
Pg. 261, 2nd para

176. Where is protein digestion accomplished?
(a) Stomach (b) Ileum
(c) Rectum (d) Duodenum
Pg. 262, 2nd para

177. Emulsification of fat is carried out by
(a) Bile pigments (b) Bile salts
(c) HCl (d) Pancreatic juice
Pg. 262, 4th para

178. Select what is not true about intestinal villi among the following:
(a) They possess microvilli.
(b) They increase the surface area.
(c) They are supplied with capillaries and the lacteal vessels.
(d) They only participate in digestion of fats.
Pg. 260, 1st para

179. Hepato-pancreatic duct opens into the duodenum and carries
(a) Bile
(b) Pancreatic juice
(c) Both bile and pancreatic juice
(d) Saliva
Pg. 260, 1st para

180. Which of the following is not a common disorder associated with digestive system?
(a) Tetanus (b) Diarrhoea
(b) Jaundice (d) Dysentery
Pg. 265, 3rd para

181. A gland not associated with the alimentary canal is
(a) Pancreas (b) Adrenal
(c) Liver (d) Salivary glands

Pg. 265, 3rd para

182. Match the two columns and select the correct among the options given:

Column-I	**Column-II**
(A) Biomacromolecules of food	(i) Alimentary canal and associated gland
(B) Human digestive system	(ii) Embedded in jaw bones
(C) Stomach	(iii) Outer wall of visceral organs
(D) Thecodont	(iv) Converted into simple substances
(E) Serosa	(v) J-shaped bag like structure

(a) (A)-(ii), (B)-(i), (C)-(v), (D)-(iii), (E)-(iv)
(b) (A)-(iv), (B)-(i), (C)-(v), (D)-(ii), (E) - (iii)
(c) (A) - (i), (B) - (ii), (C) - (iii), (D)-(iv), (E)-(v)
(d) (A)-(i), (B)-(iii), (C) - (ii), (D) - (iv), (E) - (v)

Mixed, Chapter No. 16

183. Match the two columns and select the right one among the options given:

Column-I	**Column-II**
(A) Duodenum	(i) A cartilaginous flap
(B) Epiglottis	(ii) Small blind sac
(C) Glottis	(iii) 'U'shaped structure emerging from the stomach
(D) Caecum	(iv) Opening of wind pipe

(a) (A) - (i), (B) - (ii), (C) - (iii), (D) - (iv)
(b) (A) - (iv), (B) - (iii), (C) - (ii), (D) - (i)
(c) (A) - (iii), (B) - (i), (C) - (iv), (D) - (ii)
(d) (A) - (ii), (B) - (iv), (C) - (i), (D) - (iii)

Mixed

184. Match the enzymes with their respective substrate and choose the right one among options given:

Column-I	**Column-II**
(A) Lipase	(i) Dipeptides
(B) Nuclease	(ii) Fats
(C) Carboxypeptidase	(iii) Nucleic acids
(D) Dipeptidases	(iv) Proteins, peptones and proteoses.

(a) (A) - (ii), (B) - (iii), (C) - (i), (D) - (iv)
(b) (A) - (iii), (B) - (iv), (C) - (ii), (D) - (i)
(c) (A) - (iii), (B) - (i), (C) - (iv), (D) - (ii)
(d) (A) - (ii), (B) - (iii), (C) - (iv), (D) - (i)

263, Reaction

185. Dental formula in human beings is
(a) $\frac{3223}{3223}$ (b) $\frac{2123}{2123}$
(c) $\frac{1232}{1232}$ (d) $\frac{2233}{2233}$

Pg. 258, 2nd para

186. Liver is the largest gland and is associated with various functions. Choose one of the options below which is not correct.
(a) Metabolism of carbohydrate
(b) Digestion of fat
(c) Formation of bile
(d) Secretion of hormone, called gastrin

Pg. 260, 4th para

187. Mark the right statement among the following.
(a) Trypsinogen is an inactive enzyme.
(b) Trypsinogen is secreted by intestinal mucosa.
(c) Enterokinase is secreted by pancreas.
(d) Bile contains trypsin

Pg. 263, Reaction

BODY FLUIDS AND CIRCULATION

1. Select the incorrect statement from the following.
(a) Simple organisms like sponges and coelenterates circulates water from their surroundings through their body cavities to facilitate cells to exchange substances.
(b) Different groups of animals have evolved the same method for transport.
(c) Blood is the most commonly used body fluid by most of the higher organisms for transport.
(d) Lymph also helps in the transport of certain substances in human.
Pg 278 - 1st, 4th to 2nd last line

2. Blood is a special connective tissue that consists of
(a) Plasma only
(b) Formed elements only
(c) Plasma + Formed elements
(d) Plasma + Nutrient substance
Pg 278 - 18.1, 2nd line

3. The colour of plasma is
(a) Straw colour (b) Red colour
(c) Colourless (d) Blue colour
Pg 278 - 18.1.1, 1st line

4. How much percentage of plasma is water?
(a) 90-92% (b) 80-90 %
(c) 60-65% (d) 10-15%
Pg 278 - 18.1.1, 2nd line

5. What is serum?
(a) (Blood) - (Plasma)
(b) (Blood) - (Plasma + RBC)
(c) (Plasma) - (Clotting factor)
(d) (Plasma) - (WBC)
Pg 279 - 18.1.1, last line

6. How much protein is present in plasma (in %)?
(a) 2-4% (b) 6-8%
(c) 10% (d) 15-20%
Pg 278 - 18.1.1, 2nd line

7. Which of the following protein is required for coagulation?
(a) Fibrinogen (b) Globulin
(c) Albumin (d) All of these
Pg 279 - 18.1.1, 1st line

8. Formed element constitutes how much per cent of blood?
(a) 55% (b) 45%
(c) 35% (d) 65%
Pg 279 - 18.1.2, 1st line

9. Plasma without fibrinogen is called
(a) Blood (b) Serum
(c) Formed elements (d) Antibodies
Pg 279

10. Find out the incorrect statement from the following.
(a) Globulins are primarily involved in the defence mechanism of body.
(b) Albumin is the main osmotic protein of blood.
(c) Plasma without clotting factor is called serum.
(d) Factors for coagulation of blood are also present in plasma in an active form.
Pg 279 - 18.1.1, 2nd line, 2nd last line

11. The most abundant cell in human blood is
(a) Neutrophils (b) Monocytes
(c) Lymphocytes (d) None of these
Pg 279 - 18.1.2, 2nd line

12. The main osmotic protein of blood is
(a) Albumin
(c) Fibrinogen
(b) Globulin
(d) Thromboplastin
Pg 279 - 18.1.1

13. Match the columns.

Colum-I	**Column-II**
Types of WBC	Abundance of Total WBC (%)
A. Monocytes	1. 2-3%
B. Basophils	2 . 6-8%
C. Eosinophils	3. 0.5-1%

(a) A-1,B-1,C-3 (b) A-3,B-2,C- 1
(c) A-2,B-3,C-1 (d) A-2,B- 1.C-3
Pg 279 - 18.1.2, 3rd para

14. Which blood protein is primarily involved in defence mechanism?
(a) Albumin (b) Globulin
(c) Fibrinogen (d) Thromboplastin
Pg 279 - 18.1.1, 2nd line

15. Number of erythrocytes in mm3 of blood are
(a) 4.5 to 5 million (b) 5 to 5.5 million
(c) 5.5 to 6.5 million (d) 3 million
Pg 279 - 18.1.2, 2nd para

16. The shape of RBC in mammal is
(a) Oval (b) Biconvex
(c) Biconcave (d) Flattened
Pg 279 - 18.1.2, 2nd para

17. Deficiency of which of the following blood cell leads to bleeding?
(a) Thrombocytes (b) Neutrophils
(c) Monocytes (d) RBCs
Pg 280 - 18.1.2, 2nd para

18. Select the true statement about RBC from the following.
(a) RBCs have an average life span of 120 days.
(b) RBCs are destroyed in the spleen (graveyard of RBCs).
(c) RBCs are devoid of nucleus in most of the mammals.
(d) All the above
Pg 279 - 18.1.2, 2nd para

19. Leucocytes are known as WBCs as they are colourless due to
(a) Presence of nucleus.
(b) White pigment present in them.
(c) Lack of haemoglobin.
(d) All of these
Pg 279 - 18.1.2, 3rd para, 1st line

20. A healthy individual has how much amount of haemoglobin in 100 ml of blood?
(a) 6-8 gm (b) 12-16 gm
(c) 18-20 gm (d) 2-A gm
Pg 279 - 18.1.2, 2nd para

21. Which of the following are granulocytes (WBCs)?
(a) Neutrophils and monocytes.
(b) Neutrophils, eosinophils and basophiles.
(c) Monocytes and lymphocytes.
(d) Lymphocytes and RBCs.
Pg 279 - 18.1.2, 3rd para

22. The cell involved in inflammatory reaction is
(a) RBCs (b) Platelets
(c) Basophils (d) All of these
Pg 279 - 18.1.2, 3rd para

23. The number of WBCs in mm3 is
(a) 6000-8000 (b) 3000-6000
(c) 3000-11000 (d) 1000-2000
Pg 280 - 18.1.2, 2nd para, 1st line

24. Which of the following is nucleated cell in human?
(a) RBCs (b)WBCs
(c) Platelets (d) All of these
Pg 280 - 18.1.2, 2nd para, 1st line

25. Megakaryocytes are found in
(a) Lungs (b) Liver
(c) Bone marrow (d) Spleen
Pg 280 - 18.1.2, 2nd para

26. Asthma is characterized by increase in which of the following leucocytes in blood?
(a) Basophile (b) Eosinophils
(c) Neutrophils (d) Monocytes
Pg 279 - 18.1.2

27. The formed elements consist of
(a) RBC (b)WBC
(c) Platelet (d) All of these
Pg 279 - 18.1.2

28. RBCs are destroyed in which of the following organs ofbody?
(a) Lungs (b) Spleen
(c) Kidney (d) Brain
Pg 279 - 18.1.2, 2nd para, last line

29. Basophile secretes
(a) Histamine (b) Serotonin
(c) Heparin (d) All of these
Pg 279 - 18.1.2, 2nd para, last line

30. Which of the following WBCs are associated with allergic reactions?
(a) Neutrophils (b) Monocytes
(c) Eosinophils (d) Lymphocytes
Pg 279, last line

31. Which of the following is an incorrect statement about leucocytes?
(a) They are nucleated.
(b) They are approximately averaged between 6000-8000 mn^{-3} of blood in numbers.
(c) Two main types are found namely granulocytes and agranulocytes.
(d) Monocytes are the most abundant WBCs.
Pg 279 - 18.1.2, 3rd para

32. Histamine is secreted by which of the following blood cells?

(a) Basophils (b) Eosinophils

(c) Monocytes (d) Lymphocytes

Pg 279 - 18.1.2, 3rd para

33. Lymphocyte forms how much per cent of WBCs?

(a) 20-25% (b) 2-3%

(c) 6-8% (d) 60-65%

Pg 280 - 18.1.2, 2nd line

34. Which of the following cells are responsible for immune response of the body?

(a) T lymphocyte (b) B lymphocyte

(c) Both (a) and (b) (d) Astrocytes

Pg 280 - 18.1.2, 3rd line

35. Which of the following is correct about platelets?

(a) Cell fragments of megakaryocytes.

(b) 1.5 to 3.5 lac/mm3 in blood.

(c) Also called thrombocytes!

(d) All of these

Pg 280 - 18.1.2, last para

36. Blood is a special type of connective tissue which

(a) Consists of a fluid metric (Plasma).

(b) Formed elements.

(c) Most commonly used body fluid by most of the higher organism.

(d) All the above

Pg 278

37. The given diagram shows which cell of blood?

(a) Neutrophil (b) Basophil

(c) Eosinophil (d) Monocyte

Pg 279, Fig. 18.1

38. Which of the following is a true statement about this diagram?

(a) This is the most abundant cell of blood.

(b) This cell is phagocytic in nature.

(c) Abundance in blood is 60-65%.

(d) This cell secretes histamine, serotonin and heparin.

Pg 279, Fig. 18.1

39. The function of the cell fragments in blood (given in the diagram) is

(a) To resist infection.

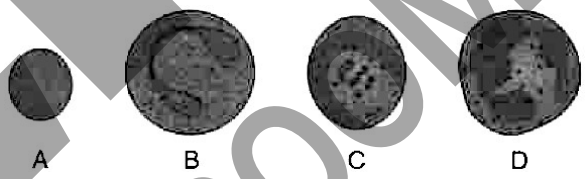
(b) To be responsible for immune response.

(c) To help in clotting of blood.

(d) To resist allergy.

Pg 279, Fig. 18.1

40. Which cell represents surface antigen for ABO blood group?

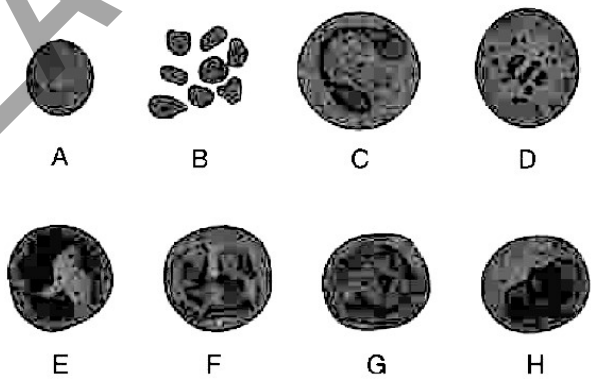


(a) A (b) B

(c) C (d) D

Pg 279

41. Identify A, B, C, D, E, F, G and H in the given diagram.



(a) A: Neutrophil, B: Eosinophil, C: Platelets, D: Basophil, E: Neutrophil, F: Monocyte, G: T lymphocyte, H: B lymphocyte.

(b) A: RBC, B: Platelets, C: Basophil, D: Eosinophil, E: Monocyte, F: Neutrophil, G: T lymphocyte, H: B lymphocyte.

(c) A: RBC, B: Platelets, C: Eosinophil, D: Basophil, E: Neutrophil, F: Monocyte, G: T lymphocyte, H: B lymphocyte.

(d) A: RBC, B: Platelets, C: Eosinophil, D: Basophil, E: Neutrophil, F: Monocyte, G: T lymphocyte, H: B lymphocyte.

Pg 279, Fig. 18.1

42. Lymph is known as

(a) Tissue fluid (b) Interstitial fluid

(c) Both (a) and (b) (d) Plasma

Pg 282, Fig. 18.2

43. Lymph

(a) Transports oxygen to brain.

(b) Transports CO_2 to lungs.

(c) Returns interstitial fluid to blood.

(d) Returns RBCs and WBCs to lymph nodes.

Pg 282, Fig. 18.2

44. Find the correct descending order to percentage proportion of leucocytes in human blood.

(a) Neutrophils → Basophils → Lymphocytes → Acidophils (Eosinophils) → Monocytes

(b) Neutrophils → Monocytes → Lymphocytes → Acidophils → Basophils

(c) Neutrophils → Lymphocytes → Monocytes → Acidophils → Basophils

(d) Neutrophils → Acidophils → Basophils → Lymphocytes → Monocytes

Pg 282, Fig.18.1.2, 3rd para

45. Which of the following is a pair of phagocytic cells?

(a) RBCs and eosinophils.

(b) Basophiles and acidophils.

(c) Neutrophils and monocytes.

(d) Monocytes and B lymphocyte.

Pg 282, Fig.18.1.2

46. Which of the following statement is false about lymph?

(a) It is a colourless fluid.

(b) It is an important carrier for nutrients and hormones.

(c) Fats are absorbed through lymph in the lacteals.

(d) Lymph contain RBCs.

Pg 282, Fig.18.2

47. ABO grouping is based on how many antigens present or absent on WBCs?

(a) 1 (b)2

(c) 3 (d) None of these

Pg 280, Fig. 18.1.3.1

48. Select the correct statement from the following.

(a) Surface antigen on RBC always induce autoimmune response.

(b) Blood grouping (ABO) is an example of multiple allelism.

(c) AB blood group is universal recipient as well as donor.

(d) 4 phenotype of blood group (ABO) are possible and 5 genotype of blood group (ABO) are possible.

Pg 280, Fig. 18.1.3.1

49. Rh antigen is present on the surface of which blood 'cell ?

(a) RBC (b)WBC

(c) Platelets (d) All of these

Pg 281, Fig. 18.1.3.2

50. ABO grouping is based on the presence or absence of how many antigens on cell membrane of RBC?

(a) 1 (b) 2

(c) 3 (d) 4

Pg 280, Fig. 18.1.3.1

51. A patient with blood group 'A' was inj ured in an accident and has lost a lot of blood during injury. Which blood group the doctor should effectively use in this case?

(a) AB (b)A/O

(c) B/O (d) AB/A/B

Pg 280, Fig. 18.1.3.1

52. How many people are Rh +ve in human population?

(a) 80% (b)20%

(c) 60% (d)40%

Pg 281, Fig. 18.1.3.2

53. Rh incompatibility in first pregnancy occurs when

(a) Foetus develop its heart completely.

(b) During the delivery of first child.

(c) When foetal organs completely develop.

(d) Never occur in first pregnancy.

Pg 281, Fig. 18.1.3.2

54. Erythroblastosis fetalis is

(a) HDN (haemolytic disease of new born)

(b) Rh incompatibility

(c) Both (a) and (b)

(d) None of these

Pg 281, Fig. 18.1.3.2

55. There is a vertical transmission of Rh antibody from mother to foetus because they are ____ type of antibody.

(a) Ig M

(b) Ig G

(c) IgA

(d) IgD

Pg 281, Fig. 18.1.3.2

56. Select the incorrect statement from the following.

(a) Clot or coagulum is formed mainly by network of fibrin in which died and damaged formed element of blood are trapped.

(b) Inactive fibrinogen is converted to fibrin by hormone thrombin.

(c) Prothrombin is converted into thrombin by the enzyme complex called thrombokinase.

(d) Platelet or injured tissue released certain factors which initiate coagulation.

Pg 281, Fig. 18.1.3.4

57. Select the incorrect statement from the following.

(a) When platelet releases certain factor which initiates clotting, then it is known as intrinsic pathway.

(b) When injured tissue releases certain factor which initiates clotting, then it is known as extrinsic pathway.

(c) Calcium plays a minor role in clotting.

(d) Coagulation prevents excessive loss of blood from the body in injured part.

Pg 281, Fig. 18.1.4

58. Which of the following enzyme causes conversion of prothrombin into thrombin?

(a) Thrombinase

(b) Prothrombinase

(c) Thrombokinase

(d) Rennin

Pg 281, Fig. 18.1.4

59. How many mechanisms are there for clotting in our body?

(a) 1

(b) 2

(c) 3

(d) 4

Pg 280, Table - 18.1

60. Fill in the blanks in the below table.

Blood Group	Antigens in Plasma	Antibody on RBCs	Donor Groups
A	A	Anti-B	A, O
B	B	II	B, O
AB	AB	NIL	A,B,ABO,O
O	I	III	IV

(a) A: Nil, B: Nil, C: Nil, D: 0

(b) A: Nil, B: Nil, C: Anti-A, B, D: AB

(c) A: Nil, B: Anti-A, B, C: Nil, D: O

(d) A: Nil, B: Anti-A, C: Anti-A, B, D: O

Pg 280, Fig. 18.1.3.1, Table - 18.1

61. In case of emergency, which blood group could be safely transfused?

(a) AB Rh^- (b) AB Rh^+

(c) O Rh^- (d) O Rh^+

Pg 280, Table - 18.1

62. How many surface antigens are found in the membrane of RBCs of an individual having AB blood group?

(a) 1 (b) 2

(c) 3 (d) 4

63. Which of the following is expected if husband is Rh^+ and wife is Rh ?

(a) No problem with first pregnancy.

(b) Problem would be expected with future pregnancies.

(c) Both (a) and (b)

(d) No problem could be expected in any pregnancy.

Pg 280, Fig. 18.1.3.1

64. What of the following is the correct order of these events?

1. Conversion of fibrinogen to fibrin.
2. Clot retraction and leakage of serum.
3. Thromboplastin formation.
4. Conversion of prothrombin to thrombin.

(a) 3,2,1,4 (b) 3, 4, 1,2

(c) 3,4,2, 1 (d) 4, 1,3,2

65. Which of the following individual is universal donor?

(a) Person having 'O' blood group.

(b) Person having 'AB' blood group.

(c) Person having 'A' blood group.

(d) Person having 'B' blood group.

Pg 280, Table 18.1

66. Which blood group individual is considered as universal recipient?

(a) A (b) B

(c) AB (d) O

Pg 280, Table 18.1

67. Clot or coagulum formed of a network of threads is called

(a) Keratin (b) Actin

(c) Fibrin (d) Desmin

Pg 281, Figure 18.1.4

68. Which kind of antibodies are found in the plasma of a person having 'A' blood group?

(a) Anti-B

(b) Anti-A

(c) Anti-A and Anti-B

(d) No Antibodies are found in plasma.

Pg 280, Table 18.1

69. Open circulatory system is found in

(a) Arthropods and molluscs.

(b) Annelids and chordates.

(c) Annelids and arthropods.

(d) Fishes and molluscs.

Pg 282, Fig. 18.3, 2nd line

70. Closed circulatory system is found in

(a) Arthropod and chordates.

(b) Molluscs and chordates.

(c) Amphibians and molluscs.

(d) Annelids and chordates.

Pg 282, Fig. 18.3, 3rd line

71. In an open circulatory system,

(a) There is no heart.

(b) There is no need of blood vessels.

(c) There are open spaces or sinuses in the body.

(d) All of these

Pg 282, Fig. 18.3, 2nd line

72. Which of the following has a closed type of circulatory system?

(a) Cockroach (b) Fish

(c) Scorpion (d) Mollusc

Pg 282, Fig. 18.3

73. Which of the following has a closed blood vascular system?

(a) Cockroach (b) Hydra

(c) Sponge (d) Earthworm

Pg 282, Fig. 18.3

74. Single heart circuit occurs in

(a) Fishes (b) Frogs

(c) Reptiles (d) Man

Pg 282, Fig. 18.3

75. Four-chambered heart is found in

(a) Cobra (b) Tortoise

(c) Salamander (d) Crocodile

Pg 282, Fig. 18.3, 2nd para

76. Select the correct matching.

Column-I	**Column-II**
(A) Fishes	(i) Three-chambered
(B) Amphibian	(ii) Four-chambered
(C) Reptiles	(iii) One-chambered
(D) Birds	(iv) Two-chambered
(E) Mammals	
(F) Crocodile	

(a) (A), (B) $\rightarrow$ (ii) (b)(B),(C) $\rightarrow$ (i)

(c) (D), (E), (F) $\rightarrow$ (iv) (d) (A), (B), (C) $\rightarrow$ (ii)

Pg 282, Fig. 18.3, 2nd para

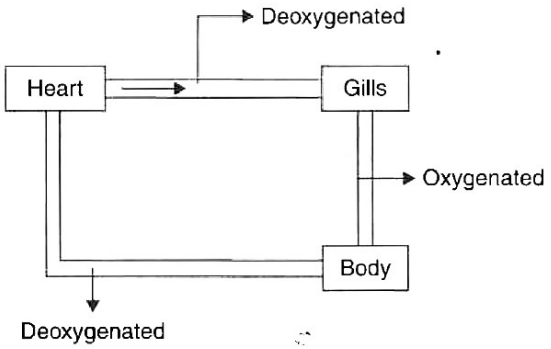
77. Incomplete double circulation is found in

(a) Amphibian (b) Reptiles

(c) Fishes (d) Both (a) and (b)

Fig. 18.3, 2nd para

78. The following diagram represents circulation in



(a) Fishes (c) Birds

(b) Amphibians (d) Reptiles

Fig. 18.3, 2nd para

79. Hepatic portal vein carry blood from

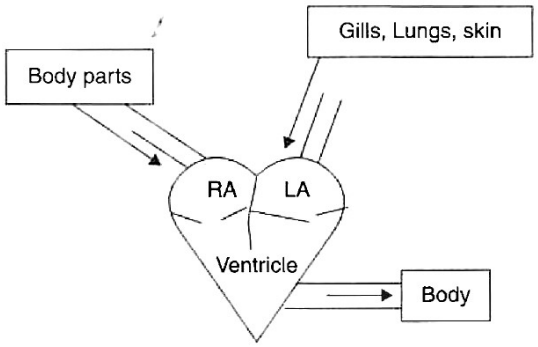
(a) Liver to heart

(b) Intestine to liver

(c) Liver to lungs

(d) Kidney to liver

80. In the following diagram, the circulation is found in



(a) Amphibian (c) Both (a) and (b)
(b) Reptiles (d) Birds

Fig. 18.3, 2nd para

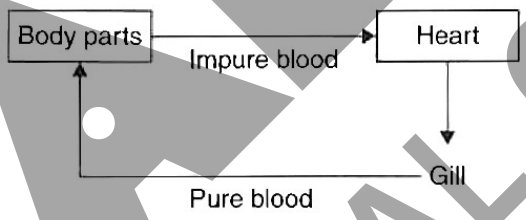
81. Incomplete double circulation is found in
(a) Frog (b) Psittacula
(c) Crow (d) Cockroach

Pg 282 Fig. 18.3, 2nd para

82. Double circulation is found in
(a) Birds (b) Crocodile
(c) Mammals (d) All of these

Pg 282 Fig. 18.3, 2nd para

83. In fishes, the blood circulation is represented as



The above flow of blood indicates it is a
(a) Double circulation
(b) Single circulation
(c) Incomplete single circulation
(d) Incomplete double circulation

84. Mammals are said to have double circulation. It means
(a) Blood vessels are paired.
(b) There are two types of blood vessels attached to every organ.
(c) There are two systems, one from the heart to the lungs and back to the rest of the body.
(d) The blood circulates twice through the heart.

Pg 282 Fig. 18.3, 2nd para

85. Pulmonary circulation is required for
(a) Nutrient supply to lungs.
(b) Elimination of waste products from the lungs.
(c) Oxygenation of deoxygenated blood.
(d) Nutrient supply to heart.

Pg 283 Fig. 18.3.1

86. Pulmonary circulation includes
(a) Pulmonary artery
(b) Pulmonary vein
(c) Lungs
(d) All of these

Pg 283 Fig. 18.3.1

87. A system which supplies blood to heart is
(a) Portal system
(b) Pulmonary system
(c) Coronary system
(d) All of these

Pg 284

88. Hepatic portal system starts from
(a) Digestive system to liver.
(b) Kidney to liver.
(c) Liver to heart.
(d) Liver to kidney.

89. A unique vascular connection existing between the digestive tract and liver is called
(a) Renal portal system
(b) Hypothalamus - Hypophyseal portal system
(c) Hepatic portal system
(d) All of these

90. In amphibia, the heart has
(a) Two auricles and two ventricles.
(b) Two auricles and one ventricle.
(c) One auricle and two ventricles.
(d) One auricle, one ventricle and one sinus venous

91. The blood circulation, which starts and ends into capillaries, is
(a) Portal circulation
(b) Renal circulation
(c) Hepatic circulation
(d) Lymphatic circulation

92. Which one of the following is absent in human beings?

(a) Hypophyseal-hypothalamic tract

(b) Hepatic portal vein

(c) Renal portal vein

(d) None of these

93. Heart is derived from

(a) Ectoderm (b) Endoderm

(c) Mesoderm (d) All of these

Pg 283 Fig. 18.3.1, 2nd para

94. Which of the following statement is not true?

(a) Heart is ectodermal in origin.

(b) In human beings', heart is situated in the thoracic cavity, in between the two lungs slightly tilted to the left.

(c) Human heart has the size of a clenched fist.

(d) Heart is protected by double wall membranous bag (pericardium) with pericardial fluid.

Pg 283 Fig. 18.3.1, 2nd para, 1st-3rd lines

95. Select the total number of thick structures from the following.

(A) Interatrial septum (muscular wall)

(B) Interventricular septum

(C) Atrioventricular septum (fibrous)

(D) Walls of ventricles

(a) 1 (b) 2

(c) 3 (d) 4

Pg 283 Fig. 18.3.1, 2nd para, 5th-6th lines

96. How many papillary muscles are present in right ventricle?

(a) 1 (b) 2

(c) 3 (d) 4

97. Apex of heart is

(a) Upper and tilted toward left.

(b) Lower and tilted towards left.

(c) Upper and tilted towards right.

(d) Lower and tilted towards right.

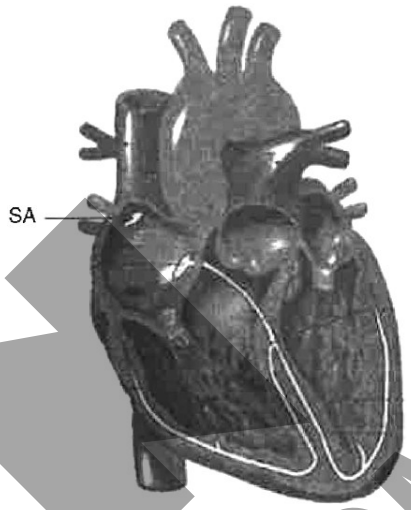
Pg 283 Fig. 18.3.1, 2nd para

98. Which of the following organs has papillary muscles?

(a) Ciliary body (b) Legs

(c) Wall of heart (d) Mammary glands

99. The full form of 'SA' in the following diagram is



(a) Sin-atrial node (b) Sinu-Atrial node

(c) Sino-Atrial node (d) Sinus-Atrial node

Pg 283 Fig. 18.2

100. Bundle of His consists of

(A) Right bundle branch

(B) Left bundle branch

(C) Purkinje fibres

(D)AV bundle

(a) A, Band C only (b) A, B, C ,D

(c) B, C and D only (d) C and D only

Pg 284 Fig. 18.3.2

101. Bicuspid valve/mitral valve is found between

(a) Left atrium and left ventricle.

(b) Right atrium and right ventricle.

(c) Right atrium and left ventricle.

(d) Left atrium and right ventricle.

Pg 283 - 2nd last line

102. Tricuspid valve is present between the

(a) Two atria

(b) Two ventricles

(c) Left atrium and left ventricle.

(d) Right atrium and right ventricle.

Pg 283 - 2nd last line

103. Chordae tendineae are found in

(a) Joints

(b) Atria of heart.

(c) Ventricles of heart

(d) Ventricles of brain.

Pg 283 - Fig. 18.2

104. Ventricles are thick-walled when compared to atrium because
(a) It is to receive blood from atria.
(b) It is present on the posterior side.
(c) It has to pump blood.
(d) None of these

105. Papillary muscles are located in
(a) Heart ventricles of human.
(b) Dermis of mammalian skin.
(c) Orbits of vertebrate eyes.
(d) Pylorus of vertebrate stomach.

106. Purkinje fibres are found in
(a) Brain (b) Kidneys
(c) Skin (d) Heart

Pg 284 - Fig. 18.3.1

107. Which of the following has thickest wall?
(a) Left auricle (b) Left ventricle
(c) Right auricle (d) Right ventricle

108. Heart of 'heart' is
(a) SAnode (b) AV node
(c) Bundle of His (d) Purkinje fibres

Pg 284 - Fig. 18.3.1

109. SA node is located in
(a) Upper left corner of right atrium.
(b) Lower left corner of left atrium.
(c) Lower right corner of left atrium.
(d) Upper right corner of right atrium.

Pg 284 - Fig. 18.3.1, 2nd para

110. Human heart is
a) Neurogenic (b) Myogenic
(c) Cardiogenic (d) Digenic

Pg 284 - Fig. 18.3.1, 2nd para

111. Which of the following term does not apply to human heart?
(a) Pacemaker (b) Four-chambered
(c) Mitral valve (d) Neurogenic

Pg 284 - Fig. 18.3.1, 2nd para

112. The rate of heartbeat is determined by
(a) SA node
(b) AV node
(c) Purkinje fibres
(d) Papillary muscles

113. Why SA node is called the pacemaker of heart?
(a) It can change the contractile activity generated by AV node.
(b) It delays the transmission of impulse between the atria and ventricles.
(c) It gets stimulated when it receives neural signal.
(d) It initiates and maintains the rhythmic contractile activity of heart.

Pg 284 - Fig. 18.3.1, 2nd para

114. Sinoatrial node (SAN) can generate impulses from
(a) 70-75 min^{-1} (b) 50-55 min^{-1}
c) 35-40 min^{-1} (d) 90-100 min^{-1}

Pg 284 - Fig. 18.3.1, 2nd para

115. The impulse of heart beat originates from
(a) SAN (b)AVN
(c) Vagus nerve (d) Cardiac nerve

Pg 284 - Fig. 18.3.1

116. The rate of heart is determined by
(a) SAN (b)AVN
(c) Purkinje fibres (d) Bundle of His

Pg 284 - Fig. 18.3.1

117. Bundle of His is a group of
(a) Ganglia (b) Nerve fibres
(c) Muscular fibres (d) Connective tissue

Pg 284 - Fig. 18.3.1

118. Neural centre which can alter the cardiac activity is present in which part of the brain?
(a) Cerebellum
(b) Diencephalon
(c) Medulla oblongata
(d) Pons

Pg 287 - Fig. 18.5

119. Bundle of His is found in
(a) Right atrium (b) Left atrium
(c) Both (a) and (b) (d) Interventricular septum

Pg 284 - Fig. 18.3.1

120. An atrioventricular valve prevents the back flow or leakage of blood from the
(a) Right ventricle into the right atrium.
(b) Left atrium into the left ventricle.
(c) Aorta into the left ventricle.
(d) Pulmonary vein into the right atrium.

Pg 284 - Fig. 18.3.1, 1st para

121. How many double circulations are normally completed by the human heart in one minute?
(a) 8 (b) 16
(c) 36 (d) 72

122. The duration of cardiac cycle in a normal man is
(a) 0.8 seconds (b) 80 seconds
(c) 60 seconds (d) 72 seconds

Pg 284 - Fig. 18.3.2

123. During systole of heart,
(a) Only atria contracts.
(b) Only ventricles contract.
(c) Atria and ventricles contract separately.
(d) Atria and ventricles contract simultaneously.

Pg 284 - Fig. 18.3.2

124. During diastole, blood
(a) Enters the heart
(b) Leaves the heart
(c) Leaves the ventricle
(d) Enters into lungs

Pg 284 - Fig. 18.3.2

125. During ventricular systole, oxygenated blood is pumped into the
(a) Aorta and deoxygenated blood is pumped into the pulmonary artery.
(b) Pulmonary artery and deoxygenated blood is pumped into the artery.
(c) Aorta and deoxygenated blood is pumped into pulmonary vein.
(d) Pulmonary vein and deoxygenated blood is pumped into pulmonary artery.

Pg 284 - Fig. 18.3.2, last line

126. To reach the left side of heart, the blood must pass through
(a) Lungs (b) Liver
(c) Kidneys (d) Sinus venosus

Pg 285, 1st para

127. When ventricular systole occurs
(a) Atrial diastole coincides.
(b) Tricuspid and bicuspid valves close.
(c) Semilunar valves guarding the pulmonary artery and aorta are forced to open.
(d) All the above

Pg 284 - Fig. 18.3.2, last line

128. During cardiac cycle, about ____% of ventricular filling occurs prior to atrial contraction and ____ % ventricular filling occurs due to atrial contraction.
(a) 50, 50 (b) 70, 30
(c) 30, 70 (d) 10, 90

Fig. 18.3.2

129. Which of the following events do not occur during joint diastole?
A. All four chambers of heart are in relaxed state.
B. Tricuspid and bicuspid valves open.
C. Action potential is conducted from SAN to AVN
D. Blood from the pulmonary veins and vena cava flows into the left and right ventricles, respectively through the left and right atria.
E. The semilunar valves are closed.
(a) Only E (b) Only C
(c) Only D (d) Only A and B

Fig. 18.3.2

130. The amount of blood to be pumped out by each ventricle/minute is called
(a) Stroke volume (b) Cardiac output
(c) ERV (d) IRV

Pg 285 - Fig. 18.3.2, 2nd para

131. During cardiac cycle each ventricle pumps out about 70 ml of blood and it is called
(a) Stroke volume (b) Cardiac output
(c) Tidal volume (d) Residual volume

Pg 285 - Fig. 18.3.2, 2nd para

132. The cardiac output is
(a) Stroke volume (SV)×Heart rate (HR)=51/min
(b) SV × HR = 500 ml/min
(c) SV × HR = 72 ml/min
(d) SV × HR = 70 ml/min

Pg 285 - Fig. 18.3.2, 2nd para

133. Which of the following statement is incorrect?
(a) Cardiac output of an athlete is much higher than that of an ordinary man.
(b) In each minute, a single cardiac cycle is performed.
(c) During each cardiac cycle, two prominent sounds are produced.
(d) Cardiac cycle includes atrial systole, ventricular systole and joint diastole.

Pg 285 - Fig. 18.3.2, 2nd para

134. Identify the correct sequence of events in a cardiac cycle.

(a) Diastole, atrial systole and ventricular diastole.

(b) Atrial systole, ventricular diastole and ventricular systole.

(c) Atrial systole, ventricular systole and joint diastole.

(d) Ventricular diastole, diastole, ventricular systole and atrial systole.

Fig. 18.3.2

135. The first cardiac sound (lub) is associated with

(a) Closure of tricuspid and bicuspid valves.

(b) Opening of tricuspid valves.

(c) Closure of semilunar valves.

(d) Opening of semilunar valves.

Pg 285 - Fig. 18.3.2, last para

136. Which of the following statement is wrong for second cardiac sound?

(a) It is heard as dup.

(b) It is produced due to closure of semilunar valves.

(c) It is clinically significant.

(d) It is clinically non-significant.

Pg 285 - Fig. 18.3.2, last para

137. Which of the following is correct about human heart?

(a) Volume of both atria > Volume of both ventricles

(b) Volume of both ventricle > Volume of both atria

(c) Volume of both atria = Volume of both ventricles

(d) Ventricles are upper chambers and atria are lower chambers in our heart.

Fig. 18.3.2

138. Which of the following blood vessels possess semilunar valves?

(a) Vena cava and aorta.

(b) Aorta and pulmonary artery.

(c) Pulmonary artery and pulmonary vein.

(d) Pulmonary vein and vena cava.

Pg 284 - top line

139. The heartbeat of a person increases at the time of an interview due to the secretion of

(a) Renin

(b) Adrenaline

(c) ADH

(d)ACTH

140. Which of the following set is correct?

(a) Sebum — Analgesic

(b) Vitamin — Nicotine

(c) Corpus callosum — Graafian follicle

(d) Bundle of His — Purkinje fibres

141. The cardiac centre lies in

(a) Medulla oblongata

(b) Pons

(c) Cerebrum

(d) Epithalamus

Pg 287 - Fig. 18.5, 2nd line

142. The cardiac centre can moderate the cardiac functions through

(a) Somatic neural system

(b) Parasympathetic nervous system only.

(c) Autonomic nervous system (ANS)

(d) Sympathetic nervous system only.

Pg 287 - Fig. 18.5

143. Neural signal through the sympathetic nervous (part of ANS) increases the cardiac output because of

(a) Increasing the rate of heat beat.

(b) Increasing the strength of ventricular contraction.

(c) Both (a) and (b)

(d) Increasing the stimulation of vagus nerve.

Pg 287 - Fig. 18.5, 3rd line

144. Parasympathetic neural signal decreases cardiac output by

(a) Decreasing the rate of heart beat.

(b) Decreasing the speed conduction of action potential.

(c) Both (a) and (b)

(d) Increasing adrenal medulla hormones secretion.

Pg 287 - Fig. 18.5, 4th line

145. Heartbeat increases
(a) On stimulation of sympathetic nerves.
(b) On stimulation of vagus nerve (parasympathetic nerve).
(c) By adrenalin secreted by adrenal medulla.
(d) Both (a) and (c) :

Pg 287 - Fig. 18.5

146. Select the total number of incorrect matching from the following.
(A) ECG - Electrocardiogram
(B) AVN - Atrioventricular node
(C) SAN - Sinoatrial node
(D) WBC - White blue cells
(E) RBC - Red blood cells
(a) 1 (b) 2
(c) 3 (d) 4

147. Heartbeat is accelerated by
(a) Sympathetic nerves and acetylcholine.
(b) Cranial nerves and adrenaline.
(c) Cranial nerves and acetylcholine.
(d) Sympathetic nerves and epinephrine.

Pg 287 - Fig. 18.5

148. Body has the capacity to alter
(a) Stroke volume (b) Heart rate
(c) Cardiac output (d)All of these

Pg 285 - 2nd para

149. To obtain standard ECG, a patient is connected to the machine with three electrical leads attached to the following parts except
(a) Right wrist (b) Left wrist
(c) Right ankle (d) Left ankle

Pg 285-286 - Fig. 18.3.3

150. Find out the incorrect statement from the following.
(a) ECG is a graphical representation of the electrical activity of the heart during cardiac cycle.
(b) For a detailed evaluation of heart's function, multiple leads are attached to chest region (chest leads).
(c) P, R, T are +ve waves, whereas Q and S are -ve waves in standard ECG.
(d) The starting of T wave marks the end of systole of ventricles.

Pg 285-286 - Fig. 18.3.3

151. Select the correct statement from the following.
(a) ECG is of great clinical insignificance.
(b) By counting the number of QRS complexes (in the given time period), we can find the pulse rate.
(c) The contraction of atria starts with the starting of Q wave.
(d) T wave represents repolarization of atria.

Pg 286 - Fig. 18.3.3

152. Electrocardiogram is a measure of
(a) Heart rate
(b) Ventricular contraction
(c) Volume of blood pumped
(d) Electrical activity of heart

Fig. 18.3.3

153. P wave represents
(a) Depolarization of ventricles
(b) Repolarization of ventricle
(c) Repolarization of atria
(d) Depolarization of atria

Pg 286, 3rd para

154. QRS complex represents the
(a) Depolarization of ventricles
(b) Repolarization of ventricles
(c) Repolarization of atria
(d) Depolarization of atria

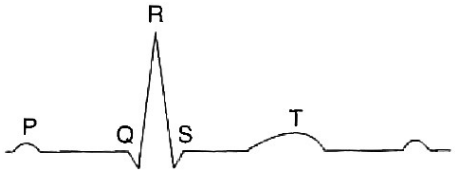
Pg 286, 3rd para

155. T wave in an ECG represents
(a) Depolarization of ventricles
(b) Repolarization of ventricles
(c) Repolarization of atria
(d) Depolarization of atria

Pg 286 - Fig. 18.3.3, 4th para

156. The instrument used to hear heartbeats is called
(a) Electrocardiograph
(b) Sphygmomanometer
(c) Stethoscope
(d) Haemometer

157. The below figure is the diagrammatic representation of standard ECG.

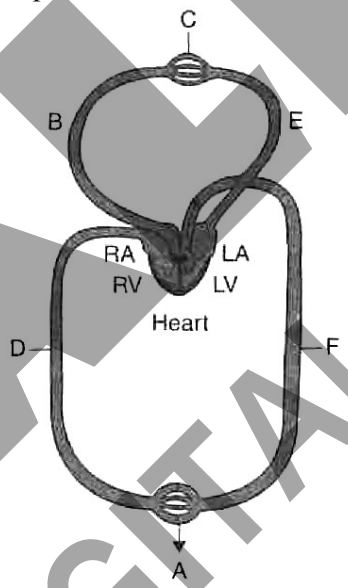


Column-1	Column-II
A. Pwave	I. Ventricular depolarization followed by ventricular contraction.
B. QRS complex	II. Atrial depolarization followed by systole of both atria.
C. Twave	III. Ventricular repolarization followed by ventricular relaxation.

(a) A-I,B-II,C-III (b) A-IH,B-II,C-I
(c) A-II, B-I, C-III (d) A-II,B-III,C-I

Pg 286 - Fig. 18.3

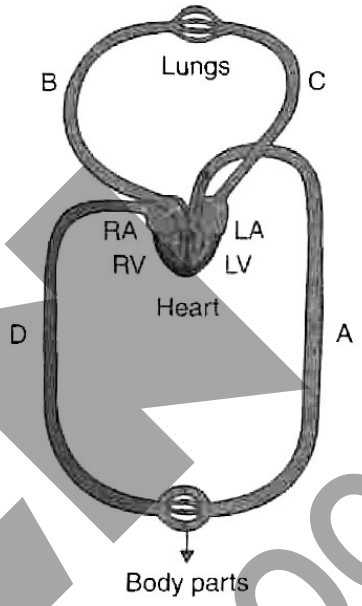
158. The following figure is the systematic representation of blood circulation in human. Identify the parts from A to F.



(a) A: Body parts, B: Pulmonary vein, C: Lungs, D: Vena cava, E: Pulmonary artery, F: Dorsal aorta.
(b) A: Body parts, B: Pulmonary artery, .C: Lungs, D: Vena cava, E: Pulmonary vein, F: Dorsal aorta.
(c) A: Body parts, B: Pulmonary artery, C: Lungs, D: Dorsal aorta, E: Pulmonary vein, F: Vena cava.
(d) A: Lungs, B: Pulmonary artery, C: Body parts, D: Dorsal aorta, E: Pulmonary vein, F: Vena cava.

18.4, Pg 287 - Fig. 18.4

159. Which of the following is the nature of blood passing through blood vessels (A, B, C and D)?



(a) A: Oxygenated, B: Deoxygenated, C: Oxygenated D: Deoxygenated.
(b) A: Oxygenated, B: Oxygenated, C: Deoxygenated, D: Deoxygenated.
(c) A: Deoxygenated, B: Deoxygenated C: Oxygenated D: Oxygenated.
(d) A: Deoxygenated, B: Oxygenated C: Deoxygenated D: Oxygenated.

18.4, Fig. 18.4

160. The rate of heartbeat is highest in
(a) Whale (b) Elephant
(c) Mouse (d) Man

161. Which of the following pair of terms represent both one and the same thing?
(a) Plasma - Serum
(b) Atrioventricular node - Pacemaker
(c) Leucocytes - Lymphocytes
(d) Mitral valve - Bicuspid valve

162. How many times a red blood corpuscle will have to pass through the heart in its journey from hepatic artery to the aorta?
(a) Two times (b) Only once
(c) Several times (d) Four times

163. Maximum pressure of blood is experienced
(a) When blood enters from left atrium to aorta.
(b) When blood enters from right atrium to aorta.
(c) When blood enters from left ventricle to aorta.
(d) When blood enters from right ventricle to aorta.

18.3.2

164. In mammals, veins differ from arteries in having
(a) Thicker walls
(b) Deeply present
(c) Carry blood away from heart.
(d) Internal valves

Pg 286 - Fig. 18.4

165. An artery is
(a) Thick-walled in which blood flows under low pressure.
(b) Thin-walled in which blood flows under high pressure.
(c) Thick-walled in which blood flows under high pressure.
(d) Thin-walled in which blood flows under low pressure.

Pg 286 - Fig. 18.4

166. Cells constituting the wall of capillaries are
(a) Parietal (b) Endothelial
(c) Oxyntic (d) Haemocytes

Pg 286 - Fig. 18.4, 1st para

167. A muscular wall is absent in
(a) Venule (b) Vein
(c) Capillary (d) Arteriole

Pg 286 - Fig. 18.4, 2nd para

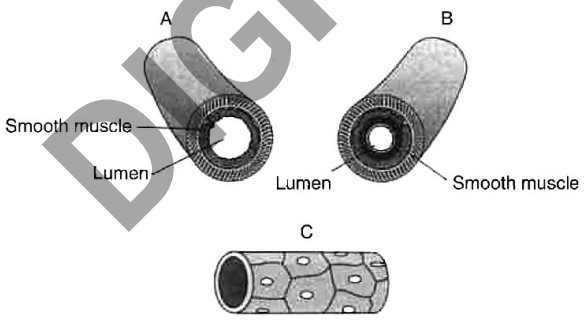
168. The contraction of right ventricle pumps blood into
(a) Dorsal aorta (b) Pulmonary vein
(c) Coronary artery (d) Pulmonary artery

Pg 286 - Fig. 18.4, 2nd para

169. Arteries carry oxygenated blood except in
(a) Pulmonary (b) Cardiac
(c) Hepatic (d) Systemic

Pg 286 - Fig. 18.4, 2nd para

170. Identify the following blood vessels.



(a) A: Capillary, B: Artery, C: Vein.
(b) A: Vein, B: Capillary, C: Artery.
(c) A: Vein, B: Artery, C: Capillary.
(d) A: Artery, B: Vein, C: Capillary.

Fig. 18.4

171. Which blood vessel has maximum pressure?
(a) Aorta (b) Pulmonary artery
(c) Pulmonary vein (d) Jugular vein

172. In adult, the normal blood pressure is
(a) 80/120 mmHg (b) 100/80 mmHg
(c) 120/80 mmHg (d) 100/120 mmHg

Pg 287 - Fig. 18.6

173. Normal BP = 120/80 mmHg in an adult. In this measurement, 120 mmHg is the _____ pressure and 80 mmHg is _____ pressure.
(a) Diastolic, systolic (b) Systolic, diastolic
(c) Pulse, diastolic (d) Pulse, systolic

Pg 287 - Fig. 18.6

174. The difference in blood pressure between systolic and diastolic phase is
(a) 10 mmHg (b) 40 mmHg
(c) 120 mmHg (d) 180 mmHg

Pg 287 - Fig. 18.6

175. Which one of the following value indicates hypertension?
(a) 120/80 mmHg (b) 80/120 mmHg
(c) 140/90 mmHg (d) 40/60 mmHg

Pg 287 - Fig. 18.6

176. The instrument by which BP of human beings are determined is called
(a) Ultrasound (b) Spirometer
(c) Stethoscope (d) Sphygmomanometer

177. Which of the following is true about hypertension?
(a) It leads to cardiac diseases.
(b) It affects vital organs like brain and kidney.
(c) If repeated checks of blood pressure in an individual is 140/90 or higher, then it shows hypertension.
(d) All the above

Pg 288 - top lines

178. Find the incorrect matching.
(a) CAD - Atherosclerosis
(b) Angina - Angina pectoris
(c) Stroke volume - Beat volume
(d) Heart failure - Heart attack

Pg 288 - Fig. 18.6

179. Match the columns.

Column-I	Column-II
(A) Heart failure	(1) Heart muscle is suddenly damaged by an inadequate blood supply.
(B) Cardiac arrest	(2) Chest pain due to inadequate 0 2 reaching the heart muscles.
(C) Heart attack	(3) Atherosclerosis
(D) Coronary	(4) Heart not pumping blood artery disease effectively enough to meet the needs of body (CAD).
(E) Angina	(5) Heart stops beating, pectoris

(a) A:4,B:5, C:1,D:3,E:2
(b) A:4,B:5,C:3,D:1,E:2
(c) A:4,B:3,C:5, D:2, E:1
(d) A:5, B:4, C:2,D:3,E:1

Pg 288 - Fig. 18.6

180. It is often referred as atherosclerosis and affects the blood vessels that supply blood to the heart muscles. It is caused by deposition of calcium, fat, cholesterol and fibrous tissues making the lumen of arteries narrow. What is the disease called?
(a) CAD (b) SCID
(c) Blue baby (d) Myocarditis

181. In a standard ECG which one of the following alphabets is the correct representation of the respective activity of the human heart?
(a) S - start of systole
(b) T - end of diastole
(c) P - depolarization of the atria
(d) R - repolarization of ventricles

Pg 285-286 - Fig. 18.3

182. The most popularly known blood grouping is the ABO grouping. It is named ABO and not ABC, because "O" in it refers to having
(a) Over dominance of this type on the genes for A and B types
(b) One antibody only, either anti-A or anti-B on the RBCs
(c) No antigens A and B on RBCs
(d) Other antigens besides A and B on RBCs

Pg 280 - Table-18.1

183. Compared to blood our lymph has
(a) Plasma without proteins
(b) More WBCs and no RBCs
(c) More RBCs and less WBCs
(d) No plasma

Fig. 18.2

184. Globulins contained in human blood plasma are primarily involved in
(a) Osmotic balance of body fluids
(b) Oxygen transport in the blood
(c) Clotting of blood
(d) Defence mechanisms of body

Pg 279 - Fig. 18.1.1, top line

185. Which type of white blood cells is concerned with the release of histamine and the natural anticoagulant heparin?
(a) Eosinophils (b) Monocytes
(c) Neutrophils (d) Basophils

Pg 279 - 2nd last line

186. The most active phagocytic white blood cells are
(a) Eosinophils and lymphocytes
(b) Neutrophils and Monocytes
(c) Neutrophils and eosinophils
(d) Lymphocytes and macrophages

Pg 279 - Fig. 18.1.2

187. In humans, blood passes from the post caval to the diastolic right atrium of heart due to
(a) Stimulation of the sino-auricular node
(b) Pressure difference between the post caval and atrium
(c) Pushing open of the venous valves
(d) Suction pull

188. A drop of each of the following is placed separately on four slides. Which of them does not coagulate?
(a) Blood serum
(b) Sample from the thoracic duct of lymphatic system
(c) Whole blood from pulmonary vein
(d) Blood plasma

Fig. 18.1

189. What is true about nereis, scorpion, cockroach and silver fish?

(a) They all possess dorsal heart

(b) None of them is aquatic

(c) They all belong to the same phylum

(d) They all have jointly paired append

190. Which one of the following has an open circulatory system?

(a) Periplaneta (b) Hirudinaria

(c) Octopus (d) Pheretima

191. Examination of blood of a person suspected having anaemia shows large, immature, nucleated erythrocytes without haemoglobin. Supplementing his diet with which of the following is likely to alleviate his symptoms?

(a) Folic acid and Cobalamin

(b) Riboflavin

(c) Iron compounds

(d) Thiamine

192. In the ABO system of blood groups, if both antigens are present but not antibody, the blood group of the individual would be

(a) B (b) O

(c) AB (d)A

Pg 280 - Table. 18.1

193. You are required to draw blood from a patient and to keep it in a test tube for analysis of blood corpuscles and plasma. You are also provided with the following four types of test tubes. Which of them will you not use for the purpose?

(a) Test tube containing calcium bicarbonate

(b) Chilled test tube

(c) Test tube containing heparin

(d) Test tube containing sodium oxalate

194. The cardiac pacemaker in a patient fails to function normally. The doctors find that an artificial pacemaker is to be grafted in him. It is likely that it will be grafted at the site of

(a) Atrioventricular bundle

(b) Purkinje system

(c) Sino-atrial node

(b) Atrioventricular node

Pg 284, 2nd para

195. Systemic heart refers to

(a) The two ventricles together in humans

(b) The heart that contracts under stimulation from the nervous system

(c) Left auricle and left ventricle in higher vertebrates

(d) Entire heart in lower vertebrates

Fig. 18.4

196. Bundle of His is a network of

(a) Nerve fibres found throughout the heart

(b) Muscle fibres distributed throughout the heart walls

(c) Muscle fibres found only in the ventricle wall

(d) Nerve fibres distributed in ventricles

Pg 284 - 2nd para

197. Impulse of heart beat originates from

(a) S.A node (b) A.V node

(c) Vagus nerve (d) cardiac nerve

Pg 284 - 2nd para

198. Which of the following statements is true for lymph?

(a) WBC and serum

(b) All components of blood except RBCs and some proteins

(c) RBCs, WBCs and plasma

(d) RBCs proteins and platelets

Fig.-18.2

199. What is correct for blood group 'O'?

(a) No antigens but both a and b antibodies are present

(b) A antigen and b antibody

(c) Antigen and antibody both absent.

(d) A and B antigens and a, b antibodies

Table 18.1

200. Pulmonary artery differs from pulmonary vein in having

(a) No endothelium (b) Valves

(c) Large lumen (d) Thick muscular walls

201. What is true about leucocytes?

(a) Their sudden fall in number is indication of blood cancer.

(b) These are produced in thymus.

(c) These are enucleated.

(d) These can squeeze out through the capillary walls.

202. Contraction of the ventricle in the heart begins by the command from
(a) Chordae tendineae
(b) S.A node
(c) Purkinje fibres
(d) A.V node

Pg 284 - 2nd para

203. In mammals, histamine is secreted by
(a) Histiocytes
(b) Lymphocytes
(c) Mast cells
(d) Fibroblasts

204. An adult human with average health has systolic and diastolic pressures as
(a) 70 mm Hg and 120 mm Hg
(b) 120 mmHg and 80 mmHg
(c) 50 mm Hg and 80 mm Hg
(d) 80 mm Hg and 80 mm Hg

Pg 287 - Fig.-18.6

205. Which of the following is not a granulocyte?
(a) Lymphocyte (b) Eosinophils
(c) Basophile (d) Neutrophils

206. The life span of human W.B.C is approximately
(a) Less than 10 days
(b) Between 20 to 30 days
(c) Between 2 to 3 months
(d) More than 4 months

207. Which of the following vertebrate organs receives only the oxygenated blood ?
(a) Gill (b) Lung
(c) Liver (d) Spleen

208. The lymph serves to
(a) Transport oxygen to the brain
(b) Transport carbon dioxide to the lungs
(c) Return the interstitial fluid to the blood
(d) Return the WBCs and RBCs to the lymph nodes

Fig. 18.2

209. Antigens are present
(a) Inside the nucleus
(b) on the cell surface
(c) Inside the cytoplasm
(d) on nuclear membrane

210. The correct route through which pulse-making impulse travels in the heart is
(a) AV node → bundle of His →SA node → Purkinje fibres → heart muscles
(b) AV node → SA node → Purkinje fibres → bundle of His —> heart muscles
(c) SA node → Purkinje fibres → bundles of His → AV node → heart muscles
(d) SA node → AV node → bundle of His → Purkinje fibres → heart muscles

Pg 284 - 2nd para

211. Blood cancer is known as
(a) Leukaemia
(b) Thrombosis
(c) Haemolysis
(d) Haemophilia

212. 'Dup' sound is produced during closure of
(a) Semilunar valves (b) Bicuspid valve
(c) Tricuspid valve (d) Both B and C

213. Closed circulatory system occurs in
(a) Cockroach (c) Tadpole/Fish
(c) Mosquito (d) Housefly

214. Pacemaker of heart is
(a) AVnode (b) Bundle of His
(c) SAnode (d) Purkinje fibres

Pg 284 - 2nd para

215. Cells formed in bone marrow include
(a) RBC (b) RBC and leucocytes
(c) Leucocytes (d) Lymphocytes

216. Blood capillaries are made of
(a) Endothelium, connective tissue and muscle fibre'
(b) Endothelium and muscle fibres
(c) Endothelium and connective tissue
(d) Endothelium only

217. Wall of blood capillary is formed of
(a) Haemocytes (b) Parietal cells
(c) Endothelial cells (d) Oxyntic cells

218. Blood group AB has
(a) No antigen
(b) No antibody
(c) Neither antigen nor antibody
(d) Both antigen and antibody

219. A vein possesses a large lumen because

(a) Tunica media and tunica externa form a single! coat

(b) Tunica interna and tunica media form a single1 coat

(c) Tunica interna, tunica media and tunica external are thin

(d) Tunica media is a thin coat

Fig. 18.4

220. Splenic artery arises from

(a) Anterior mesenteric artery

(b) Coeliac artery

(c) Posterior mesenteric artery

(d) Intestinal artery

221. Which one engulfs pathogens rapidly?

(a) Acidophils (b) Monocytes

(c) Basophils (d) Neutrophils

222. Tricuspid valve is found in between

(a) Sinus venosus and right auricle

(b) Right auricle and right ventricle

(c) Left ventricle and left auricle

(d) Ventricle and aorta

Fig.-18.3.1 - 2nd para

223. A person with blood group A requires blood. The blood group which can be given is

(a) A and B (b) A and AB

(c) A and O (d) A, B, AB and O

224. Removal of calcium from freshly collected blood would '

(a) Cause delayed clotting

(b) Prevent clotting

(c) Cause immediate clotting

(d) Prevent destruction of haemoglobin

225. Arteries carry oxygenated blood except

(a) Pulmonary (b) Cardiac

(c) Hepatic (d) Systemic

226. RBC do not occur in

(a) Frog (b) Cow

(c) Camel (d) Cockroach

227. Breakdown product of haemoglobin is

(a) Bilirubin (b) Iron

(c) Biliverdin (d) Calcium

228. Foetus death may occur between a couple of

(a) Rh^+man and Rh^+woman

(b) Rh^+ man and Rh^- woman

(c) Rh^- man and Rh woman

(d) Rh^- man and Rh^+ woman

Pg 281 - 18.1.3.2

229. Which of the following cells does not exhibit phago-cytotic activity?

(a) Monocytes (b) Neutrophil

(c) Basophil (d) Macrophage

230. One of the common symptoms observed in people infected with Dengue fever is

(a) Significant decrease in RBC count.

(b) Significant decrease in WBC count.

(c) Significant decrease in platelets count.

(d) Significant increase in platelets count.

231. Which among the following is correct during each cardiac cycle?

(a) The volume of blood pumped out by the right and left ventricles is same.

(b) The volume of blood pumped out by the right and left ventricles is different.

(c) The volume of blood received by each atrium is different.

(d) The volume of blood received by the aorta and pulmonary artery is different.

232. Cardiac activity could be moderated by the autonomous neural system. Pick the correct answer from the following.

(a) The parasympathetic system stimulates the heart rate and stroke volume.

(b) The sympathetic system stimulates the heart rate and stroke volume.

(c) The parasympathetic system decreases the heart rate but increases the stroke volume.

(d) The sympathetic system decreases the heart rate but increases the stroke volume.

233. Mark the pair of substances among the following, which is essential for coagulation of blood.

(a) Heparin and calcium ions

(b) Calcium ions and platelet factors

(c) Oxalates and citrates

(d) Platelet factors and heparin

234. ECG depicts the depolarization and repolarization processes during the cardiac cycle. In the ECG of a normal healthy individual one of the following waves is not represented.
(a) Depolarization of atria
(b) Repolarization of atria
(c) Depolarization of ventricles
(d) Repolarization of ventricles

235. Which one of the following type of cells lacks nucleus in humans?
(a) RBC (b) Neutrophils
(c) Eosinophils (d) Monocytes

236. Which one of the following blood cells is involved in antibody production?
(a) B-Lymphocytes (b) T-Lymphocytes
(c) RBC (d) Neutrophils

237. The cardiac impulse is initiated and conducted further up to ventricle. The correct sequence of conduction of impulse is
(a) SA Node $\rightarrow$ AV Node $\rightarrow$ Purkinje fibres $\rightarrow$ AV Bundle
(b) SA Node $\rightarrow$ Purkinje fibres $\rightarrow$ AV Node $\rightarrow$ AV Bundle
(c) SA Node $\rightarrow$ AV Node $\rightarrow$ AV Bundle $\rightarrow$ Purkinje fibres
(d) SA Node $\rightarrow$ Purkinje fibres $\rightarrow$ AV Bundle $\rightarrow$ AV Node

238. The Agranulocytes responsible for immune response of the body are
(a) Basophils (b) Neutrophils
(c) Eosinophils (d) Lymphocytes

239. The second heart sound (dub) is associated with the closure of
(a) Tricuspid valve
(b) Semilunar valves
(c) Bicuspid valve
(d) Tricuspid and bicuspid valves

240. Which of the following correctly explains a phase/ event in cardiac cycle in a standard electrocardiogram?
(a) The QRS complex indicates atrial contraction.
(b) The QRS complex indicates ventricular contraction.
(c) The time between S and T represents atrial systole
(d) The P-wave indicates the beginning of ventricular contraction.

241. Which of the following statements is incorrect?
(a) A person of 'O' blood group has anti 'A' and anti 'B' antibodies in his blood plasma.
(b) A person of 'B' blood group can't donate blood to a person of 'A' blood group.
(c) Blood group is designated on the basis of the presence of antibodies in the blood plasma.
(d) A person of AB blood group is a universal recipient.

242. What would be the cardiac output of a person having 72 heart beats per minute and a stroke volume of 50 mL?
(a) 360 mL (b) 3600 mL
(c) 7200 mL (d) 5000 mL

243. Match the terms given under Column-I with their functions given under Column-II and select the answer from the options given below:

Column-I	**Column-II**
(A) Lymphatic System	(i) Carries oxygenated blood
(B) Pulmonary vein	(ii) Immune Response
(C) Thrombocytes	(iii) To drain back the tissue fluid to the circulatory system
(D) Lymphocytes	(iv) Coagulation of blood

(a) (A) - (ii), (B) - (i), (C) - (iii), (D) - (iv)
(b) (A) - (iii), (B) - (i), (C) - (iv), (D) - (ii)
(c) (A) - (iii), (B) - (i), (C) - (ii), (D) - (iv)
(d) (A) - (ii), (B) - (i), (C) - (iii), (D) - (iv)

244. Read the following statements and choose the correct option.
Statement 1: Atria receive blood from all parts of the body which subsequently flows to ventricles.
Statement 2: Action potential generated at the sinoatrial node passes from atria to ventricles.
(a) Action mentioned in Statement 1 is dependent on action mentioned in Statement 2.
(b) Action mentioned in Statement 2 is dependent on action mentioned in Statement 1
(c) Action mentioned in Statements 1 and 2 are independent of each other.
(d) Action mentioned in Statements 1 and 2 are synchronous.

EXCRETORY PRODUCTS AND THEIR ELIMINATION

1. Select the incorrect statement from the following.

(a) Animals accumulate ammonia, urea, uric acid, CO, and water by metabolic activities.

(b) Animals accumulate substances, like ions (Na^+, K^+, CI^-), urea, ammonia, uric acid, CO_2 and water. These substances are removed totally or partially.

(c) Ammonia produced by metabolism is covered into urea in the liver of mammals.

(d) Kidneys play a significant role in the removal of ammonia directly.

Pg 290, Para 1

2. Select the ammonotelic organism from the following.

(a) Many bony fishes

(b) Aquatic amphibians

(c) Aquatic insects

(d) All of these

Pg 290, Para 2

3. Select the correct order of toxicity of the following chemicals.

A. Ammonia B. Urea

C. Uric acid

(a) A > B > C (b) B > A > C

(c) C > A > B (d) C > B > A

Pg 290, Para 1

4. Which of the following excretory product requires maximum water for its elimination?

(a) Ammonia (b) Urea

(c) Uric acid (d) Creatinine

Pg 290, Para 1

5. Select the incorrect statement from the following.

(a) Ammonia is readily soluble in water.

(b) Ammonia is generally excreted by the process of diffusion.

(c) Ammonia is excreted as ammonium ion through gill surface in fishes.

(d) Ammonia is major, whereas urea and uric acid are minor form of nitrogenous waste excreted by animals.

Pg 290, Para 2

6. Which of the following is ureotelic?

(a) Mammals

(b) Most of the terrestrial amphibians.

(c) Marine fishes

(d) All of these

Pg 290, Para 2

7. Ammonia produced by metabolism is converted into A in the liver of mammals and released into B which is filtered and C out by kidney.

(a) A - Uric acid, B - Blood, C - Excreted

(b) A - Urea, B - Blood, C - Excreted

(c) A - Amino acid, B - Blood, C - Excreted

(d) A - Sugar, B - Blood, C - Excreted

Pg 290, Para 2

8. Which of the following organisms are uricotelic?

(A) Reptiles (B) Birds

(C) Insects (D)Land snails

(a) A, Band C only (b) B and C only

(c) A and D only (d) All of these

Pg 290, Para 2

9. With respect to the mode of excretion, bony fish falls into which of the following category?

(a) Ureotelic (b) Uricotelic

(c) Ammonotelic (d) Osmoconformers

Pg 290, Para 2

10. Which of the following sets of animals produce the same substances as their chief excretory product?

(a) Fish, pigeon and frog.

(b) Camel, housefly and snake.

(c) Frog, monkey and dog.

(d) Amoeba, ant and antelope.

Pg 290, Para 2

11. Which of the following sets of animals are uricotelic?

(a) Fish, snake, fowl and man.

(b) Fish, frog, lizard and fowl.

(c) Crow, snake, cockroach and lizard.

(d) Camel, dog, monkey and man.

Pg 290, Para 2

12. Excretion of nitrogenous waste products mainly as uric acid by birds is helpful in
(a) Conserving body heat.
(b) Conserving water
(c) Eliminating excess water.
(d) Eliminating excess body heat.

Pg 290, Para 2

13. Uric acid is excreted by
(a) Pigeon (b) Frog
(c) Rabbit (d) Man

Pg 290, Para 2

14. The least toxic nitrogenous waste is
(a) Ammonia (b) Ammonia and Urea
(c) Urea (d) Uric acid

Pg 290, Para 1

15. Select the correct statement from the following.
(A) In many invertebrates, the excretory structures are in complex tubular forms.
(B) Vertebrates have simple tubular organ as excreconcerned tory structure like kidney.
(C) Protonephridia is primarily with excretion.
(D) Protonephridia are excretory structures in rotifers, some annelids and cephalochordates (amphioxus).
(a) A (b)B
(c) C (d)D

Pg 291, Para 1

16. The excretory and osmoregulatory structure in cockroach is
(a) Flame cells (b) Green glands
(c) Nephridia (d) Malpighian tubules

Pg 291, Para 1

17. Malpighian tubules are the excretory organs in
(a) Platyhelminthes (b) Cockroach
(c) Pila (d) Ascaris.

Pg 291, Para 1

18. The excretory organs in prawns are
(a) Malpighian tubules
(b) Nephridia
(c) Kidneys
(d) Green glands or antefifial gland

Pg 291, Para 1

19. In humans, the excretory system coexists with
(a) Pair of kidneys
(b) Pair of ureters
(c) A urinary bladder and a urethra.
(d) All of these

Pg 291, Para 2

20. Kidneys in human are situated between .
(a) T_{12} - L_3 (b) T_{11} - L2
(c) T_{12} - L_1 (d) T_{12} - L_5

Pg 291, Para 2

21. The correct dimensions of human kidney are

	Length	Width	Thickness	Weight
(a)	10-12 cm	5-7 cm	2-3 cm	120-170 gm
(b)	10-12 cm	2-3 cm	5-7 cm	120-140 gm
(c)	12-14 cm	5-7 cm	2-3 cm	120-140 gm
(d)	12-14 cm	2-3 cm	2-3 cm	120-170 gm

Pg 291, Para 2

22. Which of the following is correct for hilum of kidney?
(a) It is present in the convex outer surface.
(b) It is present in the inner convex surface.
(c) It is a notch through which ureter, nerve and blood vessel enters.
(d) It is the place where calyces open.

Pg 291, Para 2

23. Which of the following statement is incorrect about human kidney?
(a) Kidney is covered by tough capsule.
(b) Kidney is divided into cortex and medulla on the outer side.
(c) The cortex extended in between the medullary pyramid are renal column of Bertin.
(d) Kidney is situated close to the dorsal inner wall of abdominal cavity.

Pg 291, Para 2

24. The extension of cortex in medulla is known as
(a) Columnae carneae
(b) Columns of Bertin
(c) Renal columns
(d) Both (b) and (c)

Pg 292, Top 2nd line

25. Each nephron consists of
(a) Glomerulus (b) Renal tubules
(c) Both (a) and (b) (d) Calyces

Pg 292, Para 2

26. Glomerulus along with Bowman's capsule is called
(a) Renal corpuscle
(b) Malpighian tubule
(c) Malpighian body
(d) Both (a) and (c)

Pg 292, Para 2

27. A part of nephron situated in cortex completely is
A. Malpighian corpuscle
B. PCT
C. DCT
D. Loop of Henle
E. Collecting duct
(a) A, B and C only
(b) B and C only
(c) A, B, C and D only
(d) D and E only

Pg 293, Para 2

28. Select the incorrect statement from the following.
(a) The DCTs of many nephrons opens into a straight tube called collecting duct.
(b) In cortical nephrons (majority), the loop of Henle is too short and extended only very little in medulla.
(c) In juxtamedullary nephrons (minority), the loop of Henle is very long and runs deeply into medulla.
(d) Vasa recta is not a part of peritubular network.

Pg 293, Para 1

29. A Malpighian corpuscle is
(a) Another name for nephron.
(b) An excretory structure of insects.
(c) Combined name for glomerulus and Bowman's capsule.
(d) None of the above

Pg 292, Para 2

30. Blood vessel leading to glomerulus is called
(a) Renal artery (b) Renal vein
(c) Efferent arteriole (d) Afferent arteriole

Pg 292, Para 1

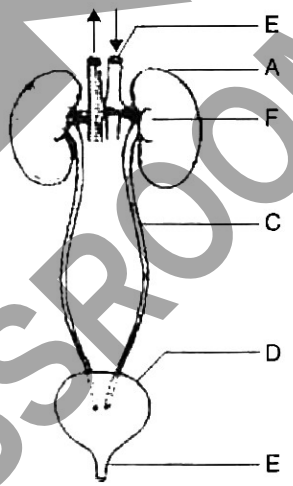
31. In mammalian kidneys, Bowman's capsules or Malpighian corpuscles occur in
(a) Cortex (b) Medulla
(c) Pelvis (d) All of these

Pg 293, Para 2

32. Which of the following is not a part of renal tubule?
(a) PCT
(b) Bowman's capsule
(c) DCT
(d) Collecting duct

Pg 292, Para 1

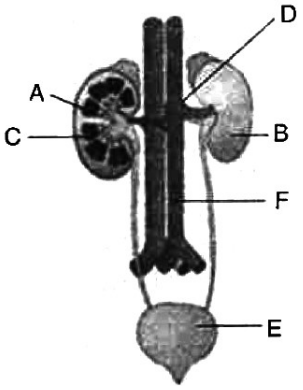
33. In the diagram of excretory system of human beings given below, different parts have been indicated by alphabets. Choose the answer in which these alphabets have been correctly matched with the parts which they represent.



(a) A: Kidney, B: Abdominal aorta, C: Ureters, D: Urinary bladder, E: Urethra, F: Renal pelvis.
(b) A: Kidney, B: Abdominal aorta, C: Urethra, D: Urinary bladder, E: Ureters, F: Renal pelvis.
(c) A: Kidney, B: Renal pelvis, C: Urethra, D: Urinary bladder, E: Ureters, F: Abdominal aorta.
(d) A: Kidney, B: Abdominal aorta, C: Urethra, D: Urinary bladder, E: Renal pelvis, F: Ureters.

Pg 294, Fig. 19.1

34. Observe the following figure.



Identify A to E in the given structure.

(a) A: Renal artery, B: Urinary bladder, C: Inferior vena, D: Kidney, E: Medulla.

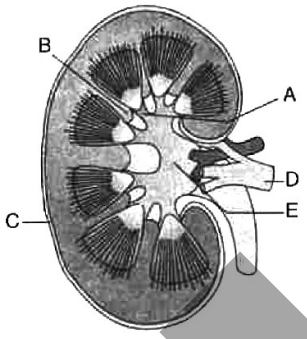
(b) A: Inferior vena cava, B; Kidney, C: Medulla, D: Renal artery, E: Urinary bladder.

(c) A: Urinary bladder, B: Medulla, C: Kidney, D: Inferior vena cava, E: Renal artery.

(d) A: Kidney, B: Renal artery, C: Inferior vena cava, D: Urinary bladder, E: Medulla.

Pg 294, Fig. 19.1

35. Observe the following figure.



Identify A to D in the given structure.

(a) A: Renal column, B: Renal capsule, C: Calyx, D: Renal pelvis.

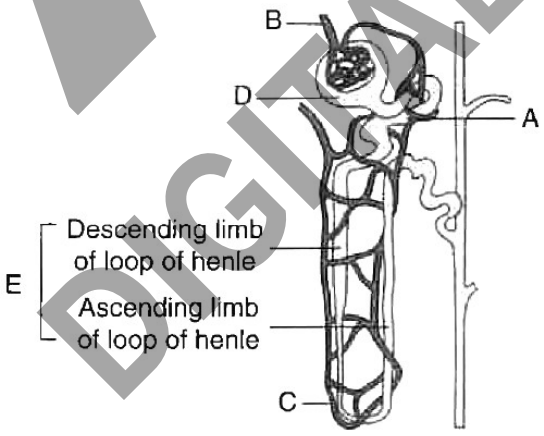
(b) A: Renal capsule, B: Renal pelvis, C: Renal vein, D: Calyx.

(c) A: Calyx, B: Renal column C: Renal capsule, D: Renal vein.

(d) A: Renal vein, B: Calyx, C: Renal column, D: Renal capsule.

Pg 292, Fig. 19.2

36. Match the following.



(a) A: Proximal convoluted tubule, B: Afferent arteriole, C: Vasa recta, D: Bowman's capsule, E: Henle's loop.

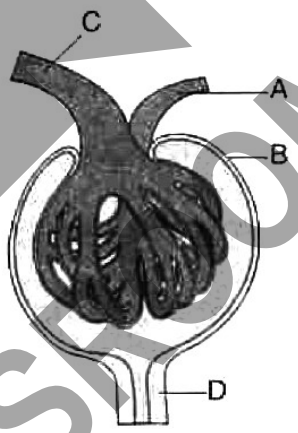
(b) A: Henle's loop, B: Vasa recta, C: Proximal convoluted tubule, D: Bowman's capsule, E: Afferent arteriole.

(c) A: Bowman's capsule, B: Henle's loop, C: Proximal convoluted tubule, D: Vasa recta, E: Afferent arteriole.

(d) A: Vasa recta, B: Proximal convoluted tubu]e C: Bowman's capsule, D: Afferent arteriole' E: Henle's loop.

Pg 292, Fig. 19.3

37. The following diagram represents the Malpighiatl body. Identify the parts from A to D in the giveil structure.



(a) A: Efferent arteriole, B: Afferent arteriole, C: Bowman's capsule, D: DCT.

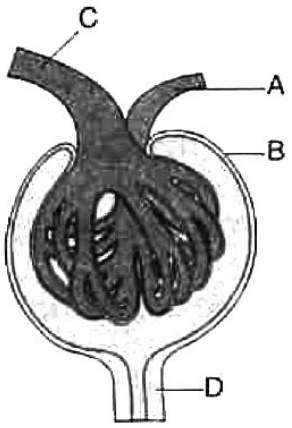
(b) A: Afferent arteriole, B: Efferent arteriole, C: Renal corpuscle, D: Proximal convoluted tubule.

(c) A: Efferent arteriole, B: Bowman's capsule, C: Afferent arteriole, D: PCT

(d) A: Afferent arteriole, B: Efferent arteriole, C: Bowman's capsule, D: DCT.

Pg 293, Fig. 19.4

38. Glomerulus is formed by the branching of

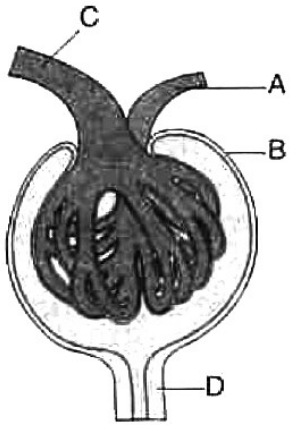


(a) A (b) B

(c) C (d) D

Pg 292, Para 2

39. Which of the following diagram is lined with podocytes?



(a) A (b) B
(c) C (d) D

Pg 293, Para 5

40. Filtration of blood occurs in
(a) Loop of Henle
(b) Bowman's capsule
(c) Lungs
(d) Renal papillae

Pg 293, Para 5

41. The glomerular filtrate, i.e., the liquid collected in the cavity of Bowman's capsule is
(a) Blood minus proteins
(b) Blood minus proteins and corpuscles.
(c) Water
(d) Urine

Pg 293, Para 5

42. Glomerular filtrate will not normally contain which of the following chemical?
(a) Albumin (b) Glucose
(c) NaCl (d) Creatinine

Pg 293, Para 5

43. Glomerular filtration rate would be decreased by
(a) Constriction of the efferent arteriole.
(b) An increase in afferent arteriolar pressure.
(c) Compression of the renal capsule.
(d) An increase in renal blood flow.

Pg 293, Para 5

44. A minute vessel running parallel to the Henle's loop forming 'U' shaped vasa recta is a part of
(a) Peritubular network
(b) Afferent arteriole
(c) Efferent arteriole
(d) Bowman's capsule

Pg 293, Para 3

45. Urine formation mainly involves the process of
(a) Ultrafiltration
(b) Selective reabsorption
(c) Secretion
(d) All of these

Pg 293, Para 5

46. How much amount of blood is filtered out by kidney's per minute?
(a) 500 ml (b) 1100-1200 ml
(c) 1500 ml (d) 125 ml

Pg 293, Para 5

47. How many layers do filtration membrane consist of ?
(a) 1 (b)2
(c) 3 (d) 4

Pg 293, Para 5

48. The filtration membrane consists of
(a) Endothelium of glomerular blood vessels.
(b) Epithelium of Bowman's capsule.
(c) Basement membrane between the above two layers.
(d) All of these

Pg 293, Para 5

49. Which of the following is incorrect about ultrafiltration?
(a) Podocytes are arranged in intricate manner so as to leave minute space called filtration slits and slit pore, where filtration occurs finely through these pores.
(b) Filtration is so fine that almost all constituent of blood except protein pass onto the lumen of Bowman's capsule.
(c) Filtrated fluid is isotonic to blood plasma.
(d) JGA controls the filtration rate of ultrafiltration.

Pg 293, Para 5

50. The values of GFR in a healthy individual is
(a) 125ml/min (b) 150 ml/min
(c) 100 ml/min (d) 200 ml/min

Pg 294, Para 1

51. The amount of the filtrate formed by the kidneys are
(a) 125 ml/min (b) 7.5 litre/hr
(c) 180 litre/day (d) All of these

Pg 294, Para 1

52. Select the total number of correct matching.
(1) JGA → Juxtaglomerular apparatus
(2) GFR → Glomerular filtration rate
(3) PCT → Proximal conducting tube
(4) DCT → Distal convoluted tubule
(5) CT → Conducting duct
(6) ADH → Antidiuretic hormone
(a) 1 (b) 2
(c) 4 (d) 5

Pg 293

53. JGA is formed by
(a) Part of DCT
(b) Part of afferent arteriole
(c) Both (a) and (b)
(d) None of these

Pg 293, Para 2

54. Following are the points of mechanism of JGA, arrange them accordingly.
(A) Activation of JG cells.
(B) Activated JG cells release renin.
(C) Fall in GFR.
(D) Increase of glomerular blood flow.
(E) GFR back to normal.
(a) E, A, D, C, B (b) C,A,B,D,E
(c) A, B, C,D,E (d) C, A, D, B, E

Pg 293, Para 2

55. How much per cent of the filtrate is nearly reabsorbed by the renal tubules?
(a) 70-80% (b) 85%
(c) 99% (d) 90%

Pg 294, Para 3

56. Choose the correct statement about absorption in renal tubules from the following.
(a) Glucose, amino acids and Na+ reabsorbed actively.
(b) Nitrogenous wastes are absorbed by passive transport.
(c) 70 - 80% of electrolyte and water are absorbed in PCT.
(d) All the above

Pg 294, Para 3

57. Tubular secretion helps in
(a) Ionic balance of body fluid.
(b) Acid base balance of body fluid.
(c) Both (a) and (b)
(d) None of these

Pg 294, Para 4

58. Which of the following is an incorrect statement about filtration?
(a) Selective process
(b) Non-selective process
(c) Performed by glomerulus.
(d) It occurs through the usage of capillary (glomeru-lus) blood pressure.

Pg 294, Para 5

59. Which of the following statement is incorrect about PCT?
(a) Lined with simple cuboidal brush border epithelium.
(b) All essential nutrient and 70 - 80% electrolyte and water are reabsorbed here.
(c) It helps in PH maintenance of body fluid by selective H+ ion and by absorption of HCO3.
(d) It does not help in the maintenance of ionic I balance of body fluid.

Pg 294, Para 5

60. Which of the following part has minimum reabsorption?
(a) PCT (b) HL
(c) DCT (d) Collecting duct

Pg 294, Para 6

61. Select the total number of correct statements regarding Henle's loop.
(1) Descending limb is permeable to water.
(2) Descending limb is almost impermeable to electrolyte.
(3) Ascending limb is impermeable to water.
(4) It allows active transport of electrolyte.
(5) At the tip of Henle's loop, the concentration of 1 filtrate is 1200 m osmol/1.
(6) It helps in the maintenance of high osmolarity in medullary interstitium.
(a) 6 (b) 3
(c) 4 (d) 5

Pg 294, Para 6

62. Which of the following segment helps in pH maintenance of body fluid?
(a) PCT (b) DCT
(c) Collecting duct (d) All of these

Pg 294, Para 5

63. DCT helps in

(A) Conditional reabsorption of Na+ and water.

(B) HCO_3 absorption

(C) pH maintenance

(D) Selective secretion of H^+ and K^+.

(a) A, C and D only

(b) B, C and D only

(c) A, B, C,D

(d) C and D only

Pg 295, Para 1

64. Which of the following segment allows the passage of small amount of urea into modularly interstitium to keep up the osmolarity?

(a) PCT (b) DCT

(c) HL (d) Collecting duct

Pg 295, Para 1

65. At which place, for the first time, we use the term 'urine' for filtrate?

(a) PCT

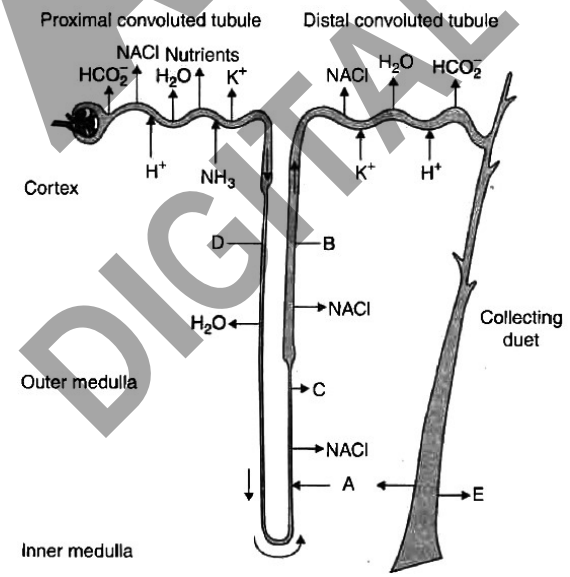
(b) DCT

(c) HL

(d) Collecting duct (end)

Pg 295, Para 1

66. The various parts in the following diagram absorbs different nutrients.



Identify A, B and D in the given diagram.

(a) A: Urea, B: Thick segment of ascending limb, D: Descending limb of loop of Henle.

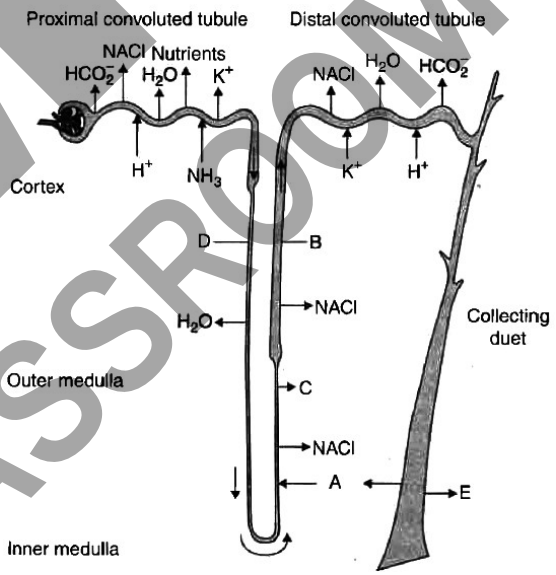
(b) A: Descending limb of loop of Henle, B: Thick segment of ascending limb, D: Urea.

(c) A: Thick segment of ascending limb, B: Descending limb of loop of Henle, D: Urea.

(d) A: Thick segment of ascending limb, B: Thick segment of ascending limb, D: Urea.

Pg 295, Fig. 19.5, Para 1

67. In the below diagram, identify the end excretory product which remains in the body to maintain concentration of the medullary interstitium?



(a) F (b) G

(c) A (d) E

Pg 295, Fig. 19.5, Para 1

68. Which of the following will be completely reabsorbed from glomerular filtrate under normal conditions in the nephrons?

(a) Urea (b) Salts

(c) Uric acid (d) Glucose

Pg 294, Para 5

69. The total filtrate formed in 24 hours in human kidney is

(a) 1.8 litres (b) 8.0 litres

(c) 18 litres (d) 180 litres

Pg 294, Para 1

70. Counter-current mechanism is present in which of the following?

(a) HL (b) Vasa recta

(c) Both (a) and (b) (d) DCT

Pg 295, Para 2

71. Which of the following is incorrect about counter-current mechanism?
(a) Flow of filtrate in two limbs of vasa recta is in opposite direction.
(b) Flow of blood in two limbs of vasa recta is also in opposite direction.
(c) NaCl is transported by ascending limb of HL which is exchanged with the descending limb of vasa recta.
(d) NaCl is returned to interstitium by the ascending portion of vasa recta.
Pg 295, Para 2

72. Counter-current mechanism maintains concentration gradient in the medullary interstitium. It helps in
(a) Easy passage of water from PCT.
(b) Easy passage of water from DCT.
(c) Easy passage of water from HL.
(d) Easy passage of water from collecting duct.
Pg 297, Para 1

73. Which of the following is most likely to cause an increase in the glomerular filtration rates?
(a) Blockage of ureter.
(b) Dilation of the afferent arterioles.
(c) Release of renin from the juxtaglomerular apparatus.
(d) Volume depletion
Pg 294, Para 2

74. Which of the following is mainly reabsorbed from Henle's loops?
(a) Potassium (b) Glucose
(c) Water and NaCl (d) Urea and NaCl
Pg 294, Para 6

75. The part of the nephron that helps in active reabsorption of sodium is
(a) Bowman's capsule
(b) Distal convoluted tubule
(c) Ascending limb of Henle's loop
(d) Proximal convoluted tubules
Pg 294, Para 7

76. Which of the following substances is actively secreted into glomerular filtrate of the kidney tubule?
(a) Amino acids (b) Chloride ions
(c) Na^+ (d) K^+
Pg 294

77. The effect of antidiuretic hormone (ADH) on the kidney is to increase the
(a) Excretion of water.
(b) Excretion of Na^+.
(c) Permeability of the distal nephron to water.
(d) Glomerular filtration rate
Pg 297, Para 2

78. In the deficiency of ADH, the rate of micturition
(a) Decreases
(b) Increases
(c) Remains the same
(d) None of these
Pg 294, Para 3

79. The functioning of kidney is regulated by
(a) Hypothalamus (b) JGA
(c) Heart (d) All of these
Pg 297, Para 2

80. ADH causes
(a) Increased water absorption from DCT and CT.
(b) Increased GFR by increasing blood pressure.
(d) Increased reabsorption of electrolyte from distal tubules.
(d) All the above
Pg 297, Para 2

81. Arrange the following steps in sequential order.
(1) Excessive loss of fluid.
(2) Stimulation of osmoreceptor.
(3) Stimulation of hypothalamus.
(4) Release of ADH or vasopressin.
(5) ADH facilitates water reabsorption from distal tubules.
(6) Increase in body fluid switch off osmoreceptor and suppress the release of ADH.
(a) 1,2,3,4,5,6 (b) 1,3,2,4,5,6
(c) 6, 1,2,3,4,5 (d) 2,3,4, 1,5,6
Pg 297, Para 3

82. The stimulus for activation of JG cells to release rennin is/are
(a) Decreased glomerular blood flow
(b) Decreased glomerular blood pressure
(c) Decreased GFR
(d) All of these
Pg 297, Para 3

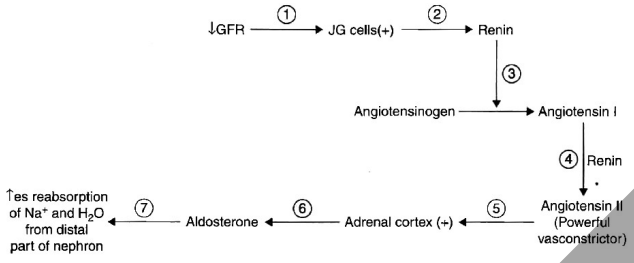
83. RAAS involve

(a) JGA apparatus (b) Angiotensinogen

(c) Adrenal cortex (d) All of these

Pg 297, Para 4

84. Select the incorrect option from the following.



(a) 2,3 (b) 1,3

(c) 4 (d) 5,6

Pg 297, Para 4

85. Increase in blood pressure is caused by

(a) Increased ADH secretion

(b) Increased aldosterone secretion

(c) Increased angiotensinogen II

(d) All of these

Pg 297, Para 5

86. Which of the following is true about ANF?

(a) The full form is autonomic nervous factor.

(b) Antagonistic to renin-angiotensin mechanism.

(c) It causes vasoconstriction.

(d) All options are true.

Pg 297, Para 5

87. Find the correct steps of micturition (arrange in order).

(A) Urine filled in urinary bladder.

(B) Stretch-receptor activation.

(C) Wall of bladder send signals to CNS.

(D) Motor message from CNS to urinary bladder and urethral sphincter.

(E) Bladder contracts and sphincter dilates leads to micturition.

(a) $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E$

(b) $C \rightarrow B \rightarrow A \rightarrow D \rightarrow E$

(c) $B \rightarrow A \rightarrow C \rightarrow D \rightarrow E$

(d) $A \rightarrow B \rightarrow C \rightarrow E \rightarrow D$

Pg 297, Para 6

88. The neural mechanism of micturition is called

(a) Micturition reflex

(b) Simple reflex

(c) Conditioned reflex

(d) All of these

Pg 298, Para 1

89. An adult human excretes how much urine per day?

(a) 1-1.5 litre (b) 1.5-2 litres

(c) 5-6 litres (d) 3 litres

Pg 298, Para 1

90. In an average, of urea is excreted out per day.

(a) 20 - 25 gm (b) 25 - 30 gm

(c) 25 - 30 mg (d) 40 - 45 gm

Pg 298, Para 1

91. Analysis of urine helps in the clinical diagnosis of

(a) Metabolic disorders

(b) Malfunctioning of kidney

(c) Diabetes mellitus

(d) All of these

Pg 298, Para 1

92. Select the correct matching.

	Colour	pH	Odour
(a)	Light yellow	7.0	Characteristic
(b)	Light yellow	6.0	Characteristic
(c)	Light yellow	6.5	Pungent
(d)	Light yellow	6.0	Almond

Pg 298, Para 1

93. The presence of glucose and ketone bodies in urine is called

(a) Glycosuria and ketonuria.

(b) Glycogenic and ketonuria.

(c) Glycosuria and ketonemia.

(d) Gluconeogenesis and ketonemia.

Pg 298, Para 1

94. Glycosuria and ketonuria is indicative of

(a) Starvation

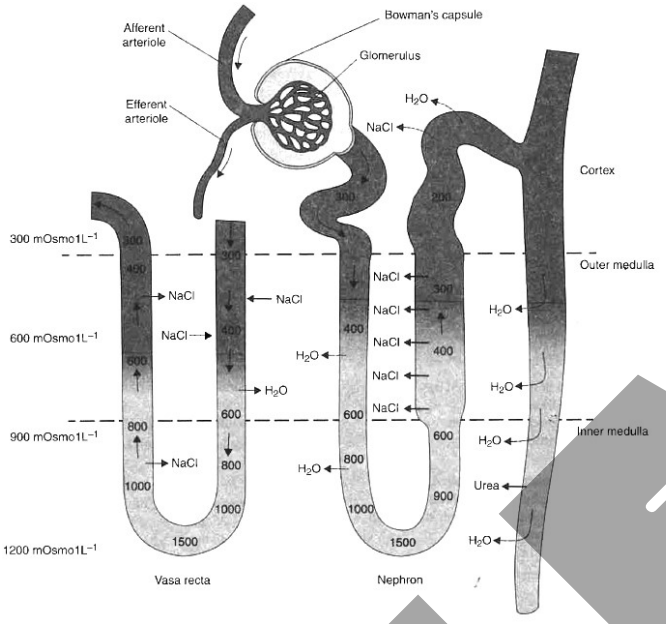
(b) Diabetes mellitus

(c) Diabetes insipidus

(d) All of these

Pg 298, Para 1

95. The following nephron produces how much concentrated urine?



(a) 4 times (b) 5 times
(c) 3 times (d) 2 times

Pg 296, Fig. 19.6

96. Sweat contains
(a) Watery fluid with NaCl
(b) Urea
(c) Lactic acid
(d) All of these

Pg 298, Para 1

97. The primary function of sweat is
(a) Removal of excess water
(b) Removal of urea
(c) Cooling of body surface
(d) All of these

Pg 298, Para 4

98. Nitrogenous waste is eliminated through
a) Kidney (b) Saliva
(c) Sweat gland (d)AH of these

Pg 298, Para 4

99. Sterols, hydrocarbons and waxes are eliminated through
(a) Liver
(b) Lungs
(c) Sebaceous gland
(d) Sweat gland

Pg 298, Para 4

100. Select the incorrect statement from the following.
(a) Liver is the second largest gland in our body.
(b) Sebum provides protective oily covering for skin.
(c) Bile contains substances, like bilirubin, biliverdin, cholesterol, degraded steroid hormones, vitamins and drugs that passes out with digestive waste.
(d) Other than kidneys, lungs, liver and skin also helps in the elimination of excretory waste.

Pg 298, Para 3

101. Our lung removes how much CO_2 per minute from the body?
(a) 10 ml (b) 200 ml
(c) 400 ml (d) 2000 ml

Pg 298, Para 3

102. The inflammation of glomeruli of kidney is
(a) Renal failure
(b) Renal calculi
(c) Glomerulonephritis
(d) Cystitis

Pg 299

103. Stone and insoluble mass of crystallized salts formed within the kidney is generally made up of
(a) Calcium carbonate
(b) Calcium oxalate
(c) Silica
(d) Any of these

Pg 299

104. Which of the following is the ultimate method for correction of acute renal failure?
(a) Haemodialysis
(b) Renal transplantation
(c) Blood transfusion
(d) Angioplasty

Pg 298, Para 5

105. The following are steps of dialysis.
A. Blood is passed into vein.
B. Blood is mixed with heparin.
C. Blood is mixed with anti-heparin.
D. Blood is drained from convenient artery.
E. Blood is passed through a coiled and porous cellophane tube bathing in dialysis fluid.
F. Removal of nitrogenous wastes from blood.

The correct sequence of steps is

(a) $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow F$

(b) $D \rightarrow B \rightarrow E \rightarrow F \rightarrow C \rightarrow A$

(c) $F \rightarrow C \rightarrow E \rightarrow B \rightarrow A \rightarrow D$

(d) $D \rightarrow C \rightarrow E \rightarrow F \rightarrow B \rightarrow A$

Pg 298, Para 5

106. What will happen if the stretch receptors of the urinary bladder wall are totally removed?

(a) Micturition will continue

(b) Urine will continue to collect normally in the bladder

(c) There will be no Micturition

(d) Urine will not collect in the bladder

107. Uric acid is the chief nitrogenous component of the excretory products of

(a) earth worm (b) cockroach

(c) frog (d) man

108. Earthworms are

(a) Uricotelic when plenty of water is available

(b) Uricotelic under conditions of water

(c) Ammonotelic when plenty of water is available

(d) Ureotelic when plenty of water is available

109. In Ornithine cycle, which of the following wastes are removed from the blood?

(a) CO_2 and urea

(b) Ammonia and urea

(c) CO_2 and ammonia

(d) Urea and urine

110. The net pressure gradient that causes the blood to filter out of the glomeruli into the capsule is:

(a) 50 mm Hg (b) 75 mm Hg

(c) 20 mm Hg (d) 30 mm Hg

111. A person who is undergoing prolonged fasting, his urine will be found to contain abnormal quantities of

(a) Fats (b) Amino acids

(c) Glucose (d) Ketone bodies

112. A terrestrial animal must be able to

(a) Excrete large amounts of water in urine

(b) Conserve water

(c) Actively pump salts out through the skin

(d) Excrete large amounts of salts in urine

113. Uricotelism is found in

(a) Mammals and birds

(b) Fishes and fresh water protozoans

(c) Birds, reptiles and insects

(d) Frogs and toads

114. When a fresh-water protozoan, possessing a contractile vacuole, is placed in a glass containing marine water, the vacuole will

(a) Increase in number

(b) Disappear

(c) Increase in size

(d) Decrease in size

115. If Henle's loop were absent from mammalian nephron, which of the following is to be expected?

(a) The urine will be more dilute

(b) There will be no urine formation

(c) There will be hardly any change in the quality and quantity of urine formed

(d) The urine will be more concentrated

116. In hydra waste material of food, digestion and nitrogenous waste material are removed from

(a) Mouth and body wall

(b) Mouth and tentacles

(c) Mouth and nematocyst

(d) Body wall and tentacles

117. Which one of the following is a matching pair?

(a) Tears-excretion of salts

(b) Sweat-thermoregulation

(c) Saliva-tasting food

(d) Sebum-sex attraction

118. The enteronephric nephridia of earthworm are concerned with

(a) Osmoregulation

(b) Excretion of nitrogenous wastes

(c) Digestion

(d) Respiration

119. Formation of concentrated (hyper-osmotic) urine in vertebrates generally depends on

(a) Length of the proximal convoluted tubule

(b) Length of Henle's loop

(c) Area of Bowman's capsule epithelium

(d) Capillary network forming glomerulus

120. In the renal tubules, the permeability of the distal convoluted tubule and collecting duct to water is controlled by
(a) Vasopressin (b) Aldosterone
(c) Growth hormone (d) Renin

121. Solenocytes are the main excretory structures
(a) Platyhelminthes (b) Annelids
(c) Molluscs (d) Echinodermates

122. The basic functional unit of the human kidney is
(a) Nephron (b) Nephridia
(c) Pyramid (d) Henle's loop

123. In ureotelic animals, urea is formed by the
(a) Arginine cycle (b) Cori's cycle
(c) Ornithine cycle (d) EM pathway

124. In Ornithine cycle, which one pair of the following pairs of wastes are removed from the blood?
(a) CO_2 and urea
(b) CO_2 and ammonia
(c) Ammonia and urea
(d) Urea and sodium salts

125. A patient suffering from cholera is given saline drip because
(a) CI^- ions are important component of blood plasma
(b) Na^+ ions help to retain water in the body
(c) Na^+ ions are important in transport of substances across membrane
(d) Cl^- ions help in the formation of HCl in stomach for digestion

126. Uric acid is nitrogenous waste in
(a) Mammals and molluscs
(b) Birds and lizards
(c) Frog and cartilaginous fishes
(d) Insects and bony fishes

127. If kidney fails to reabsorb water, the effect on tissue would
(a) Remain unaffected
(b) Shrink and shrivel
(c) Absorb water from blood plasma
(d) Take more O_2 from blood

128. Part not belonging to uriniferous tubule is
(a) Glomerulus
(b) Henle's loop
(c) Distal convoluted tubule
(d) Collecting tubule

129. Glucose is taken back from glomerular filtrate through
(a) Active transport
(b) Passive transport
(c) Osmosis
(d) Diffusion

130. Nitrogenous waste products are eliminated mainly as
(a) Urea in tadpole and ammonia in adult frog
(b) Ammonia in tadpole and urea in adult frog
(c) Urea in both tadpole and adult frog
(d) Urea in tadpole and uric acid in adult frog

131. Under normal conditions, which one is completely reabsorbed in the renal tubule?
(a) Urea (b) Uric acid
(c) Salts (d) Glucose

132. Proximal and distal convoluted tubules are part of
(a) Seminiferous tubules
(b) Nephron
(c) Oviduct
(d) Vas deferens

133. Brush border is characteristic of
(a) Neck of nephron
(b) Collecting tube
(c) Proximal convoluted tubule
(d) All the above

134. Reabsorption of useful substances from glomerular filtrate occurs in
(a) Collecting tube
(b) Loop of Henle
(c) Proximal convoluted tubule
(d) Distal convoluted tubule

135. Presence of RBC in urine is
(a) Alkaptonuria
(b) Ureathiasis
(c) Hematuria
(d) Proteinuria

LOCOMOTION AND MOVEMENT

1. Which of the following is a simple form of movement?
(a) Streaming of protoplasm in amoeba.
(b) Ciliary movement in Paramecium.
(c) Flagella movement in Euglena.
(d) All of these

Pg 302 - 1st para

2. The movement results in a change of place or location is known as
(a) Contraction (b) Adduction
(c) Abduction (d) Locomotion

Pg 302 - 1st para

3. Select the correct matching.

Column I	Column II	Column III
A. Paramecium	1. Cilia	X. Movement of food through cytopharynx and locomotion.
B. Hydra	2. Tentacles	Y. Capturing of prey and locomotion.
C. Human	3. Limbs	Z. Changes in body posture and locomotion.

(a) A - 1 - X , B - 2 - Y , C - 3 - Z
(b) A - 1 - Z, B - 3 - X, C - 2 - Y
(c) A - 3 - Z, B - 1 - X, C - 2 - Y
(d) A - 2 - Y, B - 3 - X, C - 1 - Z

Pg 302 - 1st para

4. Select the incorrect statement from the following.
(a) Both plant and animal exhibits movement.
(b) All locomotion are movement but all movement are not locomotion.
(c) Methods of locomotion performed by animals vary with their habitats and the demand of the situation.
(d) None of the above

Pg 302 - 2ndt para

5. Locomotion is used for
(A) Search of food and shelter.
(B) Search for mate.
(C) Search for suitable breeding ground.
(D) Escaping from enemies or predators.
(a) All except B (b) All except C
(c) All except D (d) All of these

Pg 302 - 2nd para

6. Which of the following is the movement exhibited by the cell of a human body?
(a) Amoeboid (b) Ciliary
(c) Flagellar (d) All of these

Pg 302 - 3rd para

7. Which of the following cells exhibit amoeboid movement?
(a) Macrophages (b) Leucocytes
(c) RBC (d) Both (a) and (b)

Pg 303 - 1st para

8. Which of the following statement is correct about pseudopodia?
(a) Formed by streaming of protoplasm.
(b) Formed in amoeba and neutrophil.
(c) Both (a) and (b)
(d) None of these

Pg 303 - 1st para

9. Which of the following is involved in amoeboid movement? -
(a) Centriole (b) Cilia
(c) Flagella (d) Microfilament

Pg 303 - 1st para

10. The passage of ova through the fallopian tube is facilitated by
(a) Centriole (b) Cilia
(c) Flagella (d) Microfilament

Pg 303 - 2nd para

11. Movement of our tongue, jaw and our limbs occur due to the movement of
(a) Centriole (b) Cilia
(c) Flagella (d) Muscles

Pg 303 - 3rd para

12. Which of the following is involved in removing of dust particle from trachea?
(a) Centriole (b) Cilia
(c) Flagella (d) Microfilament

Pg 303 - 2nd para

13. Which of the following organs is lined with cilia?
(a) Fallopian tube (b) Trachea
(c) Intestine (d) Both (a) and (b)

Pg 303 - 2nd para

14. Locomotion requires a perfect coordinated activity of

(a) Muscular system (b) Skeletal system

(c) Neural system (d) All of these

Pg 303 - 3rd para

15. Muscle is derived from

(a) Mesoderm (b) Ectoderm

(c) Endoderm (d) All of these

Pg 303 - 4th para

16. Muscle forms % of adult human body:

(a) 30-40 (b) 40-50

(c) 50-60 (d) 60-70

Pg 303 - 4th para

17. Muscles are characterized by

(a) Excitability and contractility

(b) Extensibility

(c) Elasticity

(d) All of these

18. Muscles can be classified on which of the following criterion?

(a) Location

(b) Appearance

(c) Nature of regulation of their activities.

(d) All of these

19. How many types of muscles can be identified depending upon the location?

(a) 1 (b) 2

(c) 3 (d) 4

20. Biceps are characterized by

(a) Striped appearance

(b) Voluntary control

(c) Smooth appearance

(d) Both (a) and (b)

Pg 303 - 5th para

21. The only branched muscles found in our body is

(a) Skeletal muscle (b) Smooth muscle

(c) Cardiac muscle (d) All of these

Pg 304 - 1st para

22. Gametes through genital tract mainly transport due to the contraction of

(a) Skeletal muscles (b) Smooth muscles

(c) Cardiac muscles (d) All of these

Pg 303 - 6th para

23. Our digestive tract majorly contains

(a) Skeletal muscles

(b) Smooth muscles

(c) Cardiac muscles

(d) All of these

24. Which of the following is incorrect about skeletal muscles?

(a) Striped appearance under microscope and hence, it is called striated muscle.

(b) They are voluntary muscles.

(c) Primarily involved in locomotory actions and changes of body postures.

(d) They are involuntary muscles.

Pg 303 - 5th para

25. Which of the following is incorrect about visceral muscles?

(a) Non-striated muscle (Smooth muscle)

(b) Involuntary muscle

(c) Located in inner walls of hollow visceral organs of the body

(d) They are under involuntary control.

26. Smooth muscles help in

(a) Transportation of food through the digestive tract.

(b) Transfer of gametes through genital tract.

(c) Micturition by urinary bladder.

(d) All the above

27. Cardiac muscle is characterized by

(a) Striated appearance

(b) Involuntary control

(c) Branching pattern

(d) All of these

Pg 304 - 1st para

28. Which muscle is not under direct control of nervous system?

(a) Skeletal (Striated muscles)

(b) Smooth (Non-striated muscles)

(c) Cardiac muscles

(d) All of these

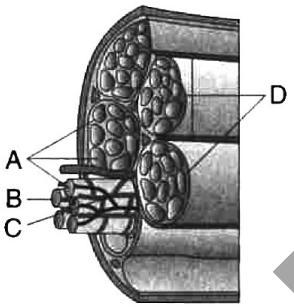
29. Cardiac muscles are found in

(a) Kidney (b) Heart

(c) Brain (d) Digestive tract

30. Muscle fibre is a
(a) Anatomical unit of muscle.
(b) Physiological unit of muscle.
(c) Biochemical unit of muscle.
(d) None of these

31. Identify A, B, C and D in the given figure.



(a) A: Sarcolemma, B: Blood capillary, C: Fascicle (muscle bundle), D: Muscle fibre (muscle cell).
(b) A: Blood capillary, B: Muscle fibre (muscle cell), C: Fascicle (muscle bundle), D: Sarcolemma.
(c) A: Sarcolemma, B: Muscle fibre (muscle cell), C: Fascicle (muscle bundle), D: Blood capillary.
(d) A: Muscle fibre (muscle cell), B: Sarcolemma, C: Blood capillary, D: Fascicle (muscle bundle).

Pg 304

32. Each organized skeletal muscle in our body is made up of a number of muscle bundles or fascicles held together by a common collagenous connective tissue layer called
(a) Tunicin (b) Fascia
(c) Pellicle (d) Capsule

Pg 304 - 2nd para

33. Our skeletal muscle fibre contains many nuclei in sarcoplasm and it is known as
(a) Coenocytic (b) Syngamy
(c) Syncytium (d) Synapse

Pg 304 - 3rd para

34. In skeletal muscle, myofilaments or myofibrils are arranged in which of the following manner?
(a) Parallel (b) Perpendicular
(c) Crossed (d) Any of these

35. Select the correct matching from the following.
(a) Plasma membrane of muscle fibre - Sarcolemma
(b) Cytoplasm of muscle fibre - Sarcoplasm
(c) Endoplasmic reticulum of muscle fibre - Sarcoplasmic reticulum
(d) All the above

36. Sarcoplasmic reticulum is the store house of which of the following ion?
(a) Ca^{2+} (b) Na^{+}
(c) K^{+} (d) Fe^{2+}

37. Sarcolemma is a membrane found over
(a) Nerve fibre
(b) Cardiac muscle
(c) Skeletal muscle fibre
(d) Heart

Pg 304 - 3rd para

38. The functional unit of the contractile system in the striped muscle is
(a) Z-band (b) A-band
(c) Myofibril (d) Sarcomere

Pg 305 - 1st para

39. The dark bands (A-bands) of a skeletal muscle are known as
(a) Isotropic bands
(b) Anisotropic bands
(c) Intercalated disc
(d) Cross bridges

Pg 304 - 3rd para

40. The light bands (I-bands) of a skeletal muscle are known as
(a) Isotropic bands
(b) Anisotropic bands
(c) Intercalated disc
(d) Cross bridges

41. The special contractile protein actin is found in
(a) Thick filaments of A-bands.
(b) Thin filaments of I-bands.
(c) Both thick and thin bands.
(d) Whole of myofibril.

Pg 304 - last para

42. Striped muscles have
(a) One nucleus (b) Many nuclei
(c) Two nuclei (d) No nuclei

43. Contractile fibrils of muscles are called

(a) Neurofibrils (b) Collagen fibres

(c) Myofibrils (d) Elastin

Pg 304 - last para

44. Myofibrils show alternate dark and light bands in

(a) Cardiac muscles

(b) Smooth muscles

(c) Skeletal muscles

(d) Both (a) and (c)

45. Select the correct statement from the following.

(a) A-band is made up of thick myosin filament.

(b) H-zone is present in the middle of A-band.

(c) Actin and myosin are polymerized protein with contractility.

(d) All the above

Pg 304 - last para

46. Match the columns.

Column I	Column II
(A) Inflammation of joints.	(1) H-zone
(B) Protein of thick filament.	(2) Myosin
(C) Protein of thin filament.	(3) Actin
(D) The central part of thick filament is not overlapped by thin filament.	(4) Arthritis

(a) A:1,B:2, C:3,D:4 (b) A:l, B:3, C:2, D:4

(c) A:4,B:1,C:2,D:2 (d) A:4, B:2, C:3, D:l

47. Which of the following statements about striated muscles are false?

1. Thick filaments in the 'A' band are also held together in the middle of this band by a thin fibrous membrane called 'M' line.
2. In the centre of each T band is an elastic fibre called 'Z' line which bisects it.
3. The thin filaments are firmly attached to the 'Z' line.
4. This central part of thick filament not overlapped by thin filaments is called the 'H' zone.

(a) All of these (b) Only 2

(c) 1 and 4 only (d) None of these

Pg 305 - 1st para

48. The centre of I band is characterized by which of the following line?

(a) H-line (b) M-line

(c) Z-line (d) H-zone

Pg 305 - 1st para

49. Which of the following statements about the molecular arrangement of actin in myofibrils is incorrect?

1. Each actin (thin) filament is made up of two 'F' (filamentous) actins helically wound to each other.
2. Each 'F' actin is a polymer of monomeric 'G' (globular) actins.
3. Two filaments of another protein, tropomyosin also run close to the 'F' actins throughout its length.
4. A complex protein called troponin is distributed at regular intervals on the tropomyosin.

(a) 1 and 2 only (b) 3 only

(c) Only 4 (d) None of these

Pg 306 - 1st para

50. Globular head of myosin contains binding site for

(a) Actin (b) ATP

(c) Both (a) and (b) (d) Ca^{2+}

Pg 306 - 2nd para

51. Which of the following masks the binding active site for myosin on the actin filament?

(a) H-line (b) Troponin

(c) Tropomyosin (d) M-line

Pg 306 - 1st para

52. Troponin is made up of

(a) Troponin I

(b) Troponin T

(c) Troponin C

(d) All of these

Pg 306 - 1st para

53. F-actin is a polymer of

(a) G-actin

(b) Troponin T

(c) Troponin I

(d) Troponin C

54. Select the total number of true statements from the following?

1. Each myosin (thick) filament is also a polymerized protein.
2. Many monomeric proteins called meromyosins constitute one thick filament.
3. Each meromyosin has two important parts, a globular head with a short arm and a tail, the former being called the heavy meromyosin (HMM) and the latter being called the light meromyosin (LMM).
4. The HMM component, i.e., the head and short arm projects outwards at regular distance and angle from each other from the surface of a polymerized myosin filament and it is known as cross arm.
5. The globular head is an active ATPase enzyme and has binding sites for ATP and active sites for actin.

(a) 1 (b) 2
(c) 4 (d) 5

Pg 306 - 2nd para

55. Binding of Ca^{2+} with ____ in the skeletal muscles which leads to exposure of the binding site for on the filament .

(a) Troponin, myosin, actin
(b) Troponin, actin, relaxin
(c) Actin, myosin, troponin
(d) Tropomyosin, myosin, actin

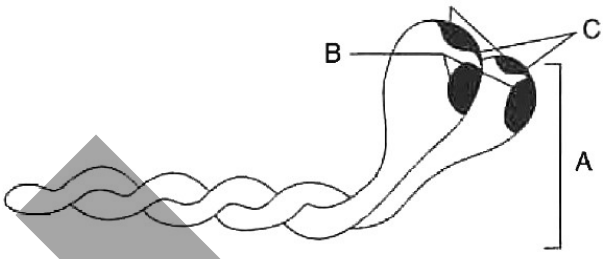
Pg 307 - 1st para

56. Following is the figure of actin (thin) filaments. Identify the parts A, B and C in the given diagram.

(a) A: Tropomyosin, B: Troponin, C: F-actin.
(b) A: Tropomyosin, B: Myosin, C: F-tropomyosin.
(c) A: Troponin, B: Tropomyosin, C: Myosin.
(d) A: Troponin, B: Tropomyosin, C: F-actin.

Pg 306

57. The following figure is related to myosin monomer (meromyosin). Identify the parts from A to C.



(a) A: Head, B: Cross arm, C: GTP binding sites.
(b) A; Cross arm, B : ATP binding sites, C: Head.
(c) A: Head, B : Cross arm, C: ATP binding sites.
(d) A: Cross arm, B : Head, C: ATP binding sites.

Pg 307 - 1st para

58. The mechanism of muscle contraction is best explained by

(a) All or no law
(b) Sliding filament theory
(c) Blackman's law
(d) All of these

Pg 306 - last para

59. ATP provides energy for muscle contraction by allowing for

(a) An action potential formation in the muscle cell.
(b) Cross-bridge detachment of myosin from actin.
(c) Cross-bridge attachment of myosin to actin.
(d) Release of Ca:+ from sarcoplasmic reticulum.

Pg 307 - 1st para

60. A motor unit is best described as

(a) All the nerve fibres and muscle fibres in a single muscle bundle.
(b) One muscle fibre and its single nerve fibre.
(c) A single motor neuron and all the muscle fibres that it innervates.
(d) As the neuron which carries the message from muscle to CNS.

61. Motor end plate is a

(a) Neuromuscular junction
(b) Plate of motor neuron.
(c) Dendron of motor neuron.
(d) Gradient of protein motive force.

62. During muscle contraction,

(a) Chemical energy is changed into electrical energy,

(b) Chemical energy is changed into mechanical energy.

(c) Chemical energy is changed into physical energy.

(d) Mechanical energy is changed into chemical energy.

Pg 307 - last para

63. Electron microscopic studies of the sarcomere have revealed that during muscle contraction,

(a) The width of A-band remains constant.

(b) The width of H-zone increases.

(c) The width of I-band increases.

(d) The diameter of the fibre increases.

64. According to the sliding filament theory,

(a) Actin (thin filament) moves over myosin (thick filament).

(b) Myosin moves over actin.

(c) Both myosin and actin moves on each other.

(d) None the above

65. Arrange the following statements in correct sequence to describe muscle contraction.

1. Signal sent by CNS through motor neuron.
2. Generation of action potential in the sarcolemma.
3. Release of Ca^{+2} from sarcoplasmic reticulum.
4. The neurotransmitter acetylcholine is released from motor end plate.
5. Sarcomere is shortened.

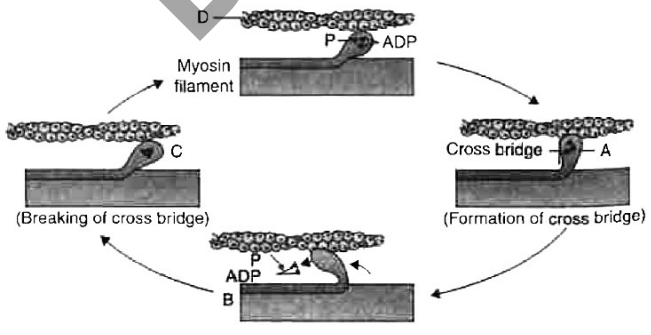
(a) $1 \rightarrow 2 \rightarrow 4 \rightarrow 3 \rightarrow 5$

(b) $1 \rightarrow 4 \rightarrow 2 \rightarrow 3 \rightarrow 5$

(c) $1 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 5$

(d) $5 \rightarrow 4 \rightarrow 3 \rightarrow 2 \rightarrow 1$

66. Go through the following diagram describing muscle contraction. Identify the parts from A to E.



(a) A: Sliding/Rotation, B: Actin filament, C: Myosin head, D: ATP.

(b) A: Myosin head, B: Sliding/Rotation, C: ATP, D: Actin filament.

(c) A: Sliding/Rotation, B: Myosin head, C: Actin filament, D: ATP.

(d) A: Actin filament, B: Sliding/Rotation, C: ATP, D: Myosin head.

Pg 307

67. Relaxation of muscle is due to

(a) Pumping of Ca+2 into sarcoplasmic cisternae.

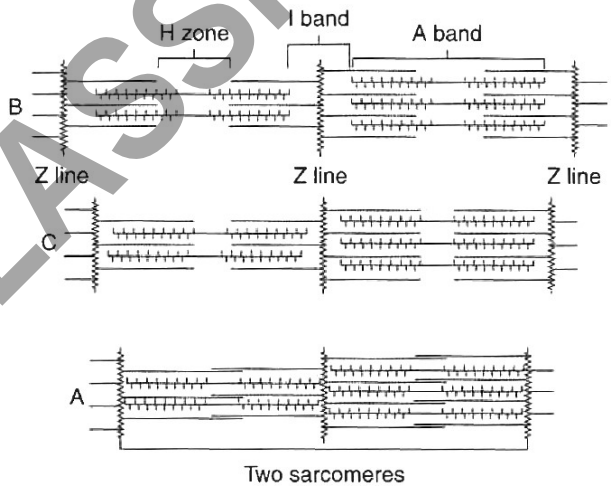
(b) Presence of ATP.

(c) Conformational change in troponin and masking of actin filaments.

(d) Both (a) and (c)

Pg 308 - 1st para

68. The following diagram shows three different conditions of sarcomeres. Identify these conditions.



(a) A: Contracting, B: Relaxed, C: Maximally contracted.

(b) A: Relaxed, B: Contracting, C: Maximally contracted.

(c) A: Maximally contracted, B: Relaxed C: Contracting.

(d) A: Relaxed B: Maximally contracted, C: Contracting.

Pg 308

69. Repeated activation of the muscles can lead to accumulation of ____ due to anaerobic breakdown of glycogen which causes fatigue

(a) Ethanol (b) Lactic acid

(c) Citric acid (d) Butyric acid

Pg 309 - 1st para

70. The protein which maintains the muscular storage of oxygen is

(a) Myoglobin (b) Actomyosin

(c) Myosin (d) Haemoglobin

Pg 308 - last para

71. Which of the following is not a correct difference between white and red muscles fibre?

White muscle fibre	Red muscle fibre
1. Less myoglobin	1. More myoglobin
2. Number of mitochondria is less.	2. Number of mitochondria is more.
3. Amount of sarcoplasmic reticulum is low.	3. Amount of sarcoplasmic reticulum is high.
4. Aerobic muscle	4. Anaerobic muscle

(a) 1 (b) 2

(c) 3 (d) 4

Pg 308 - last para

72. The skeletal system consists of

(a) Framework of bones

(b) Few cartilages

(c) Both (a) and (b)

(d) None of these

Pg 309 - 1st para

73. Cartilage has slightly pliable matrix due to

(a) Ca^{2+} (b) Mg^{2+}

(c) Chondroitin salts (d) Phosphorus

Pg 309 - 1st para

74. The skull is composed of

(a) Cranial bones (8) (b) Facial bones (14)

(c) Both (a) and (b) (d) None of these

Pg 309 - 2nd para

75. The hard and protective outer covering of brain is known as

(a) Cranium (b) Condyle

(c) Meninges (d) All of these

Pg 309 - 2nd para

76. The human body contains how many ear ossicles?

(a) 3 (b) 4

(c) 5 (d) 6

Pg 309 - 2nd para

77. Human skull is

(a) Monocondylic (b) Dicondylic

(c) Tricondylic (d) Acondylic

Pg 310 - 1st para

78. Vertebral column in human body is present

(a) Dorsally (b) Ventrally

(c) Laterally (d) All of these

Pg 310 - 2nd para

79. Which of the following is true abut vertebral column?

(a) Each vertebra in vertebral column has a central hollow cavity (neural canal) through which spinal cord pass.

(b) The first vertebra in vertebral column is atlas and it articulates with the occipital condyle.

(c) Vertebral column protects the spinal cord, supports the head and serves as a point of attachment for the ribs and musculature of the back.

(d) All the above

Pg 310 - 2nd para

80. The bone present on ventral midline of thorax is

(a) Vertebral column

(b) Ribs

(c) Scapula

(d) Sternum

Pg 310 - 2nd para

81. Which of the following is incorrect about ribs?

(a) Each rib is a thin and flat bone connected dorsally to the vertebral column and ventrally to the sternum.

(b) Ribs has two articulation surfaces on its dorsal end which are called bicephalic.

(c) Ventrally, ribs are connected to sternum by elastic cartilage.

(d) The first 7 pairs are called true ribs, the 8th, 9th and 10th pair is known as false (vertebrochondral) ribs, and 2 pairs (11th and 12th) are known as floating ribs.

Pg 310 - 3rd para

82. Scapula is an example of

(a) Long bone (b) Short bone

(c) Flat bone (d) Irregular bone

Pg 311 - 2nd para

83. The number of bones in human axial skeleton is
(a) 120 (b) 142
(c) 80 (d) 206
Pg 309 - 2nd para

84. The number of bones in the vertebral column of! man is
(a) 32 (b) 26
(c) 35 (d) 20
Pg 310 - 2nd para

85. The vertebra which bears the whole weight of the skull is
(a) Atlas (b) Axis
(c) Cervical (d) Sacral
Pg 310 - 2nd para

86. In the case of many mammals, including man and giraffe, the numbers of cervical vertebrae are
(a) 8 (b) 7
(c) 9 (d) 10
Pg 310 - 2nd para

87. The eighth and ninth ribs are known as false ribs] because their external portions are attached to
(a) Xiphisternum
(b) Costa of 7th rib.
(c) They have no costa.
(d) They are not true ribs. ,-
Pg 310 - 3rd para

88. Malleus is a part of
(a) Forelimbs of vertebrates.
(b) Reproductive organs of cockroach.
(c) Auditory ossicles of middle ear of human.
(d) Skull of frog.
Pg 309 - last para

89. In human beings, the thoracic basket is composed of
(a) Ribs and thoracic vertebrae. .
(b) Ribs and sternum.
(c) Ribs, sternum and vertebrae.
(d) Ribs, sternum and thoracic vertebrae.
Pg 310 - 2nd para

90. The bone which is U-shaped is
(a) Frontal (b) Vomer
(c) Hyoid (d) Molar
Pg 309 - 1st para

91. The number of floating ribs in human body is
(a) 6 pairs (b) 3 pairs
(c) 5 pairs (d) 2 pairs
Pg 310 - 3rd para

92. Foramen magnum and occipital condyles are found in
(a) Parietal bone (b) Ethmoid bone
(c) Sphenoid bone (d) Occipital bone
Pg 310 - 1st para

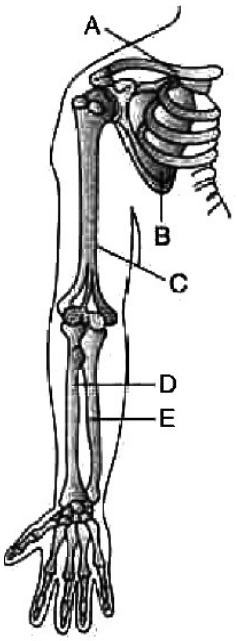
93. The acromion process articulates with the
(a) Scapula (b) Clavicle
(c) Ribs (d) Vertebral column
Pg 311 - 2nd para

94. The number of lumbar vertebrae in human vertebral column is
(a) 12 (b) 7
(c) 5 (d) 2
Pg 310 - 2nd para

95. The cup-shaped cavity for the articulation of head of the femur is called
(a) Glenoid cavity (b) Acetabulum
(c) Obturator (d) Sigmoid notch
Pg 311 - 3rd para

96. The ribs attached to sternum are
(a) First seven pairs (b) All ten ribs
(c) First ten rib pairs (d) First five rib pairs
Pg 310 - 3rd para

97. Which part is indicated as A, B, C, D and E in the given figure?



(a) A: Clavicle, B: Scapula, C: Humerus, D: Radius, E;Ulna.
(b) A: Humerus, B: Clavicle, C: Ulna, D: Scapula, E: Radius.
(c) A: Ulna, B: Humerus, C: Clavicle, D: Radius, E: Scapula.
(d) A: Radius, B: Ulna, C: Scapula, D: Clavicle, E: Humerus.

Pg 311

98. A shallow depression in the scapula which receives the head of the upper arm bone is known as the
(a) Acetabulum (b) Neural arch
(c) Glenoid cavity (d) None of these

Pg 311 - 2nd para

99. Patella, the sesamoid bone is also known as
(a) Pisiform (b) Replacing bone
(c) Knee cap (d) None of these

Pg 311 - 1st para

100. The cup-shaped structure of pelvic girdle and the acetabulum in man is formed by
(a) Ilium, ischium and pubis.
(b) Ilium, ischium and cotyloid.
(c) Ilium and ischium.
(d) Ilium and cotyloid.

Pg 311 - 3rd para

101. The total number of bones in your right arm is
(a) 30 (b) 32
(c) 35 (d) 40

Pg 310 - last para

102. Innominate or hip bone is formed by the fusion of how many bones?
(a) 2 (b) 3
(c) 4 (d) 5

Pg 311 - 3rd para

103. Phalangeal formula of the hand of a man is
(a) 1,2,2,2,2 (b) 2, 1,1,1, 1
(c) 2,3,3,3,3 (d) 2, 3, 3, 2, 2

Pg 311 - last para

104. Appendicular skeleton includes all except
(a) Hindlimb
(b) Forelimb
(c) Amphicoelous vertebra
(d) Pectoral and pelvic girdle

Pg 311 - 1st para

105. Which one of the cartilages help in early birth of a child without damaging the pelvic girdle?
(a) Hyaline cartilage
(b) Elastic cartilage
(c) Calcified cartilage
(d) Fibrous cartilage

Pg 311 - 3rd para

106. Carpals, metacarpals, tarsals and metatarsals are and in numbers, respectively.
(a) 8, 5, 7, 5 (b) 8, 7, 5, 5
(c) 8, 5, 8, 5 (d) 8, 5, 5, 7

Pg 311 - 1st para

107. Scapula is a large triangular and flat bone situated in the dorsal part of the thorax between ____to ____ ribs.
(a) 2, 5 (b) 2, 7
(c) 2, 6 (d) 2, 8

Pg 311 - 2nd para

108. Scapula has slightly elevated ridge called the spine, which projects as a flat, expanded process known as
(a) Coracoid (b) Greater tubercle
(c) Acromion (d) Lesser tubercle

109. Joints are lubricated by
(a) Epidermis
(b) Dermis
(c) Tympanic membrane
(d) Synovial fluid

Pg 312 - 4th para

110. Ball and socket joints can be seen in
(a) Wrist (b) Fingers
(c) Neck (d) Shoulders

Pg 312 - 4th para

111. The knee joint in between the thigh and lower leg is a
(a) Hinge joint (b) Gliding joint
(c) Pivot joint (d) Fixed joint

Pg 312 - 4th para

112. The joint between the carpal bones and tarsal bones is
(a) Gliding joint (b) Ball and socket joint
(c) Hinge joint (d) Saddle joint

Pg 312 - 4th para

113. The joint between femur and tibia-fibula is
(a) Hinge joint (b) Saddle joint
(c) Pivot joint (d) Imperfect joint
Pg 312 - 4th para

114. Articulation of the atlas with the axis is an example of
(a) Hinge joint (b) Ball and socket joint
(c) Gliding joint (d) Pivotjoint
Pg 312 - 4th para

115. Suture joints are found between
(a) Parietals of skull.
(b) Humerus and radio-ulna.
(c) Glenoid cavity and pectoral girdle.
(d) Thumb and metatarsal.
Pg 312 - 2nd para

116. The inflammation of joints due to accumulation of uric acid crystals occur in
(a) Osteoporosis (b) Gout
(c) Tetany (d) Rickets
Pg 312 - last para

117. Myasthenia gravis is
(a) Autoimmune disorder affecting neuromuscular junction leading to fatigue, weakening and paralysis of skeletal muscle.
(b) Progressive degeneration of skeletal muscle is mostly due to genetic disorder.
(c) Rapid spasms (wild contractions) in muscle is due to low Ca^{++} in body fluid.
(d) Inflammation of joints.
Pg 312 - last para

118. Progressive degeneration of skeletal muscle, mostly due to genetic disorder, is
(a) Osteoporosis (b) Gout
(c) Tetany (d) Muscular dystrophy
Pg 312 - last para

119. Tetany is due to
(a) Low Ca^{2+} in body fluid.
(b) High Ca^{2+} in body fluid.
(c) High concentration of uric acid in body fluid.
(d) All of these
Pg 312 - last para

120. Which of the following is age-related disorder characterized by decreased bone mass and increased chances of fractures, where decreased levels of oestrogen are a common cause?
(a) Osteoporosis (b) Gout
(c) Tetany (d) Muscular dystrophy
Pg 312 - last para

NEURAL CONTROL AND CO-ORDINATION

1. Select the incorrect statement from the following.

(a) Coordination is the process through which two or more organs interact and complement the function of one another.

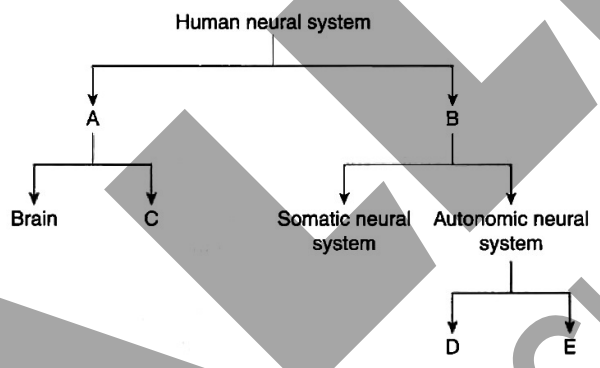
(b) Neural system provides on organized network of point to point connection for quick coordination.

(c) Neural organization is complex in lower invertebrates.

(d) Vertebrates have more developed neural system.

Pg 316 2nd para

2. Identify A, B, C and E in the following diagram.



(a) A: Central nervous system (CNS), B: Peripheral nervous system (PNS), C: Spinal cord, D: Sympathetic neural system, E: Parasympathetic neural system.

(b) A: Peripheral nervous system (PNS), B: Parasympathetic neural system, C: Central nervous system (CNS), D: Sympathetic neural system, E: Spinal cord.

(c) A: Parasympathetic neural system, B: Spinal cord, C: Central nervous system (CNS), D: Sympathetic neural system, E: Peripheral nervous system (PNS).

(d) A: Central nervous system (CNS), B: Spinal cord, C: Peripheral nervous system (PNS), D: Sympathetic neural system, E: Parasympathetic neural system.

Pg 316 3rd para

3. Somatic neural system transmits impulse to which of the following?

(a) Skeletal muscle

(b) Involuntary organs

(c) Smooth muscles

(d) All of these

4. Nervous system of hydra is composed of

(a) Ganglia chain

(b) Vertical ganglion chain interconnected by commissure.

(c) Network of nerves.

(d) Brain

Pg 316 2nd para

5. Nissl's granules are found in all except

(a) Cyton (b) Dendrites

(c) Axon (d) Cell body

Pg 316 last para

6. Dendrites transmit impulse ____ cell body and axon transmit impulse ____ cell body.

(a) Towards, away from

(b) Away, towards

(c) Towards, towards

(d) Away, away

Pg 317 1st para

7. Bipolar axons are found in

(a) Retina of eye (b) Cerebral cortex

(c) Mesencephalon (d) Embryonic stage

Pg 317 1st para

8. Unipolar axons are found in

(a) Respiratory epithelium (b) Retina

(c) Embryo (d) Cerebral cortex

Pg 317 2nd para

9. Schwann cell is absent in

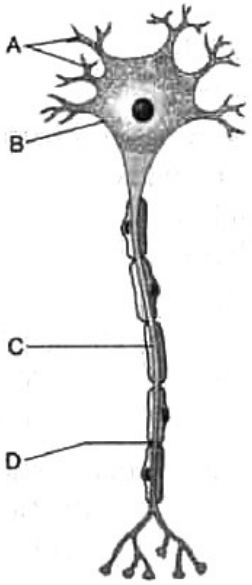
(a) Myelinated neuron

(b) Non-myelinated neuron

(c) Astrocytes

(d) Both (b) and (c)

10. Answer the following questions with respect to the given figure.



Structure of neutron

(A) Which part do not contain Nissl's granule?
(a) A (b) B
(c) C (d)All
(B) Which path of transmission is correct?
(a) A → B → C (b) B → A → C
(c) C → B → A (d) B → A → B → C

Pg 317

11. Match the following columns.

Column I	Column II
(A) Unipolar	(l) Cell body with one axon only is found usually in the embryonic stage.
(B) Bipolar	(2) Cell body with one axon and two or more dendrites is found in cerebral cortex.
(C) Multipolar	(3) Cell body with one axon and one dendrite is found in retina of eye.

(a) A - 1, B - 3, C - 2 (b) A - 2, B - 1, C - 3
(c) A - 3, B - 2, C - 1 (d) A - 1, B - 2, C - 3

Pg 317 1st para

12. Myelinated nerve fibre is found in
(a) Spinal nerve (b) Cranial nerve
(c) Both (a) and (b) (d) None of these

Pg 317 1st para

13. Unmyelinated nerve fibres are found in
(a) ANS (b) Somatic neural system
(c) Both (a) and (b) (d) None of these

Pg 317 1st para

14. The gaps between two adjacent myelin sheaths are called nodes of
(a) Schwann (b) Ranvier
(c) Nissl (d) Malpighi

Pg 317 1st para

15. A typical neuron consists of
(a) Cyton (b) Dendrites
(c) Axon (d) All of these

Pg 316 last para

16. Synaptic knob contains synaptic vesicles which possess chemicals called
(a) Prostaglandins (b) Interferons
(c) Antibodies (d) Neurotransmitters

Pg 317 last para

17. The resting axonal membrane is
(a) Unpolarized
(b) Unpolarized and more permeable to K^+.
(c) Polarized and more permeable to Na^+.
(d) Polarized and more permeable to K^+.

Pg 317 last para

18. Ion channels present on neural membrane are
(a) Fully permeable
(b) Selectively permeable
(c) Impermeable
(d) None of these

19. Na/K pumps transports
(a) $3Na^+$out for $2K^+$ in
(b) $3Na^+$ in for $2K^+$ out
(c) $2Na^+$ out for $3K^+$ in
(d) $2Na^+$ in for $3K^+$ out

Pg 317 2nd para

20. Which of the following statement is true about neural membrane?
(a) Different type of ion channels present.
(b) Ion channels are selectively permeable.
(c) Impermeable to negatively charged protein is present in axoplasm.
(d) All the above

Pg 317 last para

21. Axoplasm have which of the following in polarized state?
(a) High K^+ ion
(b) Low Na^+ ion
(c) Negatively charged proteins
(d) All of these

Pg 317 last para

22. The electrical potential difference across the resting plasma membrane is called
(a) Spike potential (b) Action potential
(c) Resting potential (d) All of these

23. Depolarization occurs due to
(a) Influx of Na^+ (b) Efflux of Na^+
(c) Influx of K^+ (d) Efflux of K^+

Pg 318 5th para

24. Choose the correct sequence for depolarization and repolarization.
(A) Stimulus applied at a site on polarized membrane.
(B) Increased permeability for Na+.
(C) Generation of action potential.
(D) Increase permeability for K+.
(E) Restoration of membrane potential.
(a) $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E$
(b) $B \rightarrow A \rightarrow C \rightarrow D \rightarrow E$
(c) $A \rightarrow D \rightarrow C \rightarrow B \rightarrow E$
(d) $A \rightarrow B \rightarrow D \rightarrow C \rightarrow E$

Pg 318 last para

25. Unidirectional transmission of the nerve impulse is maintained by
(a) Interneurons (b) Myelin sheath
(c) Synapse (d) Membrane polarity

Pg 318 last para

26. Select the total number of true statements from the following.
(1) There are two types of synapses, namely electrical synapses and chemical synapses.
(2) Electrical synapses are rare in our system.
(3) At chemical synapse, the membranes of pre- and Postsynaptic neuron are in very close proximity.
(4) Transmission of an impulse across electrical synapses is very similar to impulse conduction along a single axon.
(5) At a chemical synapse, the membrane of the pre- and Postsynaptic neurons are separated by a fluid-filled space called synaptic cleft.
(a) 2 (b) 3
(c) 4 (d) 5

Pg 319 1st para

27. Chemicals called are involved in the transmission of impulses at chemical synapse.
(a) Neurohormones (b) Neurotransmitters
(c) Receptors (d) Interferon

Pg 319 2nd para

28. The new potential developed on Postsynaptic membrane is
(a) Excitatory always
(b) Inhibitory always
(c) May be excitatory or inhibitory
(d) Neither excitatory nor inhibitory

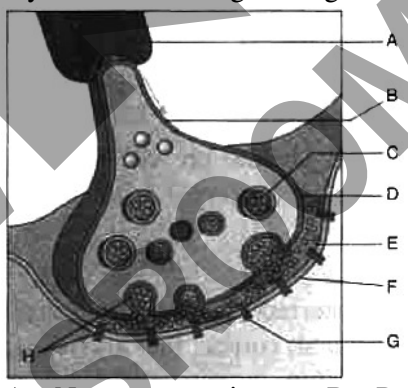
29. At a chemical synapse, the membrane of the pre- and Postsynaptic neurons are separated by a fluid-filled space called
(a) Synaptic cleft (b) Inter neuron
(c) Chiasmata (d) Podocytes

Pg 319 1st para

30. A wave of depolarization of the membrane of nerve cell is called
(a) Nerve impulse (b) Action potential
(c) Spike potential (d) All of these

Pg 318 10th line 2nd para

31. Identify A to H in the given figure.



(a) A: Neurotransmitters, B: Presynaptic membrane, C: Receptors, D: Axon, E : Synaptic vesicles, F : Axon terminal, G: Synaptic cleft, H: Postsynaptic membrane.
(b) A: Axon, B: Axon terminal, C: Synaptic vesicles, D: Presynaptic membrane, E: Synaptic cleft, F: Postsynaptic membrane, G: Receptors, H: Neurotransmitters.
(c) A: Receptors, B: Postsynaptic membrane, C: Presynaptic membrane, D: Axon terminal, E: Neurotransmitters, F: Synaptic cleft, G: Synaptic vesicles, H: Axon.
(d) A: Axon terminal, B: Neurotransmitters, C: Synaptic vesicles, D: Axon, E: Presynaptic membrane, F: Postsynaptic membrane, G: Synaptic vesicles, H: Synaptic cleft.

Pg 319

32. The outermost part of the three cranial meninges is
(a) Arachnoid (b) Dura
(c) Pia (d) Sclera

Pg 320 rd para

33. Out of the three which cranial meninges is in contact with brain?
(a) Arachnoid (b) Dura
(c) Pia (d) Sclera

Pg 320 rd para

34. The human brain is covered by how many meninges?
(a) 1 (b) 2
(c) 3 (d) All of these
Pg 320 rd para

35. The human brain can be divided into
(a) Forebrain (b) Midbrain
(c) Hindbrain (d) All of these
Pg 320 rd para

36. Brain stem is formed by
(a) Forebrain (b) Midbrain
(c) Hindbrain (d) Both (b) and (c)
Pg 321 2nd para

37. The right and left cerebral hemispheres are connected through
(a) Corpus striatum (b) Corpus callosum
(c) Thalamus (d) Hippocampus
Pg 321 1st para

38. Forebrain consists of
(a) Cerebrum (b) Thalamus
(c) Hypothalamus (d) All of these
Pg 321 1st para

39. Cerebrum is made up of how many cerebral hemispheres?
(a) 1 (b) 2
(c) 3 (d) 4
Pg 321 1st para

40. Select the incorrect statement from the following.
(a) In cerebral cortex, the greyish appearance is thrown into prominent folds known as sulci and gyri.
(b) Concentrated neuron cell body gives grey colour to cerebral cortex.
(c) Fibres of the tract covered with myelin sheath constitutes the inner part of cerebral hemisphere.
(d) Cerebrum is wrapped around the structure called medulla.
Pg 321 1st para

41. Cerebral cortex contains
(a) Sensory area (b) Motor area
(c) Large association are (d) All of these
Pg 321 1st para

42. The association area in cerebral cortex is responsible for
(a) Intersensory association
(b) Memory
(c) Communication
(d) All of these
Pg 321 1st para

43. The major coordinating centre for sensory and motor signalling is
(a) Thalamus (b) Hypothalamus
(c) Medulla (d) Pons
Pg 321 1st para

44. Hypothalamus contains centre which control
(a) Body temperature
(b) Urge for eating
(c) Urge for drinking
(d) All of these
Pg 321 1st para

45. Hippocampus is present in
(a) Forebrain (b) Midbrain
(c) Hindbrain (d) Pons
Pg 321 1st para

46. Which of the following is true about hypothalamus?
(a) Situated at the base of thalamus.
(b) Contain neurosecretory cell.
(c) It contains centre for thermoregulation.
(d) All of these ;
Pg 321 1st para

47. Limbic system consists of
(a) Amygdala (b) Hippocampus
(c) Both (a) and (b) (d) None of these
Pg 321 1st para

48. The part of brain located between thalamus and hypothalamus of forebrain and pons is known as
(a) Midbrain (b) Hindbrain
(c) Limbic system (d) All of these
Pg 321 2nd para

49. Which of the following is true about midbrain?
(a) A canal called cerebral aqueduct passes through the midbrain.
(b) The dorsal portion of midbrain consists of four round swelling called corpora quadrigemina.
(c) It forms the part of brain stem.
(d) All of these
Pg 321 2nd para

50. The hindbrain consists of
(a) Pons (b) Medulla oblongata
(c) Cerebellum (d) All of these
Pg 321 3rd para

51. Hypothalamus controls
(a) Body's thermostat
(b) Respiration
(c) Gastric secretions
(d) All of these

52. Limbic system is a part of
(a) Forebrain (b) Midbrain
(c) Hindbrain (d) Pons
Pg 321 1st para

53. Limbic system controls
(a) Sexual behaviour (b) Motivation
(c) Affection (d) All of these
Pg 321 1st para

54. Corpora quadrigemina are present on ____ portion of mesencephalon (midbrain).
(a) Anterior (b) Dorsal
(c) Ventral (d) Lateral
Pg 321 2nd para

55. Which of the following is false about hindbrain?
(a) Pons part of it consists of fibre tracts that interconnects different regions of brain.
(b) Cerebellum part of it has very convoluted surface to accommodate many neurons.
(c) Medulla of this part is connected to spinal cord.
(d) Hindbrain is responsible for regular excitement, pleasure, rag and fear.
Pg 321 3rd para

56. The medulla is the centre for
(a) Respiration
(b) Cardiovascular Reflex
(c) Gastric Secretion
(d) All of these
Pg 321 3rd para

57. Which of the following consists of fibre tracts interconnecting different regions of brain?
(a) Cerebellum (b) Pons varolii
(c) Medulla (d) All of these
Pg 321 3rd para

58. Which of the following helps in the regulation of respiration?
(a) Medulla (b) Cerebral cortex
(c) Pons (d) Both (a) and (c)
Pg 321 3rd para

59. The dorsal nerve root ganglion is
(a) Bipolar (b) Unipolar
(c) Pseudounipolar (d) Multipolar
Diagram of Pg. 322

60. Reflex action
(a) Occur involuntary
(b) Requires involvement of CNS.
(c) Is protective
(d) All of these
Pg 322 1st para

61. Smallest reflex consists of
(a) Afferent neuron (Receptor)
(b) Efferent neuron (Effector)
(c) Both (a) and (b)
(d) None of these
Pg 322 7th line

62. In reflex action, the reflex arc is formed by
(a) Muscle, receptor and brain.
(b) Brain, spinal cord and muscle.
(c) Receptor, spinal cord and muscle.
(d) Receptor, muscle and spinal cord.
Pg 322 diagram

63. Which of the following is an example of spinal reflex?
(a) Knee-jerk reflex (b) Corneal reflex
(c) Pupillary reflex (d) Conjunctival reflex
Pg 322 last line

64. Reflex action is under
(a) CNS
(b) Spinal cord
(c) Peripheral nervous stimulation
(d) Voluntary response
Pg 322

65. Eyes are located in
(a) Eye orbits
(b) Depression in sphenoid bone
(c) Both (a) and (b)
(d) None of these
Pg 323 5th para

66. Choroid is blue due to ____.
(a) Lack of O_2 in tissue.
(b) Due to pigment.
(c) Excess of blood vessels.
(d) None of these
Pg 323 6th para, 11th line

67. Choroid thickens anteriorly to form
(a) Lens
(b) Ciliary body
(c) Suspensory ligaments
(d) None of these
Pg 323 last line

68. The diameter of pupil is regulated by
(a) Lens (b) Ciliary muscles
(c) Muscles of iris (d) All of these
Pg 324 1st para, last line

69. The cells located on retina are
(a) Photoreceptor cells
(b) Bipolar cells
(c) Ganglion cells
(d) All of these
Pg 324 2nd para, 1st line

70. The layers in the wall of eyeballs from inside outwards are
(a) Retina, choroid and sclerotic.
(b) Sclerotic, choroid and retina.
(c) Choroid retina and sclerotic.
(d) Choroid, sclerotic and retina.
Pg 323 6th para

71. Which layer of the wall of an eyeball contains abundant blood vessels?
(a) Lens (b) Retina
(c) Choroid (d) Sclerotic
Pg 323 6th para

72. Iris is a part of
(a) Choroid only
(b) Retina only
(c) Sclera and choroid
(d) Choroid and retina
Pg 324 1st para

73. Cornea is a transparent part of
(a) Choroid (b) Sclera
(c) Conjunctiva (d) Retina
Pg 323 6th para

74. Suspensory ligament (zonule of Zinn) is a part of
(a) Tongue (b) Brain
(c) Heart (d) Eye
Pg 324 1st para

75. The choroid layer is thin over the ____ of the eye ball.
(a) Anterior two-third
(b) Posterior two-third
(c) Lateral two-third
(d) Posterior one-third
Pg 323 6th para, 12th line

76. Find out the incorrect statement from the following.
(a) Lens is transparent and crystalline structure.
(b) Iris is pigmented and opaque layer.
(c) Aperture surrounded by iris is called pupil.
(d) Twilight vision is the function of cones.
Pg 324 1st para

77. Aqueous humour is present
(a) In front of the retina.
(b) In front of cornea.
(c) Behind the conjunctiva.
(d) In front of lens.
Pg 324 4th para

78. Retinal cells involved in colour vision are
(a) Cones (b) Rods
(c) Neurons (d) Neuroglial cells

79. Which of the following is not a basic colour in trichromatic vision?
(a) Red (b) Yellow
(c) Green (d) Blue
Pg 324 2nd para, 10th line

80. Colour vision in man is
(a) Trichromatic (b) Bichromatic
(c) Monochromatic (d) Achromatic
Pg 324 2nd para, 10th line

81. Rhodopsin is a constituent of
(a) Choroid (b) Sclera
(c) Cornea (d) None of these
Pg 324 last para

82. Macula lutea is located
(a) In the middle of retina.
(b) Below lens
(c) Below pupil
(d) At posterior pole lateral to blind spot.
Pg 324 3rd para

83. Photopic vision is associated with
(a) Rods (b) Cones
(c) Both (a) and (b) (d) None of these
Pg 324 2nd parra, 5th line

84. Retina is most sensitive at
(a) Optic disc (b) Periphery
(c) Macula lutea (d) Fovea centralis
Pg 324 2nd para

85. Rhodopsin (visual purple) of the eye will require
(a) Guava (b) Carrot
(c) Mango (d) Wheat
Pg 324 2nd para

86. An area of the retina which does not have rods or cones are
(a) Red spot (b) Blue spot
(c) Blind spot (d) Black spot
Pg 324 2nd para

87. The fovea is a ____ portion of the ____
(a) Thick-out, sclera
(c) Thin-out, retina
(b) Thin-out, choroid
(d) Thick-out, retina
Pg 324 3rd para, 6th line

88. Vitreous chamber is filled with
(a) Transparent sol called"vitreous humour.
(b) Transparent gel called vitreous humour.
(c) Opaque sol called vitreous humour.
(d) Opaque gel called vitreous humour.
Pg 324 3rd para, last

89. Optic nerve leaves the eye balls at which of the following location?
(a) Slightly below the posterior pole of eye ball.
(b) Slightly above the posterior pole of eye ball.
(c) Anterior pole of eye ball.
(d) Macula lutea

Pg 324 3rd para

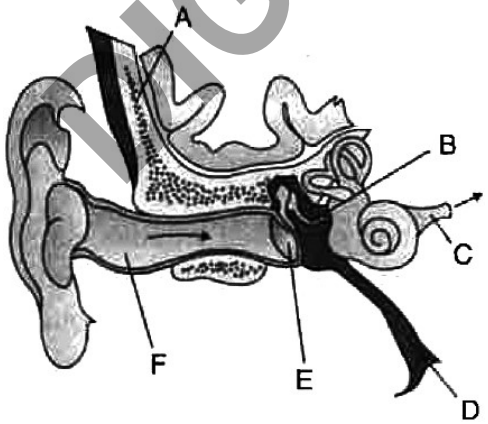
90. Arrange the correct sequence of vision mechanism.
(1) Light induces dissociation of the retinal from opsin.
(2) Change in the structure of opsin.
(3) Change in membrane permeability.
(4) Potential differences are generated in photoreceptor cells.
(5) Generation of AP is ganglion cell through bipolar cells.
(6) AP transmitted through optic nerve to visual cortex.
(7) At visual cortex, nerve impulses are analysed and image formed on retina is recognized based on earlier memory and experience.
(8) Focusing of visible light on retina.
(a) 8, 1, 2, 3, 4, 5, 6, 7
(b) 8, 1, 7, 2, 6, 3, 5, 4
(c) 1,2,3,4,5,6,7,8
(d) 8, 7, 6, 5, 4, 3, 2, 1

Pg 324 last para

91. Ear performs which of the following sensory function?
(A) Vision
(B) Olfaction
(C) Hearing
(D) Maintenance of body balance
(a) A, B and C (b) B and C Only
(c) C and D Only (d) C Only

Pg 325 2nd para

92. Identify the parts A to F in the given figure.



(a) A: Cochlear nerve, B: Incus, C: Eustachian tube, D: Cochlea, E: External auditory canal, F: Tympanic membrane.
(b) A: External auditory canal, B: Eustachian tube, C: Temporal bone, D: Steps in oval window, E: Tympanic membrane, F: Cochlear nerve.
(c) A: Cochlea, B: Tympanic membrane, C: Incus, D: Cochlear nerve, E: Eustachian tube, F: External auditory canal.
(d) A: Temporal bone, B: Steps in oval window, C: Cochlear nerve, D: Eustachian tube, E: Tympanic membrane, F: External auditory canal.

Pg 325

93. Anatomically, the ear can be divided into how many major sections?
(a) 1 (b) 2
(c) 3 (d) 4

Pg 325 2nd para

94. Tympanic membrane consists of
(a) Skin on outside.
(b) Connective tissue in the middle part.
(c) Mucus membrane on inside.
(d) All of these

Pg 325 2nd para, 15th line

95. The ____ is attached to the tympanic membrane and the ____ is attached to the oval window of the cochlea.
(a) Malleus, Incus (b) Incus, Stapes
(c) Malleus, Stapes (d) Stapes, Malleus

Pg 326 3rd para

96. Select the incorrect statement from the following.
(a) Eustachian tube connects middle ear cavity with the pharynx.
(b) The Eustachian tube helps in equalizing the pressure on either side of the ear drum.
(c) Oval window is a part of cochlea.
(d) The ear ossicle decreases the efficiency of transmission of sound waves to the inner ear.

Pg 326 3rd para

97. Select the correct matching.
(a) Inner ear ossicle $\rightarrow$ Malleus, incus and stapes
(b) Scala media $\rightarrow$ Filled with perilymph
(c) Fluid filled ear $\rightarrow$ Labyrinth
(d) Bony labyrinth $\rightarrow$ Surrounded by tympanic membrane

Pg 325 last para

98. Inner ear contains all except
(a) Reissner's membrane
(b) Basilar membrane
(c) Cochlea
(d) Stapes

Pg 325 last para

99. Select the totaj number of true statements from the following.
(1) Scala vestibuli end at the oval window.
(2) Scala tympani terminates at round window.
(3) Vestibular apparatus located above cochlea.
(4) Otolith organ consists of saccule and utricle,
(a) 1 (b) 2
(c) 3 (d) 4

Pg 326 last para

100. Vestibular apparatus consists of
(a) Three semicircular canals
(b) Saccule
(c) Utricle
(d) All of these

Pg 326 last para

101. Specific receptors of the vestibular apparatus responsible for maintenance of body balance and posture is
(a) Macula (b) Crista
(c) Organ of Corti (d) Both (a) and (b)

Pg 326 last para

102. Each semicircular canal lies in a different plane at ____ angle to each other.
(a) 45° (b) 60°
(c) 90° (d) 120°

Pg 326 last para

103. In man, the receptors stimulated by sound waves are
(a) Organ of Corti (b) Semicircular canal
(c) Utriculus (d) Sacculus

Pg 326 2nd para

104. Scala vestibuli is connected with
(a) Scala media (b) Fenestra ovalis
(c) Scala tympani (d) Fenestra rotundus

105. Identify the correct sequence of organs/regions in the organization of human ear as an auditory mechanoreceptor organ.
(a) Pinna-Cochlea-Tympanic membrane-Auditory canal-Malleus-Stapes-Incus-Auditory nerve.
(b) Pinna-Auditory canal-Tympanic membrane-Malleus-Incus-Stapes-Cochlea-Auditory nerve.
(c) Pinna-Tympanic membrane-Auditory canal-In¬cus-Malleus-Stapes-Cochlea - Auditory nerve.
(d) Pinna-Malleus-Incus-Stapes-Auditory canal-Tympanic membrane-Cochlea-Auditory nerve.

Pg 327 last para

106. Internal ear is filled with
(a) Perilymph
(b) Endolymph
(c) Lymph
(d) Both (a) and (b)

Pg 325 last line

107. Reissner's membrane is found in
(a) Cochlea of mammal.
(b) Eye of mammal.
(c) Heart of mammal.
(d) Nasal duct of mammal.

Pg 325 last para

108. In the internal ear, the 'organ of Corti' which bears hair cells is located in
(a) Saccule
(b) Scala media
(c) Scala tympani
(d) Scala vestibuli

Pg 326 2nd para

109. Equilibrium of the body is maintained by
(a) Saccule and cochlea.
(b) Semicircular canals and utriculus.
(c) Eustachian tube
(d) Ear ossicles

Pg 326 last para

110. Which of the following senses is affected if the tectorial membrane is removed from human?
(a) Balance
(b) Hearing
(c) Vision
(d) Smell

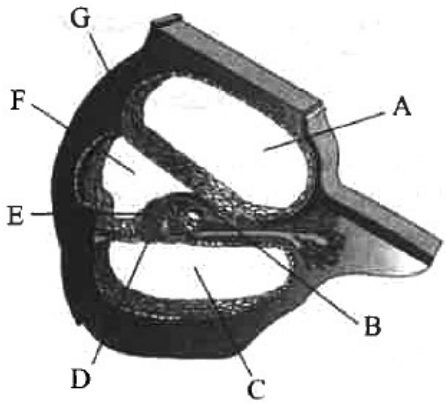
Pg 326 2nd para

111. The waxy substance which coats the surface of auditory canal is produced by
(a) Harderian glands
(b) Meibomian glands
(c) Zeis glands
(d) Ceruminous glands (sebaceous gland)

Pg 325 1st para, 13 line

112. Maculae in man are present in
(a) Semicircular canals
(b) Utricle
(c) Saccule
(d) Both utricle and saccule .

113. Identify A, B, C, D, E, F and G in the given figure.



(a) A: Scala vestibuli, B: Tectorial membrane, C: Scala tympani, D: Basilar membrane, E: Organ of Corti, F: Scala media, G: Reissner's membrane.

(b) A: Scala tympani, B: Reissner's membrane, C: Scala vestibuli, D: Basilar membrane, E: Scala media, F: Organ of Corti, G: Tectorial membrane.

(c) A: Reissner's membrane, B: Tectorial membrane, C: Scala media, D: Organ of Corti, E: Scala vestibuli, F: Scala tympani, G: Basilar membrane.

(d) A: Tectorial membrane, B: Scala tympani, C: Reissner's membrane, D: Basilar membrane, E: Scala vestibuli, F: Scala tympani, G: Organ of Corti.

Pg 326

114. The base of semicircular canals is swollen and is called which contains projecting ridges called that has hair cells.

(a) Papilla, macula ampullaris

(b) Ampulla, crista ampullaris

(c) Ampulla, macula ampullaris

(d) Macula, crista ampullaris

Pg 327 1st line

115. Otolith organ consists of

(a) Saccule

(b) Utricle

(c) Semicircular canal

(d) Both (a) and (c)

Pg 326 last para , 3rd line

116. Select the correct statement from the following.

(a) Neural system coordinates and integrates functions as well as metabolic and homeostatic activities of all organs.

(b) Chemicals involved in the transmission of impulse at chemical synapses are always proteins.

(c) The electrical potential difference across the resting neural membrane is called the action potential.

(d) Organ of Corti is influenced by gravity and movement, and it helps in maintaining the balance of the body and posture.

117. Which part of human brain is concerned with the regulation of body temperature?

(a) Cerebellum (b) Cerebrum

(c) Hypothalamus (d) Medulla oblongata

Pg 321 1st para , 19th line

118. During the propagation of a nerve impulse, the action potential results from the movement of

(a) K^+ ions from intracellular fluid to extracellular fluid

(b) Na^+ ions from extracellular fluid to intracellular fluid

(c) K^+ ions from extracellular fluid to extracellular fluid

(d) Na^+ ions from intracellular fluid to extracellular fluid

Pg 318 2nd para , 5th line

119. Which one of the following pairs of structures distinguishes a nerve cell from other types of cells?

(a) Vacuoles and fibres

(b) Flagellum and medullary sheath

(c) Nucleus and mitochondria

(d) Perikaryon and dendrites

Pg 317

120. During the transmission of nerve impulse through a nerve fibre, the potential on the inner side of the plasma membrane has which type of electric change?

(a) First positive, then negative and continue to be positive

(b) First negative, then positive and continue to be positive.

(c) First positive, then negative and again back to positive

(d) First negative, then positive and again back to negative.

Pg 318 2nd para

121. In which animal, nerve cell is present but brain absent?
(a) Sponge (b) Earthworm
(c) Cockroach (d) Hydra

Pg 316 2nd para

122. Which of the following statements is correct about node of Ranvier of nerve?
(a) Neurilemma is discontinuous
(b) Myelin sheath is discontinuous
(c) Both neurilemma and myelin sheath discontinuous
(d) Covered by myelin sheath

Pg 317 1st para, 19th line

123. Resting membrane potential is maintained by
(a) Hormones
(b) Neurotransmitters
(c) Ion pumps
(d) None of these

Pg 317 last para , 2nd last line

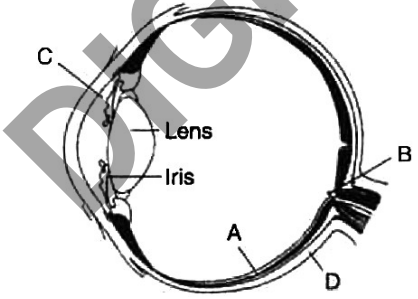
124. An area in the brain which is associated with strong emotions is
(a) Cerebral cortex (b) Cerebellum
(c) Limbic system (d) Medulla

Pg 321 1st para, 2nd last line

125. While travelling to higher altitudes, people can feel pain in the ear and dizziness. Which part, among the following causes such complications?
(a) Cochlea, ear ossicles
(b) Tympanic membrane
(c) Eustachian tube, utricle, saccule and semicircular canals
(d) None of these

Pg 326 last para

126. Parts A, B, C and D of the human eye are shown in the diagram. Select the option which gives correct identification along with its function and characteristics.



(a) A - Retina - contains photo receptors rods and cones
(b) B - Blind spot - has only a few rods and cones
(c) C - Aqueous chamber - reflects the light which does not pass through the lens
(d) D - Choroid - its anterior part forms ciliary body

Pg 323

127. Which one of the following statements is not correct?
(a) Retinal is the light absorbing portion of visual photo pigments
(b) In retina, the rods have photopigment rhodopsin while cones have three different photopigments
(c) Retinal is a derivative of Vitamin C
(d) Rhodopsin is the purplish red protein present in rods only

Pg 324 2nd para. 8th line

128. A gymnast is able to balance his body upside down even in total darkness because of:
(a) Cochlea
(b) Vestibular apparatus
(c) Tectorial membrane
(d) Organ of corti

Pg 326 last para

129. The transparent lens in the human eye is held in its place by
(a) Ligaments attached to the ciliary body
(b) Smooth muscles attached to the iris
(c) Ligaments attached to the iris
(d) Smooth muscles attached to the ciliary body

Pg 324 1st para

CHEMICAL CO-ORDINATION AND INTEGRATION

1. Select the incorrect statement from the following.
(a) Neural system provides point to point rapid coordination among organs.
(b) Neural coordination is fast.
(c) Neural coordination is short-lived.
(d) Nerve fibres innervates all the cells of body so cellular function is continuously regulated.

Pg. 331, Para 1

2. Which system jointly coordinates and regulates the physiological functions in the body?
(a) Nervous system (b) Endocrine system
(c) Both (a) and (b) (d) None of these

Pg. 331, Para 1

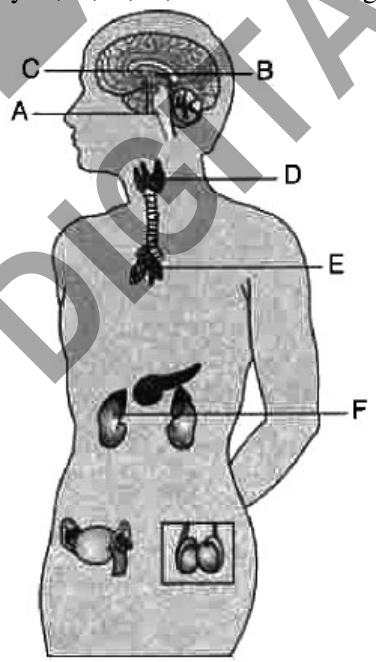
3. Hormonal system is very important because
(a) Neural coordination is fast.
(b) Nerve fibres do not innervate all the cells of body.
(c) Neural system provides point to point coordination among organ.
(d) Neural coordination is short-lived.

Pg. 331, Para 1

4. Endocrine glands
(a) Are ductless
(b) Secrete hormones
(c) Pour their secretion in blood
(d) All of these

Pg. 331, Para 1

5. Identify A, B, C, D, E and F in the given figure.



(a) A: Hypothalamus, B: Pineal, C: Thymus, D: Adrenal, E: Pituitary, F: Thyroid and parathyroid.
(b) A: Pituitary, B: Pineal, C: Hypothalamus, D: Thyroid and parathyroid, E: Thymus, F: Adrenal.
(c) A: Thymus, B: Pituitary, C: Thyroid and parathyroid, D: Pineal, E: Hypothalamus, F: Adrenal.
(d) A: Pineal, B: Thyroid and parathyroid, C: Pituitary, D: Hypothalamus, E: Adrenal, F: Pineal.

Pg. 332, Fig. 22.1

6. Hormones are
(a) Non-nutrient chemicals
(b) Intercellular messengers
(c) Produced in traces
(d) All of these

Pg. 331, Para 2

7. Select the total number of endocrine glands from the following.
Pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, thymus, gonads.
(a) 7 (b) 8
(c) 6 (d) 5

Pg. 332, Para 1

8. The following organs produce hormones except
(a) GIT (b) Liver and kidney
(c) Heart (d) Urinary bladder

Pg. 332, Para 1

9. Hypothalamus contains several groups of neurosecretory cells called ____ which produce hormones.
(a) Ganglion (b) Plexus
(c) Nuclei (d) Astrocytes

Pg. 332, Para 2

10. Hypothalamus is a part of
(a) Forebrain (b) Midbrain
(c) Hindbrain (d) None of these

Pg. 332, Para 2

11. Hypothalamus is

(a) Roof of diencephalon.

(b) Basal part of diencephalon.

(c) Lateral wall of diencephalon.

(d) All of the above

Pg. 332, Para 2

12. Hypothalamus directly regulates the ____ endocrine gland.

(a) Pituitary (b) Thyroid

(c) Thymus (d) Pancreas

Pg. 332, Para 2

13. Releasing hormones and inhibiting hormones are produced by

(a) Pituitary (b) Thyroid

(c) Thymus (d) Hypothalamus

Pg. 332, Para 2

14. Pars distalis produces how many trophic hormones?

(a) 4 (b) 5

(c) 6 (d) 8

Pg. 333, Para 1

15. The following hormones are released by hypothalamus except

(a) GnRH (b) Somatostatin

(c) TSH-RH (d) PRL

Pg. 332, Para 2

16. Select the incorrect statement from the following.

(a) Invertebrates possess very simple endocrine system.

(b) Anterior pituitary is under control of hypothalamus by portal system.

(c) Posterior pituitary is under direct neural regulation of hypothalamus.

(d) Hypothalamus secretes tropic hormones.

Pg. 333, Para 1

17. Which of the following statement is incorrect about pituitary?

(a) Located in bony cavity called sella turcica.

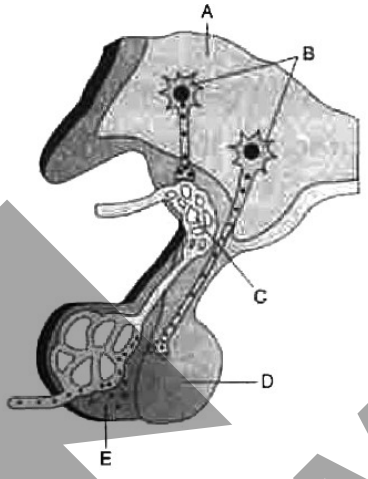
(b) Attached to hypothalamus by stalk.

(c) Divided anatomically into adenohypophysis and neurohypophysis.

(d) Secrete released and inhibitory hormones.

Pg. 333, Para 1

18. Identify A to E in the given figure.



(a) A: Hypothalamus, B: Hypothalamic neurons, C: Portal circulation, D: Posterior pituitary, E: Anterior pituitary.

(b) A: Posterior pituitary, B: Hypothalamic neurons, C: Hypothalamus, D: Anterior pituitary, E: Posterior pituitary.

(c) A: Anterior pituitary, B: Portal circulation, C: Hypothalamus, D: Posterior pituitary, E: Hypothalamus neurons.

(d) A: Hypothalamic neurons, B: Posterior pituitary, C: Anterior pituitary, D: Portal circulation, E: Hypothalamus.

Pg. 333, Para 1

19. Adenohypophysis consists of

(a) Pars distalis (b) Pars intermedia

(c) Pars nervosa (d) Both (a) and (b)

Pg. 333, Para 1

20. Neurohypophysis consists of

(a) Pars distalis (b) Pars intermedia

(c) Pars nervosa (d) All of these

Pg. 333, Para 1

21. Which of the following is commonly known as posterior pituitary?

(a) Pars distalis (b) Pars intermedia

(c) Pars nervosa (d) All of these

Pg. 333, Para 1

22. Select the total number of hormones secreted by pars distalis from the following.

GH, PRL, MSH, FSH, LH, TSH, ACTH, ADH.

(a) 4 (b) 5

(c) 6 (d) 8

Pg. 333, Para 1

23. Pars intermedia secretes (only one hormone)
(a) Follicle stimulating hormone
(b) Melanocyte stimulating hormone
(c) Melatonin
(d) Prolactin

Pg. 333, Para 1

24. Posterior pituitary stores and releases hormones
(a) Oxytocin (b) Vasopressin (ADH)
(c) Growth hormone (d) Both (a) and (b)

Pg. 333, Para 1

25. Where oxytocin and ADH is synthesized?
(a) Anterior pituitary
(b) Posterior pituitary
(c) Hypothalamus
(d) Thalamus

Pg. 333, Para 1

26. Which of the following hormone regulates the growth of the mammary glands and formation of milk?
(a) GH (b) TSH
(c) Prolactin (PRL) (d) ACTH

Pg. 333, Para 2

27. Which of the below hormone stimulates the synthesis and secretion of
(a) GH (Grpwth hormone)
(b) TSH (Thyroid stimulating hormone)
(c) PRL (Prolactin)
(d) ACTH (Adrenocorticotropic hormone)

Pg. 333, Para 2

28. Which of the following hormone stimulates the synthesis and secretion of steroid hormones called glucocorticoids from the adrenal cortex?
(a) TSH (b) ACTH
(c) LH (d) FSH

Pg. 333, Para 2

29. ____ stimulates the synthesis and secretion of hormone called androgens from testis.
(a) FSH (b) ACTH
(c) LH= ICSH (d) GH

Pg. 333, Para 2

30. ____ induces ovulation of fully matured follicle (Graafian follicles) and maintains the corpus luteum, formed from the remnants of the Graafian follicles after ovulation.
(a) FSH (b) ACTH
(c) LH (d) GH

Pg. 333, Para 2

31. ____ stimulates the growth and development of ovarian follicles in females.
(a) FSH (b) LH
(c) PRL (d) TSH

Pg. 333, Para 2

32. Which of the following hormones of anterior pituitary together called gonadotrophins?
(a) LH and ACTH (b) FSH and LH
(c) TSH and PRL (d) MSH and LH

Pg. 333, Para 2

33. Over secretion of GH (growth hormone) in child leads to
(a) Dwarfism (b) Cretinism
(c) Gigantism (d) Tetany

Pg. 333, Para 2

34. Low secretion of GH in child leads to
(a) Pituitary dwarfism
(b) Gigantism
(c) Cretinism
(d) Tetany

Pg. 333, Para 2

35. ____ acts on the smooth muscles of our body and stimulate their contraction.
(a) LH (b) FSH
(c) Oxytocin (d) GH

Pg. 333, Para 2

36. In females, ____ stimulates a vigorous contraction of uterus at the time of child birth.
(a) LH (b) FSH
(c) Oxytocin (d) Relaxin

Pg. 333, Para 1

37. Which of the following hormone is known as antidiuretic hormone?
(a) Oxytocin
(b) Prolactin
(c) Luteinizing hormone
(d) Vasopressin

Pg. 334, Para 1

38. Diuresis is reduced by
(a) Oxytocin
(b) Prolactin
(c) Luteinizing hormone
(d) Vasopressin

Pg. 334, Para 1

39. ____ acts on melanocyte (melanin contains cells) and regulates the pigmentation of skin.

(a) LH (b) Melatonin

(c) MSH (d) TSH

Pg. 334, Para 1

40. Select the correct matching of a hormone, its source and function.

Hormone	Source	Function
(a) Oxytocin	Posterior pituitary	Increased loss of water through urine.
(b) Prolactin	Posterior pituitary	Regulates growth of mammary gland.
(c) GnRH	Hypothalamus	Stimulates secretion of gonadotropin from posterior pituitary.
(d) TSH	Anterior pituitary	Stimulates thyroid gland to secrete thyroid hormone.

Pg. 334, Para 1

41. Which of the following regulates the function of anterior pituitary?

(a) Pineal

(b) Direct neural regulation of hypothalamus.

(c) Hormones of hypothalamic neuron via hypothal-amo hypophyseal portal system.

(d) All the above

Pg. 334, Para 1

42. Select the correct statement from the following.

(A) Hypothalamus contains many nuclei which produces hormones.

(B) Posterior pituitary is under direct neural regulation of hypothalamus.

(C) Oxytocin and vasopressin are actually synthesized in hypothalamus and transported axonally to adenohypophysis.

(D) LH induces ovulation and destroys corpus luteum.

(a) A and B only (b) A and D only

(c) B and D only (d) C and D only

Pg. 333, Para 1

43. Select the incorrect statement from the following.

(a) Hypersecretion of GH leads to gigantism.

(b) ACTH stimulates synthesis and secretion of glucocorticoids from adrenal cortex.

(c) Oxytocin acts on skeletal muscles of our body and stimulates their contraction.

(d) ADH reduces loss of water through urine.

Pg. 333, Para 2

44. Pineal gland is located on

(a) Dorsal side of midbrain.

(b) Dorsal side of hindbrain.

(c) Dorsal side of forebrain.

(d) Vertical side of forebrain.

Pg. 334, Para 3

45. Pineal gland secretes ____ hormone.

(a) MSH (b) Melatonin

(c) FSH (d) Insulin

Pg. 334, Para 3

46. Melatonin influences

(a) Metabolism and pigmentation.

(b) Menstrual cycle

(c) Defence capability

(d) All of these

Pg. 334, Para 3

47. 24 hour diurnal rhythms of our body is maintained by

(a) Melatonin (b) Glucagon

(c) Thymosin (d) Oxytocin

Pg. 334, Para 3

48. Menstruation cycle is affected by the following hormones except

(a) Thyroid (b) Melatonin

(c) Oestrogen (d) Oxytocin

Pg. 334, Para 3

49. A thin flap of connective tissues connecting two lobes of thyroid is known as

(a) Lobes (b) Ileum

(c) Isthmus (d) Ampulla

Pg. 334, Para 4

50. Which of the following statement is incorrect about thyroid gland?

(a) It is composed of follicles and stromal tissues.

(b) It secretes tetraiodothyronine or thyroxin (T_4) and triiodothyronine (T_3), TCT.

(c) It consists of 4 lobes. 1

(d) It is stimulated by hormone TSH.

Pg. 334, Para 4

51. The enlargement of thyroid gland is called
(a) Hypothyroidism
(b) Hyperthyroidism
(c) Goitre
(d) Isthmus

Pg. 334, Para 4

52. Hypothyroidism during pregnancy causes defective development and maturation of growing baby leading to
(a) Addison's disease
(b) Cretinism
(c) Creatinin
(d) Tetany

Pg. 334, Para 4

53. Hypothyroidism is caused by
(a) Cancer of thyroid gland.
(b) Development of nodules in thyroid gland.
(c) Iodine deficiency
(d) Both (a) and (b)

Pg. 334, Para 4

54. Hypothyroidism causes
(a) Irregular menstrual cycle
(b) Reduced BMR
(c) Reduced production of RBC
(d) All of these

Pg. 335, Para 1

55. Thyroid gland secretes
(a) T_3 (b) T_4
(c) TCT (d) All 6f these

Pg. 334, Para 4

56. Thyroid controls the metabolism of
(a) Carbohydrates (b) Proteins
(c) Lipids (Fat) (d) All of these

Pg. 334, Para 1

57. A. Melatonin influences menstrual cycle and our defence capability.
B. In adult women, hypothyroidism may cause menstrual cycle to become irregular.
C. Protein hormone is secreted by thyroid and Thyro-calcitonin regulates the blood calcium level.
D. Maintenance of water and electrolyte balance is also influenced by the thyroid hormone.
E. Oxytocin causes milk ejection from mammary gland.
Select the correct statement:
(a) A, B and C only.
(b) A, B, C and E only.
(c) All except D.
(d) All statements are correct.

Pg. 334, 335

58. Which of the following hormones affect Ca^{2+} ion metabolism?
(a) TCT (Thyrocalcitonin)
(b) Parathyroid hormone (PTH)
(c) Both (a) and (b)
(d) Cortisol

Pg. 335, Para 5

59. PTH stands for
(a) Parathyroid hormone
(b) Prethyroid hormone
(c) Prothyroid hormone
(d) Pretectile hormone

Pg. 335, Para 4

60. PTH is
(a) Protein hormone
(b) Peptide hormone
(c) Biogenic amines
(d) Steroid

Pg. 335, Para 4

61.. The process by which PTH increases blood Ca^{2+} level except
(a) Acts on bones and stimulates the process of bone reabsorption/dissolution/ demineralizations.
(b) Reabsorption of Ca^{2+} by the renal tubules.
(c) Increases Ca^{2+} absorption from the digested food.
(d) Increases osteoblastic activity.

Pg. 335, Para 4

62. Which of the following is correct about thymus?
(a) Globular structure is located on the dorsal side of the heart and aorta.
(b) It plays minor role in the development of the immune system.
(c) Thymus size increases with age.
(d) Thymus does not affect the production of antibodies.

Pg. 335, Para 6

63. Thymosin is

(a) Peptide hormone

(b) Secreted by pituitary.

(c) Helps in RBC production.

(d) Decreases WBC production.

Pg. 335, Para 6

64. Which gland plays a major role in the differentiation of T lymphocyte?

(a) Thyroid (b) Thymus

(c) Adrenal (d) Gonads

Pg. 335, Para 6

65. Immune response of any old person is weak because

(a) Thymus is degenerated in an old individual.

(b) Thymus production decreases.

(c) Both (a) and (b)

(d) None of these

Pg. 335, Para 6

66. The position of Adrenal gland is

(a) Anterior part of each kidney.

(b) Posterior part of each kidney.

(c) Ventral part of each kidney.

(d) Dorsal part of each kidney.

Pg. 336, Para 1

67. The term 'Cortex' is used in

(a) Brain (b) Kidney

(c) Adrenal gland (d) All of these

Pg. 336, Para 1

68. The adrenal medulla secretes two hormones called adrenaline or epinephrine and nor-adrenaline or norepinephrine. These are commonly known as

(a) Steroids (b) Terpenes

(c) Catecholamines (d) Cytokinin

Pg. 336, Para 3

69. Emergency hormone and hormones of fight are

(a) Adrenalin (b) Noradrenaline

(c) Cortisol (d) Both (a) and (b)

Pg. 336, Para 3

70. A. Increase alertness

B. Pupillary constriction

C. Piloerection

D. Increases heart rate

E. Increases respiratory rate

F. Sweating

Which of the above are effects of adrenaline/ noradrenaline?

(a) All except C

(b) All except B and F

(c) All except B

(d) All except B, E and F

Pg. 336, Para 3

71. Catecholamine causes

(a) Glycogenolysis (b) Proteolysis

(c) Lipolysis (d) All of these

Pg. 336, Para 3

72. Glucocorticoid causes all except

(a) Proteolysis (b) Lipolysis

(c) Glycogenolysis (d) Gluconeogenesis

Pg. 337, Para 2

73. Histological adrenal cortex is divided into how many layers?

(a) 1 (b) 2

(c) 3 (d) 4

Pg. 337, Para 2

74. Which of the following layers are present in adrenal cortex from inner to outer?

(a) Zona reticularis, zona fasciculata and zona glo-merulosa.

(b) Zona fasciculata, zona glomerulosa and zona reticularis.

(c) Zona glomerulosa, zona reticularis and zona fasciculata.

(d) Zona glomerulosa, zona fasciculata and zona reticularis.

Pg. 337, Para 2

75. The adrenal cortex secrets many hormones commonly called

(a) Catecholamine (b) Peptides

(c) Corticoids (d) All of these

Pg. 337, Para 2

76. In our body, the main glucocorticoid is

(a) Adrenaline

(b) Aldosterone

(c) ADH

(d) Cortisol

Pg. 337, Para 2

77. In our body, the main mineral corticoid is
(a) Adrenaline (b) Aldosterone
(c) ADH (d) Cortisol
Pg. 337, Para 2

78. Which of the following is incorrect about glucocorticoids? f
(a) Inhibit cellular uptake and utilization of amino acids.
(b) Maintains cardiovascular system as well as kidney function.
(c) Anti-inflammatory and suppresses the immune response.
(d) Glucocorticoids stimulates gluconeogenesis, lipogenesis and proteolysis.
Pg. 337, Para 3

79. Which of the following are effects of Cortisol?
(a) Anti-inflammatory
(b) Immunosuppressant
(c) Increases RBC production
(d) All of these
Pg. 337, Para 3

80. Aldosterone causes all except
(a) Reabsorption of electrolyte and water from renal tubule.
(b) Excretion of K^+.
(c) Excretion of PO_4^{3-} ion.
(d) Absorption of K^+.
Pg. 337, Para 3

81. Aldosterone helps in the maintenance of
(a) Electrolyte and body fluid volume
(b) Osmotic pressure
(c) Blood pressure
(d) All of these
Pg. 337, Para 3

82. Androgenic steroids are also secreted by adrenal cortex and it causes
(a) Growth of axial hair.
(b) Growth of pubic hair.
(c) Growth of facial hair.
(d) All of these
Pg. 337, Para 3

83. Adrenal cortex secretes all except
(a) Cortisol (b) Aldosterone
(c) Androgenic steroid (d) Relaxin
Pg. 337, Para 3

84. 1 to 2 million Islets of Langerhans in a human pancreas represents per cent of the pancreatic tissue.
(a) 2-3 (b) 4-6
(c) 10 (d) 1-2
Pg. 337, Para 3

85. Islet of Langerhans consists of
(a) ∞ - cells (b) β cells
(c) δ-cells (d) All of these
Pg. 337, Para 4

86. The following are peptide hormones except
(a) Insulin (b) PTH
(c) Thymosin (d) T_4
Pg. 337, Para 4

87. A. Acts mainly on liver cells.
B. Stimulates glycogenolysis.
C. Stimulates gluconeogenesis.
D. Reduces glucose uptake and utilization.
Which of the following is correct about the action of glucagon from the above statements?
(a) A, B only (b) B, C only
(c) A,B,Conly (d) All of these
Pg. 337, Para 5

88. Which of the following statement is incorrect?
(a) Insulin and glucagon are peptide hormones.
(b) Insulin acts mainly on hepatocyte and adipocytes and enhance glucose uptake and utilization.
(c) Insulin stimulates glycogenic.
(d) Glucagon inhibits the process of gluconeogenesis.
Pg. 337, Para 6

89. The following are functions of insulin except
(a) Glycogenesis
(b) ↑glucose utilization by hepatocyte.
(c) ↑ glucose utilization by adipocyte.
(d) Gluconeogenesis
Pg. 337, Para 6

90. Diabetes mellitus is characterized by
(a) Ketonuria
(b) Glycosuria
(c) Prolonged hyperglycaemia
(d) All of these
Pg. 338, Para 2

91. Select the correct matching.

(a) Insulin — Decreases uptake of glucose utilization by hepatocyte and adipocytes.

(b) Cortisol — Decreases RBC production and causes inflammation.

(c) Thymosin — Promotes production of antibodies to provide humoral immunity also.

(d) Thyroxine —No role in water and electrolyte balance.

Pg. 335, 337

92. Select the incorrect matching.

(a) Zona fasciculata — Glucocorticoids

(b) α-cell — Glucagon

(c) β-cell —Insulin

(d) Follicular cells of thyroid—TCT

Pg. 335, 337

93. Testis act as the

(a) Primary sex organ

(b) Endocrine gland

(c) Both (a) and (b)

(d) None of these

Pg. 338, Para 3

94. Leydig cells or interstitial cells secrete

(a) Oestrogens (b) Progesterone

(c) Testosterone (d) Relaxin

Pg. 338, Para 3

95. Androgen/from the following are

(a) Oestrogens (b) Progesterone

(c) Testosterone (d) Relaxin

Pg. 338, Para 3

96. A. Anabolic effect on protein and carbohydrate metabolism.

B. Influences male sexual behaviour (libido).

C. Stimulate spermatogenesis.

D. Muscular growth, aggressiveness and low pitch voice.

Above are the functions of which of the hormone?

(a) Oestrogens (b) Progesterone

(c) Testosterone (d) Relaxin

Pg. 338, Para 4

97. Select the total number of male accessory sex organs from the following.

Epididymis, Vas deferens, Seminal vesicle, Prostate, Urethra

(a) 2 (b) 3

(c) 4 (d) 5

Pg. 338, Para 4

98. Androgen regulates the ____ of male accessory sex organ.

(a) Development

(b) Maturation

(c) Function

(d) All of these

Pg. 338, Para 4

99. Testis is composed of

(a) Uriniferous tubules

(b) Seminiferous tubules

(c) Nephron

(d) Neuron

Pg. 338, Para 3

100. Select the correct matching.

(a) Interstitial cells — Testosterone

(b) β-cells — Glucagon

(c) $\propto$ - cells — Insulin

(d) Follicular cells — TCT

Pg. 338, Para 3

101. Which one is correct about testis in human?

(a) Situated in scrotal sacs (outside the abdomen).

(b) Consists of seminiferous tubule and Leydig cells.

(c) Secretion effects male sexual behaviour (libido).

(d) All of these

Pg. 338, Para 4

102. ANF leads to

(a) Dilation of blood vessels

(b) Decreases blood pressure

(c) Both (a) and (b)

(d) Increases blood pressure

Pg. 339, Para 3

103. Match the following columns.

Column I (Production site)	**Column II** (Hormones)
(A) Atrial wall -	(1) ANF
(B) Thyroid gland -	(2) PTH
(C) Parathyroid -	(3) T_3, T_4, TCT
(D) GIT-	(4) CCK, GIP, gastrin and secretin

(a) A:2, B:4, C:1,D:3
(b) A:1,B:3,C:2,D:4
(c) A:4,B:2,C:3,D:1
(d) A:4,B:3,C:2,D:1

Pg. 334, Para 3, 5

104. Match the following columns.

Hormone	**Function**
(A) Gastrin	(1) Acts on exocrine pancreases and stimulates secretion of water and bicarbonate ion.
(B) Secretin	(2) Acts both on pancreases and gall bladder and stimulates secretion of pancreatic enzyme and bile juice, respectively.
(C) CCK cholccystokinin.	(3) Acts on gastric gland and stimulates secretion of HCl and pepsinogen.
(D) GIP (Gastric inhibitory peptide)	(4) Inhibit gastric secretion and motility.

(a) A:2,B:4,C:1,D:3 (b) A:l, B:3, C:2, D:4
(c) A:4,B:2,C:3,D:1 (d) A:4, B:3, C:2, D: 1

Pg. 339, Para 4

105. The ____ of kidney produces peptide hormone called ____ which stimulates erythropoiesis.
(a) Podocyte, Erythropoietin
(b) JG cells, Erythropoietin
(c) JG cells, Rennin
(d) JG cells, Renin

Pg. 339, Para 4

106. Select the incorrect statementfrom the following.
(a) GIT secretes four major peptide hormones.
(b) Several other non-endocrine tissues secrete hormones called growth factors.
(c) Hormone receptors are located in target tissues only.
(d) Hormone receptors are non-specific in nature.

Pg. 339, Para 5

107. Which of the following organs that are non-endocrine gland secretes hormones?
(a) Heart (b) Kidney
(c) GIT (d) All of these

Pg. 339, Para 3

108. Select the incorrect matching.

Hormone	target organ
(a) Secretin	- Pancreasc
(b) CCK	- Pancrease and gall bladder
(c) ANF	- Atrial wall
(d) Gastrin	- Gastric glands

Pg. 339, Para 5

109. Select the total number of peptide hormones from the following.
Erythropoietin, Gastrin, Secretin, GIP, CCK, Insulin, Glucagon, Thymosin, PTH, ANF.
(a) 8 (b) 7
(c) 9 (d) 10

Pg. 340, Para 1

110. Match the columns.

Column I	**Column II**
(A) Peptide, poly peptide protein hormones	(1) Epinephrine
(B) Steroid	(2) T 3 and T 4 (Thyroid hormones).
(C) Iodothyronines	(3) Cortisol, testosterone, estradiol, progesterone and aldosterone.
(D) Amino acid derivatives	(4) Pituitary hormones, pancreatic hormones and hypothalamic hormone.

(a) A:1,B:2,C:3, D:4
(b) A:4, B:3, C:2, D:l
(c) A:4,B:3,C:1,D:2
(d) A:l, B:4, C:3, D:2

Pg. 340, Para 1

111. Hormone receptors are located in target tissue only. Their position is

(a) In plasma membrane.

(b) In cytoplasm.

(c) In nucleus.

(d) Any of the above depending on the type of hormone.

Pg. 339, Para 6

112. Find out the correct statement from the following.

(1) Hormones interacting with membrane bound receptors normally do not enter the target cells.

(2) Iodothyronines have membrane bound receptors.

(3) Hormones which interact with intracellular receptors mostly regulate gene expression.

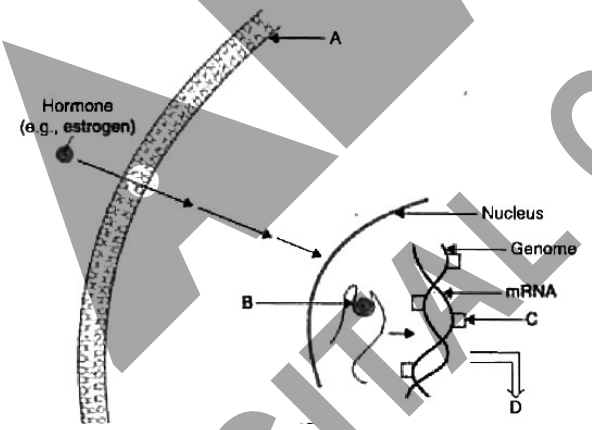
(4) Steroid hormones generate second messengers.

(a) 1 and 2 only (b) 2 and 3 only

(c) 1 and 3 only (d) 2 and 4 only

Pg. 340, Para 2

113. Identify A, B, C and D in the given figure.



(a) A: Physiological response, B: Proteins, C: Receptor-hormone complex, D: Uterine cell membrane.

(b) A: Receptor-hormone complex, B: Proteins, C: Uterine cell membrane, D: Physiological response.

(c) A: Uterine cell membrane, B: Receptor-hormone complex, C: Proteins, D: Physiological response.

(d) A: Proteins, B: Uterine cell membrane, C: Physiological response, D: Receptor-hormone complex.

Pg. 341, Fig. 22.5(b)

114. Find the total number of hormones from the following which binds to intracellular receptors.
Cortisol, Testosterone, T3, Glucagon, Oxytocin, FSH, Progesterone, ICSH, Oestrogen, GH.

(a) 4 (b) 5

(c) 6 (d) 7

Pg. 340, Para 2

115. Which of the following acts as secondary messenger?

(a) Ca^{2+} (b) IP_3

(c) cAMP (d)All

Pg. 340, Para 2

116. Which of the following hormones are iodothyronines?

(a) T_3 (b) T_4

(c) TCT (d) Both (a) and (b)

Pg. 340, Para 1

117. Which of the following is a steroid hormone?

(a) GH (b) Insulin

(c) Aldosterone (d) Epinephrine

Pg. 340, Para 1

118. Which of the following hormones does not act by a second messenger system?

(a) GH (b) Epinephrine

(c) ICSH (d) Oestrogen

Pg. 340, Para 2

119. Chemically epinephrine is

(a) Amino acid derivative

(b) Peptide hormone

(c) Steroid hormone

(d) Iodothyronines

Pg. 340, Para 1

120. Which hormone receptors are present in the cytoplasm of target cell?

(a) Thyroxin (b) Oestrogen

(c) Insulin (d) All of these

Pg. 340, Para 1

121. Arrange the correct working sequence of 'FSH'.

(1) Binding to membrane receptor.

(2) Biochemical response

(3) Generation of second messenger.

(4) Physiological response (Ovarian growth)

(a) $1 \rightarrow 2 \rightarrow 3 \rightarrow 4$

(b) $1 \rightarrow 3 \rightarrow 2 \rightarrow 4$

(c) $4 \rightarrow 3 \rightarrow 2 \rightarrow 1$

(d) $3 \rightarrow 1 \rightarrow 4 \rightarrow 2$

Pg. 340, Fig. 22.5

122. Which of the following hormone directly affects transcription by acting on gene?

(a) FSH (b) GH

(c) Oestrogen (d) CCK

Pg. 341, Fig. 22.5)b)

HUMAN REPRODUCTION

1. Humans are ____ and ____. organisms.
(a) Sexually reproducing, oviparous
(b) Asexually reproducing, ovoviviparous
(c) Asexually reproducing, viviparous
(d) Sexually reproducing, viviparous

Pg. 42, Para 1

2. The formation of gametes is termed as
(a) Gametogamy (b) Syngamy
(c) Gametogenesis (d) Gestation

Pg. 42, Para 1

3. The transfer of sperms into the female genital tract is called
(a) Insemination (b) Gametogenesis
(c) Fertilization (d) Gestation

Pg. 42, Para 1

4. The fusion of male and female gametes is known as
(a) Insemination (b) Fertilization
(c) Implantation (d) Parturition

Pg. 42, Para 1

5. Match the following correctly

Column-I	**Column-II**
1. Gestation	A. Fusion of male and female gametes
2. Parturition	B. Formation of gametes
3. Gametogenesis	C. Attachment to the uterine wall
4. Implantation	D. Delivery of the baby
	E. Embryonic development

(a) 1:A,2:C,3:B,4:D (c) 1:E,2:D,3:B,4:C
(b) 1:E,2:D,3:A,4:C (d) 1:C,2:D,3:A,4:C

Pg. 42, Para 1

6. The correct chronological order of the following events is
(a) Gametogenesis → Fertilization → Insemination → Gestation → Implantation → Parturition
(b) Gametogenesis → Insemination → Fertilization → Impanation → Parturition → Gestation
(c) Gametogenesis → Insemination → Fertilization → Implantation → Gestation → Parturition
(d) None of these

Pg. 42, Para 1

7. The following statements are true except
(a) In an individual, reproductive changes occur after puberty.
(b) Sperm formation occurs even in old men.
(c) Formation of ovum continues in women after fifty years.
(d) Humans are sexually producing and viviparous.

Pg. 42, Para 1

8. The testes are situated ____ the abdominal cavity within a pouch called ____.
(a) inside, testicular lobules
(b) outside, scrotum
(c) outside, vas deferens
(d) inside, scrotum

Pg. 43, Para 1

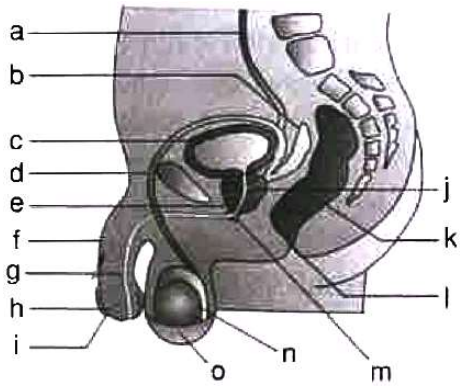
9. The scrotum helps in maintaining a temperature ____ lower than the internal body temperature.
(a) 1 to 1.5°C (b) 2 to 2.5°C
(c) 3 to 3.5°C (d) 4 to 4.5°C

Pg. 43, Para 1

10. An adult testes is oval in shape. Its width is about____ and length is about ____ respectively.
(a) 4 to 5 cm, 2 to 3 cm
(b) 2 to 5 cm, 1 to 3 cm
(c) 2 to 3 cm, 4 to 5 cm
(d) 2 to 5 cm, 4 to 7 cm

Pg. 43, Para 1

Figure given for questions 11 to 15.



11. What does 'm' represent?
(a) Ureter
(b) Ejaculatory duct
(c) Bulbourethral gland
(d) Urethra

Pg. 43, Fig. 3.1(a)

12. What is indicated by'd' in the figure?
(a) Urethra (b) Vas deferens
(c) Vasa efferentia (d) Ureter
Pg. 43, Fig. 3.1(a)

13. What does 'o' represent in the figure?
(a) Glans penis (b) Scrotum
(c) Testis (d) Epididy
Pg. 43, Fig. 3.1(a)

14. What is indicated by 'h' in the figure?
(a) Penis (b) Foreskin
(c) Glans penis (d) Urethral meatus
Pg. 43, Fig. 3.1(a)

15. What is indicated by 'b' in the figure?
(a) Prostate gland
(b) Bulbourethral gland
(c) Ureter
(d) Seminal vesicle
Pg. 43, Fig. 3.1(a)

16. An adult testes bears ____ compartments called testicular lobules.
(a) 150 (b) 250
(c) 350 (d) 500
Pg. 43, Para 1

17. Each testicular lobule contains ____ seminiferous tubule.
(a) Only three (b) Only one
(c) One to three (d) More than three
Pg. 43, Para 2

18. Male germ cells are known as
(a) Sperms (b) Spermatogonia
(c) Spermatid (d) Sertoli cells
Pg. 43, Para 2

19. Seminiferous tubules contain ____ cells for providing nutrition to sperm cells.
(a) Leydig cells (b) Interstitial cell
(c) Sertoli cells (d) Germ cells
Pg. 43, Para 2

20. The cells which secrete androgens are
(a) Spermatozoa (b) Interstitial cells
(c) Sertoli cells (d) Germ cells
Pg. 43, Para 2

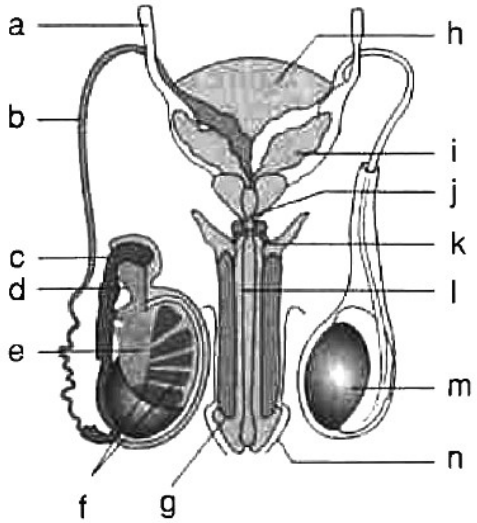
21. Select the correct anatomical sequence.
(a) Seminiferous tubules → Rete testis → Vasa efferentia → Vasa deferens → Epididymis
(b) Seminiferous tubules → Rete testis → Vasa efferentia → Epididymis → Vasa deferens
(c) Seminiferous tubules → Vasa efferentia → Rete testis → Vasa deferens → Epididymis
(d) None of these
Pg. 43, Para 2 & Para 3

22. The enlarged end of penis is known as
(a) Glans (b) Foreskin
(c) Urethra (d) Prostate
Pg. 44, Para 1

23. If A stands for seminal vesicles, B stands for bulbourethral glands, C stands for prostate gland, then which of the following is true?
(a) A and C occurs in pair
(b) A and B occur in pair
(c) B and C occur in pair
(d) None of these
Pg. 43, Fig. 3.1(b)

24. Seminal plasma is rich in which sugar?
(a) Sucrose (b) Glucose
(c) Fructose (d) Maltose
Pg. 44, Para 2

Figure given for questions 25 to 30.



25. What is indicated by 'e' in this figure?
(a) Testicular lobule
(b) Testis
(c) Vasa efferentia
(d) Rete testis
Pg. 43, Fig. 3.1(b)

26. What is indicated by 'c' in the figure?
(a) Vasa efferentia (b) Rete testis
(c) Epididymis (d) Vas deferens
Pg. 43, Fig. 3.1(b)

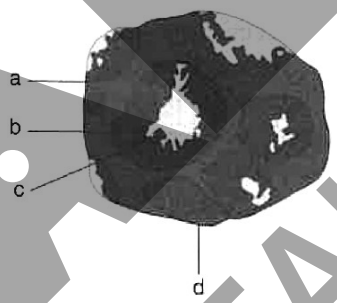
27. What is indicated by 'i' in the figure?
(a) Prostate (b) Urinary bladder
(c) Seminal vesicle (d) Bulbourethral gland
Pg. 43, Fig. 3.1(b)

28. What does 'k' represent?
(a) Prostate (b) Urinary bladder
(c) Seminal vesicle (d) Bulbourethral gland
Pg. 43, Fig. 3.1(b)

29. What is indicated by 'l' in the figure?
(a) Vas deferens (b) Ureter
(c) Urethra (d) Ejaculatory duct
Pg. 43, Fig. 3.1(b)

30. The secretion of which gland helps in the lubrication of penis?
(a) Seminal vesicle (b) Prostate
(c) Bulbourethral (d) Epididymis
Pg. 43, Fig. 3.1(b)

Figure given for questions 31 to 34.



31. What is indicated by 'a' in the figure?
(a) Sertoli cells (b) Interstitial cells
(c) Spermatogonia (d) Spermatozoa
Pg. 44, Fig. 3.2

32. What is indicated by 'c' in the figure?
(a) Spermatozoa (b) Spermatogonia
(c) Interstitial cells (d) Sertoli cells
Pg. 43, Fig. 3.2

33. What does 'b' in the figure represent?
(a) Interstitial cells
(b) Sertoli cells
(c) Spermatogonia
(d) Spermatozoa
Pg. 43, Fig. 3.2

34. What is indicated by'd' in the figure?
(a) Sertoli cells (b) Spermatozoa
(c) Spermatogonia (d) Interstitial cells
Pg. 43, Fig. 3.2

35. Which one of the following is not an accessory male duct in context of male reproductive system?
(a) Rete testis (b) Testes
(c) Epididymis (d) Vas deferens
Pg. 43, Para 3

36. Which one of the following is not a male sex accessory gland?
(a) Seminal vesicle (b) Epididymis
(c) Prostate (d) bulbourethral
Pg. 44, Para 2

37. In an adult, each testis is _____ in shape, with a length of about ____ and a width of about ____.
(a) round, 4 to 5 cm, 2 to 3 cm
(b) oval, 2 to 3 cm, 4 to 5 cm
(c) oval, 4 to 5 cm, 2 to 3 cm
(d) round, 2 to 3 cm, 4 to 5 cm
Pg. 43, Para 1

38. Each testis has how many testicular tubules?
(a) 200 (b) 250
(c) 300 (d) 150
Pg. 44, Para 2

39. Male sex accessory ducts include
(i) Rete testis (ii) Vasa efferentia
(iii) Epididymis (iv) Vas deferens
(a) i, ii (b) ii, iii
(c) i, ii, iii (d) i, ii, iii, iv
Pg. 44, Para 2

40. Which of the following duct stores sperm?
(a) Vasa efferentia (b) Rete testis
(c) Epididymis (d) All of these
Pg. 43, Para 3

41. Find the false statement.
(a) A pair of seminal vesicles is present in human males.
(b) A pair of prostates is present in human males.
(c) Glans penis is covered by a loose fold of skin called foreskin.
(d) Each fallopian tube is about 10 to 12 cm long in a human female.
Pg. 44, Para 3

42. Which is the primary female sex organ?
(a) Uterus (b) Ovaries
(c) Oviducts (d) Vagina
Pg. 44, Para 4

43. The ovaries are located
(a) One on each side of the upper abdomen
(b) Two on each side of the lower abdomen
(c) Two on each side of the upper abdomen
(d) One on each side of the lower abdomen
Pg. 44, Para 4

44. Which of the following statements about ovary is not true?
(a) Ovaries are responsible for the production of several steroid hormones.
(b) Each ovary is about 4 to 6 cm in length.
(c) Ovary is connected to the pelvic wall.
(d) Ovary produces female gamete (Ovum).
Pg. 44, Para 4

45. Ovarian stroma is enclosed by .
(a) Endothelium
(b) Epithelium
(c) Mesothelium
(d) Ciliated epithelium
Pg. 44, Para 4

46. The ovarian stroma is divided into zones
(a) Peripheral medulla and inner cortex
(b) Peripheral epithelia and inner endothelia
(c) Peripheral cortex and inner medulla
(d) Peripheral endothelia and inner epithelia
Pg. 44, Para 4

47. The tubes which conducts ovum to the uterus are known as
(a) Fallopian tube (b) Oviduct
(c) Cervical opening (d) Both (a) and (b)
Pg. 45, Para 1

48. Which one of the following is not a female accessory duct?
(a) Vagina (b) Uterus
(c) Oviduct (d) Ovary
Pg. 45, Para 1

49. Each oviduct is about long.
(a) 5 to 6 mm (b) 10 to 12 cm
(c) 10 to 12 mm (d) 5 to 6 cm
Pg. 45, Para 1

50. The funnel shaped part of fallopian tube which traps ovum is known as
(a) Isthmus (b) Ampulla
(c) Infundibulum (d) Cervix
Pg. 45, Para 1

51. Isthmus a part of oviduct, is a narrow lumen and joins
(a) Uterus (b) Ampulla
(c) Infundibulum (d) Both (a) and (b)
Pg. 46, Para 1

52. The anatomical structure which succeeds infundibulum is
(a) Isthmus (b) Ampulla
(c) Uterus (d) Ovary
Pg. 45&46, Para 1

53. Finger-like projection of infundibulum are known as
(a) Cilia (b) Flagella
(c) Fimbriae (d) None
Pg. 45, Para 1

44. Uterus is commonly known as
(a) Birth canal
(b) Womb
(c) Primary female sex organ
(d) Female external genitalia
Pg. 46, Para 2

55. The uterus opens into vagina through .
(a) Ampulla (b) Isthmus
(c) Cervix (d) Labia minora
Pg. 46, Para 1

56. Birth canal is formed by
(a) Cervical canal + Uterus
(b) Cervical canal + Vagina
(c) Cervical canal + Isthmus
(d) Cervical canal + Fallopian tube
Pg. 46, Para 1

57. The wall of uterus is made up of layers of tissue.
(a) 2 (b) 3
(c) 1 (d) 4
Pg. 46, Para 1

58. External thin membranous layer of uterus is known as
(a) Pleura (b) Pericardium
(c) Perimetrium (d) Periosteum
Pg. 46, Para 1

59. Thick muscular layer of muscle constitutes middle layer of uterus.
(a) Smooth (b) Striated
(c) Intercalated (d) Voluntary
Pg. 46, Para 1

60. Which layer of uterus undergoes cyclic changes during menstrual cycle?
(a) Mesoderm (b) Myometrium
(c) Endothelium (d) Endometrium
Pg. 46, Para 1

61. The layer of uterine tissues responsible for strong contractions during childbirth is
(a) Perimetrium (b) Mesometrium
(c) Mesoderm (d) Myocardium
Pg. 46, Para 1

62. Of the following statements, which one is true for Mons Pubis?
(a) It is the region of pubic hair growtli found in females as well as males.
(b) It is a cushion of proteins covered by skin and pubic hair.
(c) It is a cushion of fats covered by skin and pubic hair.
(d) It is a part of female internal genitalia.
Pg. 46, Para 2

63. Clitoris lies at the junction of
(a) Labia majora (b) Labia minora
(c) Mons pubis (d) Pubis symphysis
Pg. 46, Para 2

64. The clitoris is a tiny shaped structure which lies above the urethral opening
(a) Flagellated (b) Finger like
(c) Bean shaped (d) Pear
Pg. 46, Para 2

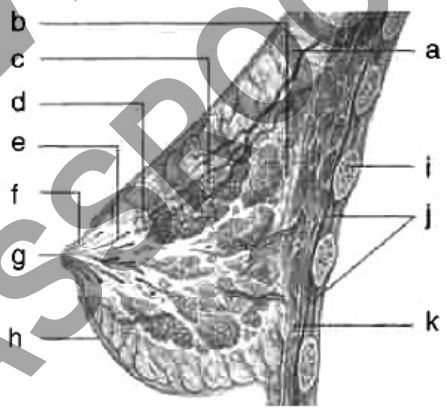
65. The only statement correct about hymen is
(a) It is an opening of cervix.
(b) It is a reliable indicator of virginity.
(c) It is always torn after first coitus.
(d) It can be broken by a sudden fall or jolt, insertion of vaginal tampon, cycling, etc.
Pg. 46, Para 2

66. Cluster of cells in mammary lobes is known as
(a) Mammary duct (b) Alveoli
(c) Ampulla (d) Lactiferous duct
Pg. 47, Para 1

67. The terminal structure of the mammary glands through which milk is sucked out is known as
(a) Lumen of alveoli
(b) Mammary duct
(c) Lactiferous duct
(d) Mammary lobe
Pg. 47, Para 1

68. Several mammary ducts join to form
(a) Mammary lobe
(b) Alveoli
(c) Mammary ampulla
(d) Lactiferous duct
Pg. 47, Para 1

Figure given for question 69 to 73.



69. What is indicated by 'h' in the figure?
(a) Nipple (b) Areola
(c) Laticiferous duct (d) Breast
Pg. 46, Fig. 3.4

70. What does 'e' represent in the figure?
(a) Laticiferous duct (b) Ampulla
(c) Mammary duct (d) Areola
Pg. 46, Fig. 3.4

71. What does 'a' represent in the figure ?
(a) Mammary alveolus
(b) Fat
(c) Proteins
(d) Laticiferous duct '
Pg. 46, Fig. 3.4

72. What is indicated by 'j' in the figure?
(a) Cartilage between ribs
(b) Ribs
(c) Sterum
(d) Muscles between ribs
Pg. 46, Fig. 3.4

73. What does 'k' represent in the figure?

(a) Pectoral girdle

(b) Rib cage

(c) Pectoralis major muscle

(d) Pectoralis minor muscle

Pg. 46, Fig. 3.4

74. Find out the incorrect statement about ovaries.

(a) Each ovary is connected to the pelvic wall and uterus by ligaments.

(b) The ovarian stroma is divided into two zones, i.e., a peripheral cortex and an inner medulla.

(c) Each ovary is covered by thick epithelium which encloses the ovarian stroma.

(d) Ovaries are the primary female sex organs.

Pg. 44, Para 4

75. The part of the fallopian tube closer to the ovary is

(a) Infundibulum (b) Ampulla

(c) Isthmus (d) Womb

Pg. 45, Para 1

76. Which facts about the uterus (in human females) is true?

(a) Single

(b) Also called womb

(c) Inverted pear shape

(d) All of these

Pg. 46, Para 2

77. Birth canal is formed by

(i) Uterus (ii) Cervix

(iii) Vagina

(a) i and ii (c) ii and iii

(b) i and iii (d) iii only

Pg. 46, Para 2

78. Which statement is true about the walls of the uterus?

(a) It has a thick membranous external wall called the perimetrium.

(b) It has a thin middle layer of smooth muscles called the myometrium.

(c) It has an inner glandular layer called the endometrium.

(d) All are true

Pg. 46, Para 2

79. The endometrium undergoes cyclical changes during the ____ cycle.

(a) Menstrual

(b) Oestrous

(c) Thermal

(d) None of these

Pg. 46, Para 2

80. The opening of vagina is often covered partially by

(a) Mons pubis (b) Labia majora

(c) Labia minora (d) Hymen

Pg. 46, Para 3

81. Which of the facts is true about clitoris?

(i) It is a tiny finger-like structure.

(ii) It lies at the upper junction of two labia minora.

(iii) It lies at the upper junction of two labia majora.

(iv) It lies above the utheral opening.

(v) It lies below the urethral opening.

(a) i, ii and iii (b) i, ii and v

(c) i, ii and iv (d) iii and v

Pg. 46, Para 2

82. Hymen can be torn or broken by

(i) First coitus

(ii) Sudden fall or jolt

(iii) Horse riding

(iv) Cycling

(v) Insertion of a vaginal tampon

(a) i, ii and iv only (b) iii, iv and v only

(c) i, iv and v only (d) All of these

Pg. 46, Para 2

83. Select the true statement.

(a) Presence of hymen is a reliable indicator of virginity.

(b) Absence of hymen is a reliable indicator of sexual experience.

(c) Presence of hymen is a reliable indicator of sexual experience.

(d) Presence or absence of hymen is not a reliable indicator of virginity.

Pg. 46, Para 2

84. Which is the correct path for the secretion and transport of milk in mammary gland?

(a) Alveoli → Cavity of alveoli → Mammary tubule → Mammary duct → Mammary ampulla → Lactiferous duct

(b) Mammary duct → Mammary tubule → Alveoli → Lactiferous duct → Mammary ampulla → Cavity of alveoli

(c) Mammary duct → Cavity of alveoli → Lactiferous duct → Mammary ampulla → Mammary tubule → Alveoli

(d) Alveoli → Mammary tubule → Mammary ampulla → Cavity of alveoli → Mammary duct → Lactiferous duct

Pg. 47, Para 1

85. Which fact about the mammary glands in humans is false?

(a) A non-functional mammary gland is the characteristic of all male mammals.

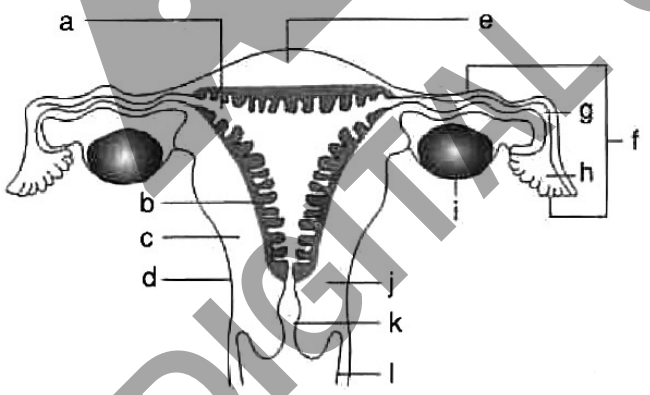
(b) Mammary glands are paired structures.

(c) It is a glandular tissue containing fixed amount of fat.

(d) Glandular tissue of each breast is divided into 15 to 20 mammary lobes containing clusters of cells called alveoli.

Pg. 47, Para 1

Figure given for question 86 to 91.



86. What is indicated by 'j' in the figure?

(a) Vagina (b) Cervical canal

(c) Cervix (d) Myometrium

Pg. 45, Fig. 3.3(b)

87. What does 'h' represent in the figure?

(a) Fimbrial (b) Infundibulum

(c) Isthmus (d) Ampulla

Pg. 45, Fig. 3.3(b)

88. In the figure, identify the structure 'f' which consists of 'g' and 'h'.

(a) Ovary (b) Fallopian tube

(c) Uterus (d) Cervix

Pg. 45, Fig. 3.3(b)

89. What does 'd' represent in the figure?

(a) Pericardium (b) Perimetrium

(c) Peritoneum (d) Epimetrium

Pg. 45, Fig. 3.3(b)

90. What is indicated by 'b' in the figure?

(a) Villi (b) Endothelium

(c) Endometrium (d) Epithelium

Pg. 45, Fig. 3.3(b)

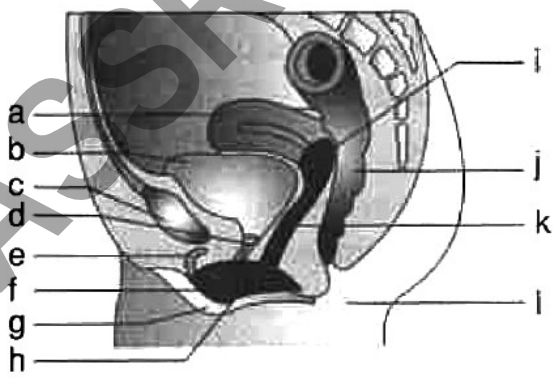
91. What does 'e' represent in the figure?

(a) Uterus (b) Isthmus

(c) Uterine fundus (d) Uterine ampulla

Pg. 45, Fig. 3.3(b)

Figure given for question 92 to 96.



92. What is indicated by 'c' in the figure?

(a) Urethra (b) Ovary

(c) Clitoris (d) Public symphysis

Pg. 45, Fig. 3.3(a)

93. What does 'f represent in the figure?

(a) Clitoris (b) Labia majora

(c) Labia minora (d) Urethra

Pg. 45, Fig. 3.3(a)

94. What is indicated by 'k' in the figure?

(a) Ovary (b) Cervix

(c) Vagina (d) Urethra

Pg. 45, Fig. 3.3(a)

95. What is indicated by 'b' in the figure?

(a) Uterus

(b) Vagina

(c) Public symphysis

(d) Urinary bladder

Pg. 45, Fig. 3.3(a)

96. What does 'd' represent in the figure?

(a) Vagina (b) Clitoris

(c) Urethra (d) Cervix

Pg. 45, Fig. 3.3(a)

97. Immature male germ cells are known as

(a) Spermatid (b) Spermatozoa

(c) Spermatogonia (d) Sperm

Pg. 47, Para 2

98. Spermatogonium undergoes ____.

(a) Reduction division

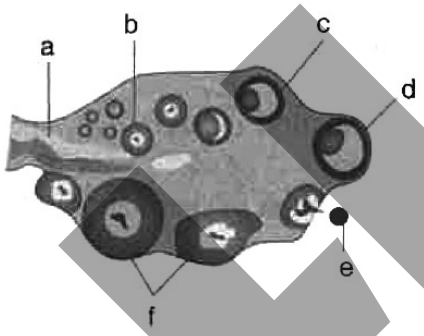
(b) Meiotic division

(c) Mitotic division

(d) None of these

Pg. 47, Para 2

Figure given for question 99 to 102.



99. What does 'a' represent in the figure?

(a) Lymph vessels (b) Blood vessels

(c) Nerve fibres (d) Ligament

Pg. 49, Fig. 3.7

100. What is indicated by 'c' in the figure?

(a) Primary follicle (b) Second follicle

(c) Tertiary follicle (d) Graafian follicle

Pg. 49, Fig. 3.7

101. What does 'f' represent in the figure?

(a) Antrum

(b) Corpus luteum

(c) Corpora cavernosa

(d) Ovum

Pg. 49, Fig. 3.7

102. What does 'e' represent in the figure?

(a) Ovum

(b) Oogonium

(c) Mature follicle

(d) Zona pellucida

Pg. 49, Fig. 3.7

103. Each spermatogonium is ____ and has ____ number of chromosomes,

(a) n,45 (b) 2n, 23

(c) 2n,46 (d) n, 46

Pg. 49, Fig. 3.7

104. The spermatogonia which undergo meiosis are known as

(a) Sperm

(b) Spermatid

(c) Secondary spermatocyte

(d) Primary spermatocyte

Pg. 47, Para 2

105. The difference between primary and secondary spermatocyte lies in ____.

(a) Presence/absence of a tail

(b) Number of chromosomes

(c) Being hormone producing/non-hormone producing

(d) Primary gamete/secondary gamete in males

Pg. 47, Para 2

106. Secondary spermatocytes give rise to

(a) Diploid spermatids

(b) Haploid sperm

(c) Diploid sperm

(d) Haploid spermatid

Pg. 47, Para 2

107. Sperms are synonymous with

(a) Spermatid

(b) Spermatogonia

(c) Primary spermatocyte

(d) Spermatozoa

Pg. 47, Para 2

108. Spermiogenesis is

(a) Transformation of sperm into spermatids.

(b) Transformation of spermatogonia into primary spermatocyte.

(c) Transformation of secondary spermatocyte into spermatids.

(d) Transformation of spermatid into spermatozoa.

Pg. 47, Para 2

109. After spermiogenesis, the sperm head is embedded in the ____ cells.
(a) Sertoli (b) Leydig
(c) Interstitial (d) Both (a) and (b)
Pg. 47, Para 2

110. The release of sperms from seminiferous tubules is known as ____.
(a) Ejaculation (b) Copulation
(c) Spermiation (d) None of these
Pg. 47, Para 2

111. Spermatogenesis starts at puberty due to the secretion of
(a) Luteinizing hormone
(b) Gonadotropin releasing hormone
(c) Follicle stimulating Hormone
(d) Testosterone
Pg. 47, Para 3

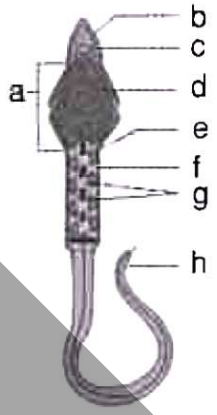
112. Luteinizing hormone (LH) acts on ____ cells and stimulates synthesis and secretion of ____.
(a) Leydig cells, FSH
(b) Interstitial cells, androgens
(c) Leydig cells, GnRH
(d) None of these
Pg. 47, Para 3

113. Androgens stimulate .
(a) Spermiation (b) Insemination
(c) Spermatogenesis (d) Oogenesis
Pg. 47, Para 3

114. The function of FSH in male is
(a) Act on leydig cells and stimulates secretion of factors responsible for spermiation.
(b) Act on Sertoli cells and stimulates secretion of factors responsible for spermatogenesis.
(c) Act on interstitial cells and stimulates secretion of factors responsible for spermiogenesis.
(d) Act on Sertoli cells and stimulates secretion of factors responsible for spermiogenesis.
Pg. 47, Para 3

115. The microscopic structure of sperm consists of
(a) Head Neck, Tail
(b) Head Neck, Middle piece, Tail
(c) Head, Middle piece, Tail
(d) Neck, Middle piece, Tail
Pg. 48, Para 2

Figure given for question 116 to 119.



116. What is indicated by 'c' in the figure?
(a) Ascosome (b) Acrosome
(c) Nucleosome (d) Hyaluronidase
Pg. 48, Fig. 3.6

117. What does 'd' represent in the figure?
(a) Nucleosome (b) Acrosome
(c) Nucleus (d) Hyaluronidase
Pg. 48, Fig. 3.6

118. What does 'g' represent in the figure?
(a) Middle piece (b) Mitochondria
(c) Neck (d) Tali
Pg. 48, Fig. 3.6

119. What is indicated by 'b' in the figure?
(a) Plasma membrane
(b) Nuclear membrane
(c) Acrosome
(d) Hyaluronidase
Pg. 48, Fig. 3.6

120. The sperm head contains:
(a) Antherosome (b) Acrosome
(c) Arthosome (d) Ascosome
Pg. 48, Para 2

121. The function of acrosome is
(a) Stimulates synthesis of ovum
(b) Stimulates release of ovum
(c) Stimulates fertilization of ovum
(d) Stimulates degradation of ovum
Pg. 48, Para 2

122. The middle piece of sperm contains cell organelles like
(a) Filaments (b) Mitochondria
(c) Nucleus (d) Ribosomes
Pg. 48, Para 2

123. How many sperm cells are there in an average human ejaculation?
(a) 200 to 300 billion
(b) 200 to 300 million
(c) 200 to 300 trillion
(d) 200 to 300 lacs
Pg. 48, Para 2

124. For a normal male fertility, which of the following statements is correct?
(a) 60 per cent sperm must have normal motility and 40 per cent must have normal shape.
(b) 60 per cent sperm must have normal shape and 40 per cent must have acrosome.
(c) 60 per cent sperm must have normal shape and 40 per cent must have vigorous motility.
(d) None of these
Pg. 48, Para 2

125. Semen consists of
(a) Seminal plasma + Spermatid
(b) Seminal plasma + Spermatozoa
(c) Seminal plasma + Spermatogonia
(d) None of these
Pg. 48, Para 3

126. The process of formation of mature female gamete is known as
(a) Gametogenesis
(b) Spermatogenis
(c) Oogenesis
(d) Morphogenesis
Pg. 48, Para 4

127. Oogenesis initiates after/at
(a) Fertilization
(b) Puberty
(c) Embryonic development
(d) Time of birth
Pg. 48, Para 4

128. Each female ovary consists of
(a) Millions of ova
(b) Millions of primary oocytes
(c) Millions of oogonia
(d) Millions of secondary oocytes
Pg. 48, Para 4

129. The primary oocytes are in which stage of cell division?
(a) Prophase I of mitotic division
(b) Prophase I of meiotic division
(c) Prophase II of meiotic division
(d) Prophase II of mitotic division
Pg. 48, Para 4

130. From the period of birth till puberty, which cells degenerate in ovary?
(a) Oogonia
(b) Ova
(c) Secondary follicle
(d) Primary follicle
Pg. 48, Para 4

131. The primary and secondary follicle are surrounded by cells known as
(a) Granulosa (b) Mucosa
(c) Serosa (d) Granuloma
Pg. 48, Para 4

132. The tertiary follicle in ovary is characterized by the presence of
(a) Fundus (b) Antrum
(c) Vacuole (d) Cavity
Pg. 48, Para 4

133. The mature tertiary follicle is also known as
(a) Ovum (b) Oogonia
(c) Graafian follicle (d) Polar body
Pg. 48, Para 1

134. The membrane around Graafian follicle is known as
(a) Zona fasciculata (b) Zona reticularis
(c) Zona externa (d) Zona pellucida
Pg. 48, Para 1

135. Spermatogonia is
(a) Immature male germ cells
(b) Mature male germ cells
(c) Immature male gamete
(d) Mature male gamete
Pg. 47, Para 2

136. The spermatids are transformed into spermatozoa (sperm) by the process called
(a) Spermatogenesis (b) Spermiogenesis
(c) Spermiation (d) Capacitation
Pg. 47, Para 2

137. Select the correct sequence:
(a) GnRH → LH → Leydig cells → Androgens → Spermatogenesis
(b) GnRH → FSH → Sertoli cells → Some factors → Spermiogenesis
(c) Both are correct
(d) Both are incorrect

Pg. 47, Para 2

138. Acrosome is a modified
(a) Golgibody (b) ER
(c) Vacuole (d) Ribosome

Pg. 48, Para 2

139. Antrum is present in
(a) Primary follicle
(b) Secondary follicle
(c) Tertiary follicle
(d) All of these

Pg. 48, Para 2

140. Primary oocyte grows in size and completes its first meiotic division inside the
(a) Primary follicle
(b) Secondary follicle
(c) Tertiary follicle
(d) All of these

Pg. 48, Para 5

141. Which of the following undergoes unequal division?
(a) Primary oocyte
(b) Pollen grain of angiosperm
(c) Yeast cell during bud formation
(d) All the above

Pg. 48, Para 5

142. Secondary oocyte develops zona pellucida around it in the .
(a) Primary follicle (b) Secondary follicle
(c) Tertiary follicle (d) Graafian follicle

Pg. 49, Para 1

143. The ploidy of spermatogonia, primary spermatocyte, secondary spermatocyte and spermatid is
(a) 2n, 2n, 2n, n (b) n, 2n, 2n, n
(c) n, 2n, n, n (d) 2n, 2n, n, n

Pg. 47, Para 2

144. The first menstruation which begins at puberty is called
(a) Menstrual cycle (b) Menarche
(c) Oogenesis (d) Ovulation

Pg. 49, Para 2

145. An average interval of menstrual cycle in females is about ____ days.
(a) 15/16 (b) 30/31
(c) 28/29 (d) 25/26

Pg. 49, Para 2

146. One ovum is released during the ____ of each menstrual cycle.
(a) Initial (b) Middle
(c) Terminal (d) Alternative

Pg. 49, Para 2

147. The menstrual flow in menstrual cycle lasts for about
(a) 6 to 7 days (b) Almost 7 days
(c) 3 to 5 days (d) 1 to 2 days

Pg. 50, Para 1

148. Lack of menstruation may be indicative of
(a) Pregnancy (b) Routine work stress
(c) Poor health (d) All of these

Pg. 50, Para 1

149. In females, gonadotropins attain a peak level at about ____ day of the menstrual cycle.
(a) 15th (b) 14th
(c) 28th (d) 29th

Pg. 51, Para 1

150. LH surge causes
(a) Rupture of graafian follicle
(b) Release of ovum
(c) Endometrial shedding
(d) Both (a) and (b)

Pg. 51, Para 1

151. The ovulation phase is followed by____ phase.
(a) Gestation (b) Luteal
(c) Menstrual (d) Oogenesis

Pg. 51, Para 1

152. After ovulation, Graafian follicle transforms into
(a) Corpus cavernosa
(b) Corpus pellucida
(c) Corpus luteum
(d) Corpus metrium

Pg. 51, Para 1

153. Large amounts of progesterone is secreted by
(a) Corpus germinativum
(b) Corpus luteum
(c) Corpus cavernosa
(d) Corpus pellucida

Pg. 51, Para 1

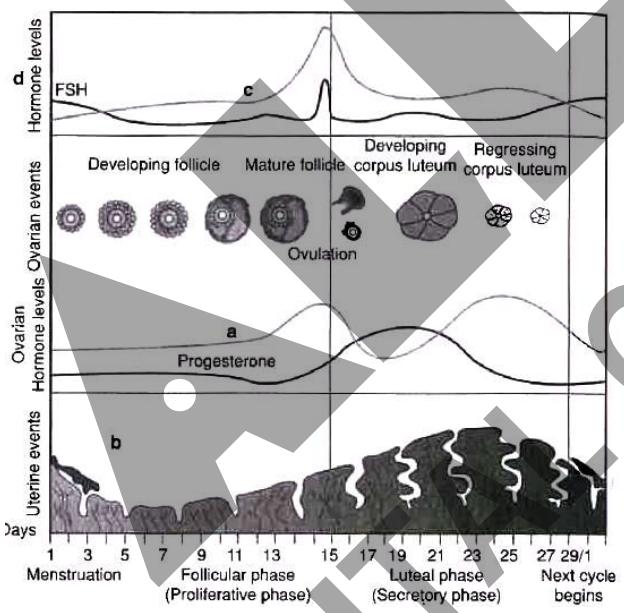
154. If fertilization does not occur corpus luteum ____.
(a) Proliferates (b) Degenerates
(c) Regenerates (d) Divides

Pg. 51, Para 1

155. The stage in human female when menstrual cycle ceases at the age of 50 is known as
(a) Ovopause (b) Menarche
(c) Menopause (d) Menstruation

Pg. 51, Para 1

Figure given for question 156 to 159.



156. What does 'b' represent?
(a) LH (b) Pituitary
(c) Menses (d) Ovarian

Fig. 39

157. What is indicated by 'd' in the "figure?
(a) Estrogen (b) Pituitary
(c) LH (d) Menses

Fig. 39

158. What does 'c' represent in the figure?
(a) LH (b) Pituitary
(c) Menses (d) Ovarian

Fig. 39

159. What is indicated by 'a' in the figure?
(a) Oestrogen (b) Menses
(c) Pituitary (d) Progesterone

Fig. 39

160. How many ovum(s)is/are released in one menstruation?
(a) 1 (b) 2
(c) 3 (d) 4

Fig. 39

161. Which of the facts is true about menstruation?
(a) It occurs only when the released ovum is not fertilized.
(b) It occurs due to the breakdown of endometrial lining.
(c) Menstrual flow lasts for 3 to 5 days.
(d) All the above

Pg. 50, Para 1

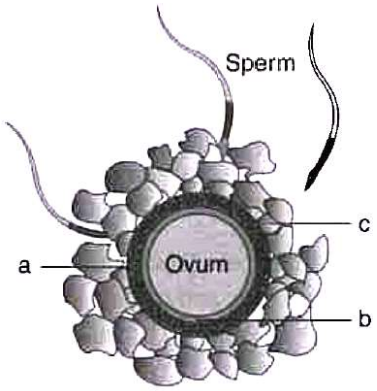
162. Menopausal age in human being is
(a) 45 years (b) 55 years
(c) 50 years (d) 60 years

Pg. 51, Para 1

163. The time required to convert primary follicle into mature follicle is
(a) 4 days (b) 9 to 11 days
(c) 18 to 20 days (d) 2 days

Pg. 50, Fig. 3.9

Figure given for question 164 to 166.



164. What is indicated by 'b' in the figure?
(a) Ovum
(b) Cells of corona radiata
(c) Perivitelline space
(d) Zona pellucida

Pg. 51,Fig. 3.10

165. What does 'a' represent in the figure?

(a) Cells of corona radiata

(b) Sperm

(c) Perivitelline space

(d) Zona pellucida

Pg. 51,Fig. 3.10

166. What does 'c' represent in the figure?

(a) Cells of corona radiata

(b) Sperm

(c) Perivitelline space

(d) Zona pellucida

Pg. 51,Fig. 3.10

167. The Graafian follicles release

(a) Secondary oocyte

(b) Primary oocyte

(c) Ovum

(d) Both (a) and (b)

Pg. 49 Para 1

168. The release of ovum from ovary is known as

(a) Ovulation (b) Oogenesis

(c) Parturition (d) Gametogenesis

Pg. 49 Para 1

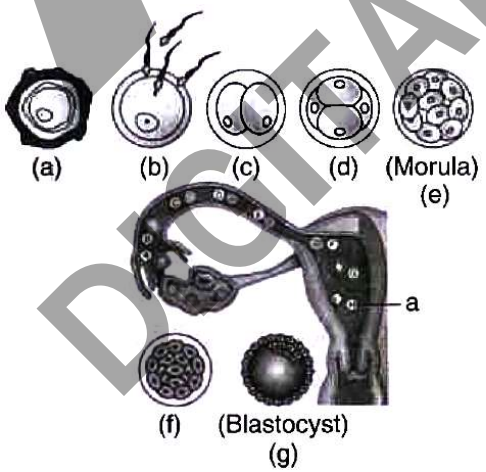
169. Total number of polar bodies formed in oogenesis?

(a) 2 (b) 1

(c) 3 (d) 0

Pg. 49, Fig. 38

170. What does 'a' represent in this figure?



(a) Blastocyst

(b) Blastocyst implantation

(c) Morula

(d) Cells

Pg. 52, Fig. 3.11

171. Once the sperm is injected into the female genital tract, which place is primarily concerned with meeting of sperm with ovum?

(a) Uterus

(b) Ampulla

(c) Isthmies

(d) cervi

Pg. 51, Para 2

172. All copulations do not lead to pregnancy. The most appropriate reason to support this statement is

(a) The ovum and sperm should be transported randomly to ampullary-isthmic junction.

(b) The ovum and sperm should be continuously transported to ampullary-isthmic junction.

(c) The ovum and sperm should be simultaneously transported to ampullary-isthmic junction.

(d) None of these

Pg. 51, Para 2

173. The sperm comes into contact with the ____ layer of ovum to cause fertilization.

(a) Corona radiata

(b) Perivitelline layer

(c) Zona pellucida

(d) Zona fasciculata

Pg. 51, Para 3

174. Once a sperm fuses with an ovum, the remaining sperms cannot fertilize ovum. What changes are responsible for such phenomenon?

(a) Selective permeation through ovum.

(b) Specific spatial arrangement of corona radiata cells.

(c) Change in the membrane zona pellucida.

(d) Ovum releases toxic substances thereby killing other sperms.

Pg. 51, Para 3

175. After entry of sperm into cytoplasm of ovum which of the following event takes place?

(a) Mitotic division of secondary oocyte

(b) Meiotic division of primary oocyte

(c) Mitotic division of secondary oocyte

(d) Meiotic division of secondary oocyte

Pg. 52, Para 1

176. The human female has which of the following sex chromosome pattern?
(a) XX (b) YY
(c) XY (d) XYX
Pg. 52, Para 2

177. The human male has which of the following sex chromosome pattern?
(a) XYX (b) XY
(c) XX (d) YY
Pg. 52, Para 2

178. Female produces only
(a) One type of gamete Y
(b) One type of gamete X
(c) Either X or Y type of gamete
(d) All of these
Pg. 52, Para 2

179. Scientifically, sex of the baby is determined by
(a) Only mother
(b) Only father
(c) Either mother or father
(d) Gestational phase
Pg. 52, Para 2

180. After formation of zygote, it cleaves into 2, 4, 8, 16 daughter cells called
(a) Blastocyst (b) Morula
(c) Trophoblast (d) Blastomere
Pg. 52, Para 3

181. The embryo with 2^3 or 4^2 blastomeres is known as
(a) Blastocyst (b) Morula
(c) Trophoblast (d) Zygote
Pg. 52, 53, Para 3 & Para 1

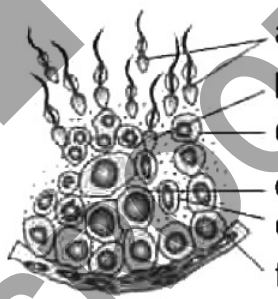
182. Morula divides and transforms into
(a) Inner cell mass
(b) Blastocyst
(c) Trophoblast
(d) Blastomere
Pg. 53, Para 1

183. The outer layer of blastocyst is known as
(a) Zona pellucida
(b) Trophoblast
(c) Blastomere
(d) Corona radiata
Pg. 53, Para 1

184. Which layer of blastocyst gets attached to the endometrium during implantation?
(a) Trophoblast (b) Blastomere
(c) Inner cell mass (d) Morula
Pg. 53, Para 1

185. The inner cell mass of blastocyst develops into
(a) Morula (b) Trophoblast
(c) Embryo (d) Zygote
Pg. 53, Para 1

Figure given for question 186 to 189.



186. What does 'f' represent in the figure?
(a) Sertoli cells (b) Spermatogonium
(c) Spermatid (d) Primary spermatocyte
Pg. 47, Fig. 3.5

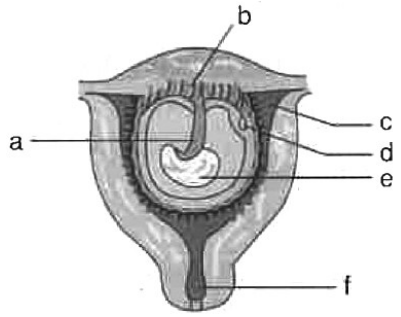
187. What is indicated by 'e' in the figure?
(a) Sertoli cells (b) Spermatogonium
(c) Spermatid (d) Primary spermatocyte
Pg. 47, Fig. 3.5

188. What does 'd' represent in the figure?
(a) Sertoli cells (b) Spermatogonium
(c) Spermatid (d) Primary spermatocyte
Pg. 47, Fig. 3.5

189. What is indicated by 'a' in the figure?
(a) Spermatid
(b) Spermatozoa
(c) Secondary spermatocyte
(d) Primary spermatocyte
Pg. 47, Fig. 3.5

190. Stem cells which have the potential to produce all types of cells, tissues and organs are present in
(a) Ectoderm (b) Inner cell mass
(c) Trophoblast (d) Endoderm
Pg. 53, Para 1

Figure given for question 191 to 194.



191. What is indicated by 'e' in the figure?
(a) Yolk sac (b) Embryo
(c) Cavity of uterus (d) Placental villi
Pg. 53, Fig. 3.12

192. What does 'a' represent in the figure?
(a) Umbilical cord (b) Embryo
(c) Yolk sac (d) Placental villi
Pg. 53, Fig. 3.12

193. What does 'd' represent in the figure?
(a) Embryo (b) Umbilical cord
(c) Yolk sac (d) Cavity of uterus
Pg. 53, Fig. 3.12

194. What does 'b' represent in the figure?
(a) Cavity of uterus (b) Embryo
(c) Yolk sac (d) Placental villi
Pg. 53, Fig. 3.12

195. After implantation the finger-like projection which appears on the trophoblast are known as
(a) Intestinal villi (b) Ampullary villi
(c) Chorionic villi (d) Amniotic villi
Pg. 53, Para 2

196. After implantation the finger-like projections on the trophoblast are surrounded by
(a) Uterine tissue (b) Maternal blood
(c) Both (a) and (b) (d) Either (a) and (b)
Pg. 53, Para 2

197. The structural and functional unit between the foetus and maternal blood is known as
(a) Inner cell (b) Placenta
(c) Trophoblast (d) Chorionic villi
Pg. 53, Para 2

198. Placenta does not perform which of the following function?
(a) Supply of O_2
(b) Supply of excretory materials
(c) Supply of nutrients
(d) Removal of CO_2
Pg. 53, Para 3

199. The placenta is connected to embryo through ____ cord.
(a) Chorionic (b) Umbilical
(c) Amniocentic (d) Uterine
Pg. 53, Para 3

200. Placenta also acts as a/an tissue.
(a) Endocrine (b) Exocrine
(c) Paracrine (d) Mepacrine
Pg. 53, Para 3

201. Which of the following hormone is released by placenta?
(a) FSH (b)HCG
(c) Relaxin (d) LH
Pg. 53, Para 3

202. How many germinal layers does embryo consist of initially, after implantation?
(a) 3 (b) 2
(c) 4 (d) 5
Pg. 54, Para 1

203. In human embryonic development, which layer develops between the ectoderm and endoderm?
(a) Mesothelium (b) Mesoderm
(c) Myoderm (d) Myometrium
Pg. 54, Para 1

204. The average time span of human gestation is
(a) 8 months (b) 9 months
(c) 10 months (d) 1 year
Pg. 54, Para 2

205. The pregnancy phase in humans is divided into how many trimesters?
(a) 2 (b) 4
(c) 3 (d) 5
Pg. 54, Para 2

206. After one month of pregnancy which vital organ is formed in the foetus?
(a) Brain (b) Heart
(c) Lungs (d) Liver
Pg. 54, Para 2

207. In a developing foetus, most of the major organ systems are developed by the end of ___weeks.
(a) 14 (b) 12 .
(c) 10 (d) 16
Pg. 54, Para 2

208. Foetal limbs and digits are formed in the ____ month of embryonic development.

(a) 4th (b) 2nd

(c) 3rd (d) 7th

Pg. 54, Para 2

209. The second trimester of human pregnancy is characterized by

(a) Appearance of heart and aorta

(b) Appearance of external genital organs

(c) Appearance of fine hair, eye-lashes on the eye-lids

(d) Appearance of limbs and digits

Pg. 54, Para 2

210. The scientific name of childbirth is

(a) Gestation (b) Parturition

(c) Implantation (d) Foetal development

Pg. 54, Para 3

211. During parturition, the mild uterine contractions which lead to expulsion of the foetus is known as

(a) Foetal ejection release

(b) Foetal ejection reflex

(c) Foetal uterine reflex

(d) Foetal placental reflex

Pg. 54, Para 3

212. Which hormone is responsible for severe uterine contractions during parturition?

(a) Oestrogen (b) Oxytocin

(c) Progesterone (d) Relaxin

Pg. 54, Para 3

213. After the delivery of the foetus which of the following structure is also expelled out?

(a) Uterus (b) Corpus luteum

(c) Placenta (d) Ovary

Pg. 54, Para 3

214. The production of milk in mammary gland occurs

(a) During parturition

(b) After parturition

(c) Before embryogenesis

(d) At the end of pregnancy

Pg. 54, Para 4

215. The milk produced during the initial days of lactation is called

(a) Menstrum (b) Colostrum

(c) Gynostrum (d) None of these

Pg. 54, Para 4

216. Fertilization takes place at

(a) Isthmus

(b) Ampulla

(c) Infundibulum

(d) Ampullary-isthmic junction

Pg. 51, Para 2

217. Which part of the sperm helps in penetration into the ovum?

(a) Mitochondria (b) Acrosome

(c) Tail (d) All of these

Pg. 54, Para 3

218. Second meiotic division in secondary oocyte is

(a) Unequal

(b) Complete after sperm penetration

(c) Both (a) and (b)

(d) Equal

Pg. 48, Para 5

219. The embryo with 8 to 16 blastomeres is called

(a) Blastula (b) Gastrula

(c) Morula (d) None of these

Pg. 52, Para 5

220. Implantation leads to

(a) Formation of trophoblast in blastocyst

(b) Formation of inner cell mass in blastocyst

(c) Pregnancy

(d) All the above

Pg. 53, Para 1

221. Which of these hormones is/are produced in women during pregnancy?

(a) HCG (b)HPL

(c) Relaxin (d) All of these

Pg. 53, Para 3

222. Which of these statements is incorrect about embryo development?

(a) After one month of pregnancy the heart is formed.

(b) By the end of first trimester most of the major organ systems are formed.

(c) First movement of foetus is observed in the seventh month.

(d) At the end of second trimester, the body is covered with fine hair, eyelids separate and eye lashes are formed.

Pg. 54, Para 2

223. The process of delivery of foetus is called

(a) Parturition (b) Gestation

(c) Ejaculation (d) Capacitation

Pg. 54, Para 3

224. Which one of the following is the most likely root cause why menstruation is not taking place in regularly cycling human female?

(a) maintenance of the hypertrophical endometrial lining

(b) maintenance of high concentration of sex hormones in the blood stream

(c) retention of well-developed corpus luteum

(d) fertilization of the ovum

Pg. 50, Para 1

225. The correct sequence of spermatogenetic stages leading to the formation of sperms in a mature human testes is

(a) spermatogonia - spermatocyte - spermatid - sperms

(b) spermatid - spermatocyte - spermatogonia - sperms

(c) spermatogonia - spermatid - spermatocyte - sperms

(d) spermatocyte - spermatogonia - spermatid - sperms

Pg. 49, Fig. 3.8

226. Which one of the following is correct matching of process occurring during menstrual cycle?

(a) Proliferative phase: Rapid regeneration of myometrium and maturation of Graafian follicle.

(b) Development of: Secretory phase and increased secretion of progesterone.

(c) Menstruation: breakdown of myometrium and ovum not fertilized.

(d) Ovulation: LH and FSH attain peak level and sharp fall in the secretion of progesterone.

Pg. 50, 51, Para 1

227. Seminal plasma in humans is rich in

(a) Fructose and calcium but has no enzymes

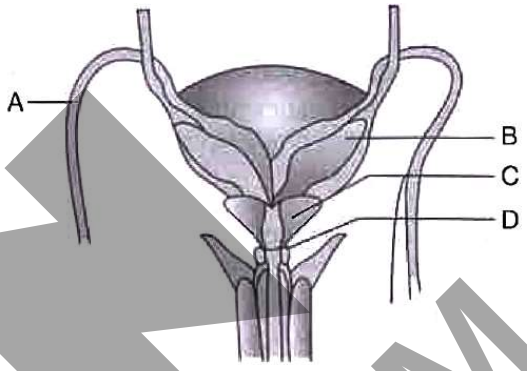
(b) Glucose and certain enzymes but has no calcium

(c) Fructose and certain enzymes but poor in calcium

(d) Fructose, calcium and certain enzymes

Pg. 44, Para 2

228. Given below is a diagrammatic sketch of a portion of human male reproductive system. Select the correct set of names of the parts labelled A, B, C, D



(a) A: Vas deferens, B: Seminal vesicle, C: Prostate, D: Bulbourethral gland

(b) A: Vas deferens, B: Seminal vesicle, C: Bulbourethral gland, D: Prostate

(c) A: Ureter, B: Seminal vesicle, C: Prostate, D: Bulbourethral gland

(d) A: Ureter, B: Prostate, C: Seminal vesicle, D: Bulbourethral gland

Pg. 43, Fig. 3.1

229. Which one of the following statements is incorrect about menstruation?

(a) At menopause in female, there is especially abrupt increase in gonadotropic hormones.

(b) The beginning of the cycle of menstruation is called menarche.

(c) During normal menstruation, about 40 ml blood is lost.

(d) The menstrual fluid can easily clot.

Pg. 50, 51, Para 1

230. In human adult females oxytocin

(a) stimulates pituitary to secrete vasopressin

(b) causes strong uterine contractions during parturition

(c) is secreted by anterior pituitary

(d) stimulates growth of mammary glands

Pg. 54, Para 3

231. In humans, at the end of the first meiotic division, the male germ cells differentiate into the

(a) Spermatids

(b) Spermatozonia

(c) Primary spermatocytes

(d) Secondary spermatocytes

Pg. 47, Para 2

232. Withdrawal of which of the following hormones is the immediate cause of menstruation?

(a) FSH (b) FSH-RH

(c) Progesterone (d) Estrogen

Pg. 50, Fig. 3.9

233. If mammalian ovum fails to get fertilized which one of the following is unlikely?

(a) Corpus luteum will disintegrate

(b) Progesterone secretion rapidly declines

(c) Estrogen secretion further decreases

(d) Primary follicle starts developing

Pg. 51, Para 1

234. Ovulation in the human female normally takes place during the menstrual cycle

(a) at the mid secretory phase

(b) just before the end of the secretory phase

(c) at the beginning of the proliferative phase

(d) at the end of the proliferative phase

Pg. 49, Last 4th Para 1

235. The mammalian corpus luteum produces

(a) estrogen

(b) progesteron

(c) luteotropic hormone

(d) luteinizing hormone

Pg. 51, Para 1

236. In 28-day human ovarian cycle, ovulation occurs on

(a) Day (b) Day 5

(c) Day 14 (d) Day 28

Pg. 49, 50, Last 4th, Para 1

237. At the end of first meiotic division, male sperm differentiates into

(a) Secondary spermatocyte

(b) Primary spermatocyte

(c) Spermatogonium

(d) Spermatid

Pg. 49, Fig. 3.8(a)

238. Extrusion of second polar body from egg nucleus occurs

(a) After entry of sperm before completion of] fertilization

(b) After completion of fertilization

(c) Before entry of sperm

(d) Without any relation of sperm entry

Pg. 52, Para 1

239. Location and secretion of Leydig's cells are

(a) Liver - cholesterol

(b) Ovary- estrogen

(c) Testes - testosterone

(d) Pancreas - glucagon

Pg. 47, Para 3

240. How many sperms are formed from a secondary spermatocyte?

(a) 4 (b) 8

(c) 2 (d) 1

Pg. 49, Fig. 3.8(a)

241. Egg is liberated from ovary in

(a) Secondary oocyte stage

(b) Primary oocyte stage

(c) Oogonial stage

(d) Mature ovum stage

Pg. 52, Para 1

242. Choose the incorrect statement from the following:

(a) In birds and mammals internal fertilization takes place.

(b) Colostrum contains antibodies and nutrients.

(c) Polyspermy in mammals is prevented by the chemical changes in the egg surface.

(d) In humans, female implantation occurs almost seven days after fertilization.

Mixed

243. Identify the correct statement from the following:

(a) High levels of oestrogen triggers the ovulatory surge.

(b) Oogonial cells start to proliferate and give rise to functional ova in regular cycles from puberty onwards.

(c) Sperms released from seminiferous tubules are highly motile.

(d) Progesterone level is high during the post ovulatory phase of menstrual cycle.

Pg. 51, Para 1

244. Spot the odd one out from the following structures with reference to the male reproductive system.

(a) Rete testis (b) Epididymis

(c) Vasa efferentia (d) Isthmus

Pg. 43, Para 3

245. Seminal plasma, the fluid part of semen, is contributed by

i. Seminal vesicle

ii. Prostate

iii. Urethra

iv. Bulbourethral gland

(a) i and ii (b) i, ii and iv

(c) ii, iii and iv (d) i and iv

Pg. 44, Para 2

246. Mature Graafian follicle is generally present in the ovary of a healthy human female around

(a) 5 to 8 days of menstrual cycle

(b) 11 to 17 days of menstrual cycle

(c) 18 to 23 days of menstrual cycle

(d) 24 to 28 days of menstrual cycle

Pg. 49, Para 1

247. Acrosomal reaction of the sperm occurs due to

(a) Its contact with zona pellucida of the ova.

(b) Reactions within the uterine environment of the female.

(c) Reactions within the epididymal environment of the male.

(d) Androgens produced in the uterus.

Pg. 51, Para 3

248. Which one of the following is not a male accessory gland?

(a) Seminal vesicle

(b) Ampulla

(c) Prostate

(d) Bulbourethral gland

Pg. 44, Para 2

249. The immature male germ cell undergoes division to produce sperms by the process of spermatogenesis. Choose the correct option from below with reference to the above statement.

(a) Spermatogonia have 46 chromosomes and always undergo meiotic cell division.

(b) Primary spermatocytes divide by mitotic cell division.

(c) Secondary spermatocytes have 23 chromosomes and undergo second meiotic division.

(d) Spermatozoa are transformed into spermatids.

Fig. 3.8 a

250. Match between the following representing parts of the sperm and their functions and choose the correct option.

Column A	**Column B**
A. Head	i. Enzymes
B. Middle piece	ii. Sperm motility
C. Acrosome	iii. Energy
D. Tail	iv. Genetic material

(a) A-ii, B-iv, C-i, D-iii

(b) A-iv, B-iii, C-i, D-ii

(c) A-iv, B-i, C-ii, D-iii

(d) A-ii, B-i, C-iii, D-iv

Pg. 48, Para 2

251. Which among the following has 23 chromosomes?

(a) Spermatogonia

(b) Zygote

(c) Secondary oocyte

(d) Oogonia

Pg. 49, Fig. 3.8

252. Match the following and choose the correct options:

Column A	**Column B**
A. Trophoblast	i. Embedding of blastocyst in the endometrium
B. Cleavage	ii. Group of cells that would differentiate as embryo
C. Inner cell mass	iii. Outer layer of blastocyst attached to the endometrium
D. Implantation	iv. Mitotic division of zygote

(a) A-ii, B-i, C-iii, D-iv

(b) A-iii, B-iv, C-ii, D-i

(c) A-iii, B-i, C-ii, D-iv

(d) A-ii, B-iv, C-iii, D-i

Pg. 52, Para 1

253. Which of the following hormones is not secreted by human placenta?

(a) hCG (b) Oestrogens

(c) Progesterone (d) LH

Pg. 53, Para 2

254. The vas deferens receives duct from the seminal vesicle and opens into urethra as
(a) Epididymis (b) Ejaculatory duct
(c) Efferent ductule (d) Ureter
Pg. 43, Para 3

255. Urethral meatus refers to the
(a) Urinogenital duct
(b) Opening of vas deferens into urethra
(c) External opening of the urinogenital duct
(d) Muscles surrounding the urino genial duct
Pg. 43, Para 3

256. Morula is a developmental stage
(a) Between the zygote and blastocyst
(b) Between the blastocyst and gastrula
(c) After the implantation
(d) Between implantation and parturition
Pg. 53, Para 1

257. The membranous cover of the ovum at ovulation is
(a) Corona radiata (b) Zona radiata
(c) Zona pellucida (d) Chorion
Pg. 49, Para 1

258. Identify the odd one from the following:
(a) Labia minora (b) Fimbriae
(c) Infundibulum (d) Isthmus
Pg. 45, Para 1

HUMAN REPRODUCTION

1. Humans are _____ and _____. organisms.
(a) Sexually reproducing, oviparous
(b) Asexually reproducing, ovoviviparous
(c) Asexually reproducing, viviparous
(d) Sexually reproducing, viviparous

Pg. 42, Para 1

2. The formation of gametes is termed as
(a) Gametogamy (b) Syngamy
(c) Gametogenesis (d) Gestation

Pg. 42, Para 1

3. The transfer of sperms into the female genital tract is called
(a) Insemination (b) Gametogenesis
(c) Fertilization (d) Gestation

Pg. 42, Para 1

4. The fusion of male and female gametes is known as
(a) Insemination (b) Fertilization
(c) Implantation (d) Parturition

Pg. 42, Para 1

5. Match the following correctly

Column-I	**Column-II**
1. Gestation	A. Fusion of male and female gametes
2. Parturition	B. Formation of gametes
3. Gametogenesis	C. Attachment to the uterine wall
4. Implantation	D. Delivery of the baby
	E. Embryonic development

(a) 1:A,2:C,3:B,4:D (c) 1:E,2:D,3:B,4:C
(b) 1:E,2:D,3:A,4:C (d) 1:C,2:D,3:A,4:C

Pg. 42, Para 1

6. The correct chronological order of the following events is
(a) Gametogenesis → Fertilization → Insemination → Gestation → Implantation → Parturition
(b) Gametogenesis → Insemination → Fertilization → Impanation → Parturition → Gestation
(c) Gametogenesis → Insemination → Fertilization → Implantation → Gestation → Parturition
(d) None of these

Pg. 42, Para 1

7. The following statements are true except
(a) In an individual, reproductive changes occur after puberty.
(b) Sperm formation occurs even in old men.
(c) Formation of ovum continues in women after fifty years.
(d) Humans are sexually producing and viviparous.

Pg. 42, Para 1

8. The testes are situated _____ the abdominal cavity within a pouch called _____.
(a) inside, testicular lobules
(b) outside, scrotum
(c) outside, vas deferens
(d) inside, scrotum

Pg. 43, Para 1

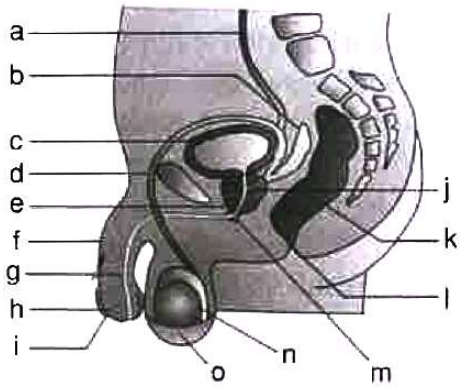
9. The scrotum helps in maintaining a temperature _____ lower than the internal body temperature.
(a) 1 to 1.5°C (b) 2 to 2.5°C
(c) 3 to 3.5°C (d) 4 to 4.5°C

Pg. 43, Para 1

10. An adult testes is oval in shape. Its width is about_____ and length is about _____ respectively.
(a) 4 to 5 cm, 2 to 3 cm
(b) 2 to 5 cm, 1 to 3 cm
(c) 2 to 3 cm, 4 to 5 cm
(d) 2 to 5 cm, 4 to 7 cm

Pg. 43, Para 1

Figure given for questions 11 to 15.



11. What does 'm' represent?
(a) Ureter
(b) Ejaculatory duct
(c) Bulbourethral gland
(d) Urethra

Pg. 43, Fig. 3.1(a)

12. What is indicated by'd' in the figure?

(a) Urethra (b) Vas deferens

(c) Vasa efferentia (d) Ureter

Pg. 43, Fig. 3.1(a)

13. What does 'o' represent in the figure?

(a) Glans penis (b) Scrotum

(c) Testis (d) Epididy

Pg. 43, Fig. 3.1(a)

14. What is indicated by 'h' in the figure?

(a) Penis (b) Foreskin

(c) Glans penis (d) Urethral meatus

Pg. 43, Fig. 3.1(a)

15. What is indicated by 'b' in the figure?

(a) Prostate gland

(b) Bulbourethral gland

(c) Ureter

(d) Seminal vesicle

Pg. 43, Fig. 3.1(a)

16. An adult testes bears ____ compartments called testicular lobules.

(a) 150 (b) 250

(c) 350 (d) 500

Pg. 43, Para 1

17. Each testicular lobule contains ____ seminiferous tubule.

(a) Only three (b) Only one

(c) One to three (d) More than three

Pg. 43, Para 2

18. Male germ cells are known as

(a) Sperms (b) Spermatogonia

(c) Spermatid (d) Sertoli cells

Pg. 43, Para 2

19. Seminiferous tubules contain ____ cells for providing nutrition to sperm cells.

(a) Leydig cells (b) Interstitial cell

(c) Sertoli cells (d) Germ cells

Pg. 43, Para 2

20. The cells which secrete androgens are

(a) Spermatozoa (b) Interstitial cells

(c) Sertoli cells (d) Germ cells

Pg. 43, Para 2

21. Select the correct anatomical sequence.

(a) Seminiferous tubules → Rete testis → Vasa efferentia → Vasa deferens → Epididymis

(b) Seminiferous tubules → Rete testis → Vasa efferentia → Epididymis → Vasa deferens

(c) Seminiferous tubules → Vasa efferentia → Rete testis → Vasa deferens → Epididymis

(d) None of these

Pg. 43, Para 2 & Para 3

22. The enlarged end of penis is known as

(a) Glans (b) Foreskin

(c) Urethra (d) Prostate

Pg. 44, Para 1

23. If A stands for seminal vesicles, B stands for bulbourethral glands, C stands for prostate gland, then which of the following is true?

(a) A and C occurs in pair

(b) A and B occur in pair

(c) B and C occur in pair

(d) None of these

Pg. 43, Fig. 3.1(b)

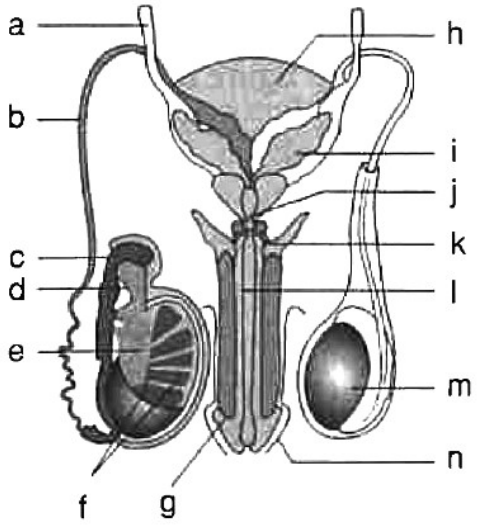
24. Seminal plasma is rich in which sugar?

(a) Sucrose (b) Glucose

(c) Fructose (d) Maltose

Pg. 44, Para 2

Figure given for questions 25 to 30.



25. What is indicated by 'e' in this figure?

(a) Testicular lobule (b) Testis

(c) Vasa efferentia (d) Rete testis

Pg. 43, Fig. 3.1(b)

26. What is indicated by 'c' in the figure?
(a) Vasa efferentia (b) Rete testis
(c) Epididymis (d) Vas deferens
Pg. 43, Fig. 3.1(b)

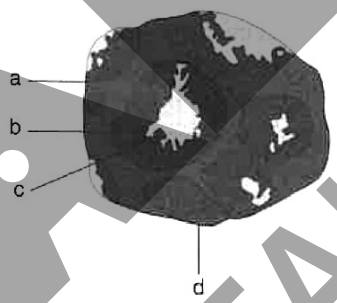
27. What is indicated by 'i' in the figure?
(a) Prostate (b) Urinary bladder
(c) Seminal vesicle (d) Bulbourethral gland
Pg. 43, Fig. 3.1(b)

28. What does 'k' represent?
(a) Prostate (b) Urinary bladder
(c) Seminal vesicle (d) Bulbourethral gland
Pg. 43, Fig. 3.1(b)

29. What is indicated by 'l' in the figure?
(a) Vas deferens (b) Ureter
(c) Urethra (d) Ejaculatory duct
Pg. 43, Fig. 3.1(b)

30. The secretion of which gland helps in the lubrication of penis?
(a) Seminal vesicle (b) Prostate
(c) Bulbourethral (d) Epididymis
Pg. 43, Fig. 3.1(b)

Figure given for questions 31 to 34.



31. What is indicated by 'a' in the figure?
(a) Sertoli cells (b) Interstitial cells
(c) Spermatogonia (d) Spermatozoa
Pg. 44, Fig. 3.2

32. What is indicated by 'c' in the figure?
(a) Spermatozoa (b) Spermatogonia
(c) Interstitial cells (d) Sertoli cells
Pg. 43, Fig. 3.2

33. What does 'b' in the figure represent?
(a) Interstitial cells
(b) Sertoli cells
(c) Spermatogonia
(d) Spermatozoa
Pg. 43, Fig. 3.2

34. What is indicated by'd' in the figure?
(a) Sertoli cells (b) Spermatozoa
(c) Spermatogonia (d) Interstitial cells
Pg. 43, Fig. 3.2

35. Which one of the following is not an accessory male duct in context of male reproductive system?
(a) Rete testis (b) Testes
(c) Epididymis (d) Vas deferens
Pg. 43, Para 3

36. Which one of the following is not a male sex accessory gland?
(a) Seminal vesicle (b) Epididymis
(c) Prostate (d) bulbourethral
Pg. 44, Para 2

37. In an adult, each testis is _____ in shape, with a length of about ____ and a width of about ____.
(a) round, 4 to 5 cm, 2 to 3 cm
(b) oval, 2 to 3 cm, 4 to 5 cm
(c) oval, 4 to 5 cm, 2 to 3 cm
(d) round, 2 to 3 cm, 4 to 5 cm
Pg. 43, Para 1

38. Each testis has how many testicular tubules?
(a) 200 (b) 250
(c) 300 (d) 150
Pg. 44, Para 2

39. Male sex accessory ducts include
(i) Rete testis (ii) Vasa efferentia
(iii) Epididymis (iv) Vas deferens
(a) i, ii (b) ii, iii
(c) i, ii, iii (d) i, ii, iii, iv
Pg. 44, Para 2

40. Which of the following duct stores sperm?
(a) Vasa efferentia (b) Rete testis
(c) Epididymis (d) All of these
Pg. 43, Para 3

41. Find the false statement.
(a) A pair of seminal vesicles is present in human males.
(b) A pair of prostates is present in human males.
(c) Glans penis is covered by a loose fold of skin called foreskin.
(d) Each fallopian tube is about 10 to 12 cm long in a human female.
Pg. 44, Para 3

42. Which is the primary female sex organ?
(a) Uterus (b) Ovaries
(c) Oviducts (d) Vagina
Pg. 44, Para 4

43. The ovaries are located
(a) One on each side of the upper abdomen
(b) Two on each side of the lower abdomen
(c) Two on each side of the upper abdomen
(d) One on each side of the lower abdomen
Pg. 44, Para 4

44. Which of the following statements about ovary is not true?
(a) Ovaries are responsible for the production of several steroid hormones.
(b) Each ovary is about 4 to 6 cm in length.
(c) Ovary is connected to the pelvic wall.
(d) Ovary produces female gamete (Ovum).
Pg. 44, Para 4

45. Ovarian stroma is enclosed by .
(a) Endothelium
(b) Epithelium
(c) Mesothelium
(d) Ciliated epithelium
Pg. 44, Para 4

46. The ovarian stroma is divided into zones
(a) Peripheral medulla and inner cortex
(b) Peripheral epithelia and inner endothelia
(c) Peripheral cortex and inner medulla
(d) Peripheral endothelia and inner epithelia
Pg. 44, Para 4

47. The tubes which conducts ovum to the uterus are known as
(a) Fallopian tube (b) Oviduct
(c) Cervical opening (d) Both (a) and (b)
Pg. 45, Para 1

48. Which one of the following is not a female accessory duct?
(a) Vagina (b) Uterus
(c) Oviduct (d) Ovary
Pg. 45, Para 1

49. Each oviduct is about long.
(a) 5 to 6 mm (b) 10 to 12 cm
(c) 10 to 12 mm (d) 5 to 6 cm
Pg. 45, Para 1

50. The funnel shaped part of fallopian tube which traps ovum is known as
(a) Isthmus (b) Ampulla
(c) Infundibulum (d) Cervix
Pg. 45, Para 1

51. Isthmus a part of oviduct, is a narrow lumen and joins
(a) Uterus (b) Ampulla
(c) Infundibulum (d) Both (a) and (b)
Pg. 46, Para 1

52. The anatomical structure which succeeds infundibulum is
(a) Isthmus (b) Ampulla
(c) Uterus (d) Ovary
Pg. 45&46, Para 1

53. Finger-like projection of infundibulum are known as
(a) Cilia (b) Flagella
(c) Fimbriae (d) None
Pg. 45, Para 1

54. Uterus is commonly known as
(a) Birth canal
(b) Womb
(c) Primary female sex organ
(d) Female external genitalia
Pg. 46, Para 2

55. The uterus opens into vagina through .
(a) Ampulla (b) Isthmus
(c) Cervix (d) Labia minora
Pg. 46, Para 1

56. Birth canal is formed by
(a) Cervical canal + Uterus
(b) Cervical canal + Vagina
(c) Cervical canal + Isthmus
(d) Cervical canal + Fallopian tube
Pg. 46, Para 1

57. The wall of uterus is made up of layers of tissue.
(a) 2 (b) 3
(c) 1 (d) 4
Pg. 46, Para 1

58. External thin membranous layer of uterus is known as
(a) Pleura (b) Pericardium
(c) Perimetrium (d) Periosteum
Pg. 46, Para 1

59. Thick muscular layer of muscle constitutes middle layer of uterus.
(a) Smooth (b) Striated
(c) Intercalated (d) Voluntary
Pg. 46, Para 1

60. Which layer of uterus undergoes cyclic changes during menstrual cycle?
(a) Mesoderm (b) Myometrium
(c) Endothelium (d) Endometrium
Pg. 46, Para 1

61. The layer of uterine tissues responsible for strong contractions during childbirth is
(a) Perimetrium (b) Mesometrium
(c) Mesoderm (d) Myocardium
Pg. 46, Para 1

62. Of the following statements, which one is true for Mons Pubis?
(a) It is the region of pubic hair growtli found in females as well as males.
(b) It is a cushion of proteins covered by skin and pubic hair.
(c) It is a cushion of fats covered by skin and pubic hair.
(d) It is a part of female internal genitalia.
Pg. 46, Para 2

63. Clitoris lies at the junction of
(a) Labia majora (b) Labia minora
(c) Mons pubis (d) Pubis symphysis
Pg. 46, Para 2

64. The clitoris is a tiny shaped structure which lies above the urethral opening
(a) Flagellated (b) Finger like
(c) Bean shaped (d) Pear
Pg. 46, Para 2

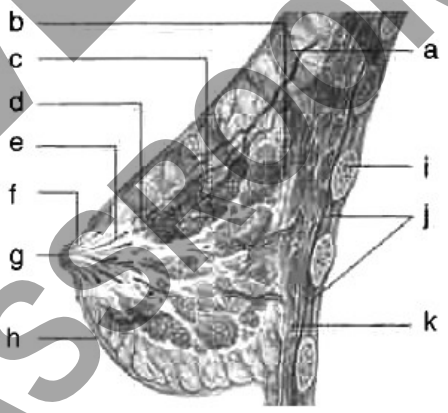
65. The only statement correct about hymen is
(a) It is an opening of cervix.
(b) It is a reliable indicator of virginity.
(c) It is always torn after first coitus.
(d) It can be broken by a sudden fall or jolt, insertion of vaginal tampon, cycling, etc.
Pg. 46, Para 2

66. Cluster of cells in mammary lobes is known as
(a) Mammary duct (b) Alveoli
(c) Ampulla (d) Lactiferous duct
Pg. 47, Para 1

67. The terminal structure of the mammary glands through which milk is sucked out is known as
(a) Lumen of alveoli (b) Mammary duct
(c) Lactiferous duct (d) Mammary lobe
Pg. 47, Para 1

68. Several mammary ducts join to form
(a) Mammary lobe
(b) Alveoli
(c) Mammary ampulla
(d) Lactiferous duct
Pg. 47, Para 1

Figure given for question 69 to 73.



69. What is indicated by 'h' in the figure?
(a) Nipple (b) Areola
(c) Laticiferous duct (d) Breast
Pg. 46, Fig. 3.4

70. What does 'e' represent in the figure?
(a) Laticiferous duct (b) Ampulla
(c) Mammary duct (d) Areola
Pg. 46, Fig. 3.4

71. What does 'a' represent in the figure ?
(a) Mammary alveolus
(b) Fat
(c) Proteins
(d) Laticiferous duct '
Pg. 46, Fig. 3.4

72. What is indicated by 'j' in the figure?
(a) Cartilage between ribs
(b) Ribs
(c) Sterum
(d) Muscles between ribs
Pg. 46, Fig. 3.4

73. What does 'k' represent in the figure?

(a) Pectoral girdle

(b) Rib cage

(c) Pectoralis major muscle

(d) Pectoralis minor muscle

Pg. 46, Fig. 3.4

74. Find out the incorrect statement about ovaries.

(a) Each ovary is connected to the pelvic wall and uterus by ligaments.

(b) The ovarian stroma is divided into two zones, i.e., a peripheral cortex and an inner medulla.

(c) Each ovary is covered by thick epithelium which encloses the ovarian stroma.

(d) Ovaries are the primary female sex organs.

Pg. 44, Para 4

75. The part of the fallopian tube closer to the ovary is

(a) Infundibulum (b) Ampulla

(c) Isthmus (d) Womb

Pg. 45, Para 1

76. Which facts about the uterus (in human females) is true?

(a) Single

(b) Also called womb

(c) Inverted pear shape

(d) All of these

Pg. 46, Para 2

77. Birth canal is formed by

(i) Uterus (ii) Cervix

(iii) Vagina

(a) i and ii (c) ii and iii

(b) i and iii (d) iii only

Pg. 46, Para 2

78. Which statement is true about the walls of the uterus?

(a) It has a thick membranous external wall called the perimetrium.

(b) It has a thin middle layer of smooth muscles called the myometrium.

(c) It has an inner glandular layer called the endometrium.

(d) All are true

Pg. 46, Para 2

79. The endometrium undergoes cyclical changes during the ____ cycle.

(a) Menstrual (b) Oestrous

(c) Thermal (d) None of these

Pg. 46, Para 2

80. The opening of vagina is often covered partially by

(a) Mons pubis (b) Labia majora

(c) Labia minora (d) Hymen

Pg. 46, Para 3

81. Which of the facts is true about clitoris?

(i) It is a tiny finger-like structure.

(ii) It lies at the upper junction of two labia minora.

(iii) It lies at the upper junction of two labia majora.

(iv) It lies above the utheral opening.

(v) It lies below the urethral opening.

(a) i, ii and iii (b) i, ii and v

(c) i, ii and iv (d) iii and v

Pg. 46, Para 2

82. Hymen can be torn or broken by

(i) First coitus

(ii) Sudden fall or jolt

(iii) Horse riding

(iv) Cycling

(v) Insertion of a vaginal tampon

(a) i, ii and iv only (b) iii, iv and v only

(c) i, iv and v only (d) All of these

Pg. 46, Para 2

83. Select the true statement.

(a) Presence of hymen is a reliable indicator of virginity.

(b) Absence of hymen is a reliable indicator of sexual experience.

(c) Presence of hymen is a reliable indicator of sexual experience.

(d) Presence or absence of hymen is not a reliable indicator of virginity.

Pg. 46, Para 2

84. Which is the correct path for the secretion and transport of milk in mammary gland?

(a) Alveoli → Cavity of alveoli → Mammary tubule → Mammary duct → Mammary ampulla → Lactiferous duct

(b) Mammary duct → Mammary tubule → Alveoli → Lactiferous duct → Mammary ampulla → Cavity of alveoli

(c) Mammary duct → Cavity of alveoli → Lactiferous duct → Mammary ampulla → Mammary tubule → Alveoli

(d) Alveoli → Mammary tubule → Mammary ampulla → Cavity of alveoli → Mammary duct → Lactiferous duct

Pg. 47, Para 1

85. Which fact about the mammary glands in humans is false?

(a) A non-functional mammary gland is the characteristic of all male mammals.

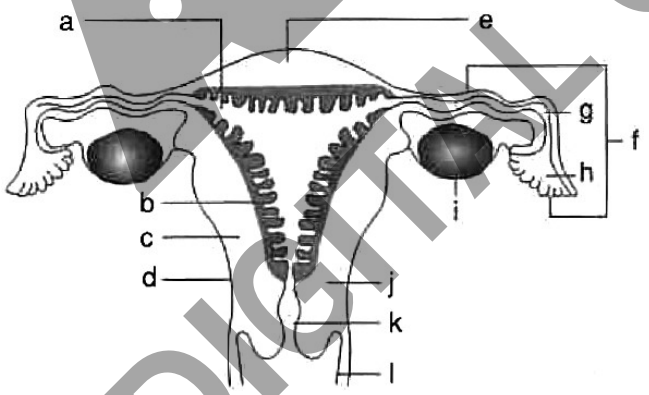
(b) Mammary glands are paired structures.

(c) It is a glandular tissue containing fixed amount of fat.

(d) Glandular tissue of each breast is divided into 15 to 20 mammary lobes containing clusters of cells called alveoli.

Pg. 47, Para 1

Figure given for question 86 to 91.



86. What is indicated by 'j' in the figure?

(a) Vagina (b) Cervical canal

(c) Cervix (d) Myometrium

Pg. 45, Fig. 3.3(b)

87. What does 'h' represent in the figure?

(a) Fimbrial (b) Infundibulum

(c) Isthmus (d) Ampulla

Pg. 45, Fig. 3.3(b)

88. In the figure, identify the structure 'f' which consists of 'g' and 'h'.

(a) Ovary (b) Fallopian tube

(c) Uterus (d) Cervix

Pg. 45, Fig. 3.3(b)

89. What does 'd' represent in the figure?

(a) Pericardium (b) Perimetrium

(c) Peritoneum (d) Epimetrium

Pg. 45, Fig. 3.3(b)

90. What is indicated by 'b' in the figure?

(a) Villi (b) Endothelium

(c) Endometrium (d) Epithelium

Pg. 45, Fig. 3.3(b)

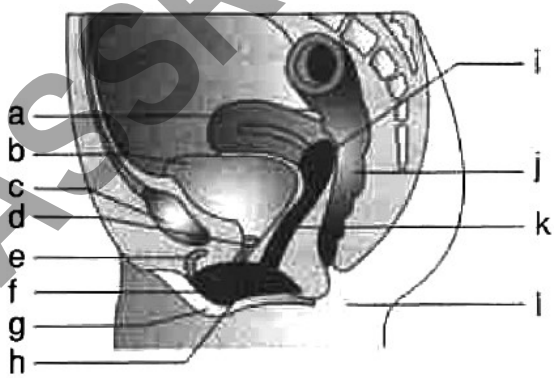
91. What does 'e' represent in the figure?

(a) Uterus (b) Isthmus

(c) Uterine fundus (d) Uterine ampulla

Pg. 45, Fig. 3.3(b)

Figure given for question 92 to 96.



92. What is indicated by 'c' in the figure?

(a) Urethra (b) Ovary

(c) Clitoris (d) Public symphysis

Pg. 45, Fig. 3.3(a)

93. What does 'f represent in the figure?

(a) Clitoris (b) Labia majora

(c) Labia minora (d) Urethra

Pg. 45, Fig. 3.3(a)

94. What is indicated by 'k' in the figure?

(a) Ovary (b) Cervix

(c) Vagina (d) Urethra

Pg. 45, Fig. 3.3(a)

95. What is indicated by 'b' in the figure?

(a) Uterus

(b) Vagina

(c) Public symphysis

(d) Urinary bladder

Pg. 45, Fig. 3.3(a)

96. What does 'd' represent in the figure?

(a) Vagina (b) Clitoris

(c) Urethra (d) Cervix

Pg. 45, Fig. 3.3(a)

97. Immature male germ cells are known as

(a) Spermatid (b) Spermatozoa

(c) Spermatogonia (d) Sperm

Pg. 47, Para 2

98. Spermatogonium undergoes ____.

(a) Reduction division

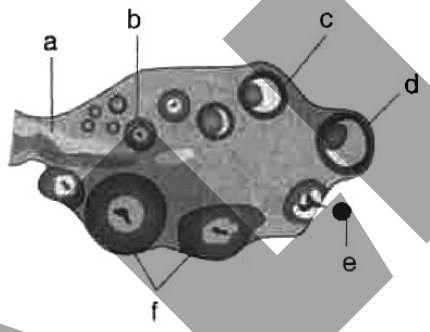
(b) Meiotic division

(c) Mitotic division

(d) None of these

Pg. 47, Para 2

Figure given for question 99 to 102.



99. What does 'a' represent in the figure?

(a) Lymph vessels (b) Blood vessels

(c) Nerve fibres (d) Ligament

Pg. 49, Fig. 3.7

100. What is indicated by 'c' in the figure?

(a) Primary follicle (b) Second follicle

(c) Tertiary follicle (d) Graafian follicle

Pg. 49, Fig. 3.7

101. What does 'f' represent in the figure?

(a) Antrum

(b) Corpus luteum

(c) Corpora cavernosa

(d) Ovum

Pg. 49, Fig. 3.7

102. What does 'e' represent in the figure?

(a) Ovum (b) Oogonium

(c) Mature follicle (d) Zona pellucida

Pg. 49, Fig. 3.7

103. Each spermatogonium is ____ and has ____ number of chromosomes,

(a) n,45 (b) 2n, 23

(c) 2n,46 (d) n, 46

Pg. 49, Fig. 3.7

104. The spermatogonia which undergo meiosis are known as

(a) Sperm

(b) Spermatid

(c) Secondary spermatocyte

(d) Primary spermatocyte

Pg. 47, Para 2

105. The difference between primary and secondary spermatocyte lies in ____.

(a) Presence/absence of a tail

(b) Number of chromosomes

(c) Being hormone producing/non-hormone producing

(d) Primary gamete/secondary gamete in males

Pg. 47, Para 2

106. Secondary spermatocytes give rise to

(a) Diploid spermatids

(b) Haploid sperm

(c) Diploid sperm

(d) Haploid spermatid

Pg. 47, Para 2

107. Sperms are synonymous with

(a) Spermatid

(b) Spermatogonia

(c) Primary spermatocyte

(d) Spermatozoa

Pg. 47, Para 2

108. Spermiogenesis is

(a) Transformation of sperm into spermatids.

(b) Transformation of spermatogonia into primary spermatocyte.

(c) Transformation of secondary spermatocyte into spermatids.

(d) Transformation of spermatid into spermatozoa.

Pg. 47, Para 2

109. After spermiogenesis, the sperm head is embedded in the ____ cells.

(a) Sertoli (b) Leydig

(c) Interstitial (d) Both (a) and (b)

Pg. 47, Para 2

110. The release of sperms from seminiferous tubules is known as ____.

(a) Ejaculation (b) Copulation

(c) Spermiation (d) None of these

Pg. 47, Para 2

111. Spermatogenesis starts at puberty due to the secretion of

(a) Luteinizing hormone

(b) Gonadotropin releasing hormone

(c) Follicle stimulating Hormone

(d) Testosterone

Pg. 47, Para 3

112. Luteinizing hormone (LH) acts on ____ cells and stimulates synthesis and secretion of ____.

(a) Leydig cells, FSH

(b) Interstitial cells, androgens

(c) Leydig cells, GnRH

(d) None of these

Pg. 47, Para 3

113. Androgens stimulate .

(a) Spermiation (b) Insemination

(c) Spermatogenesis (d) Oogenesis

Pg. 47, Para 3

114. The function of FSH in male is

(a) Act on leydig cells and stimulates secretion of factors responsible for spermiation.

(b) Act on Sertoli cells and stimulates secretion of factors responsible for spermatogenesis.

(c) Act on interstitial cells and stimulates secretion of factors responsible for spermiogenesis.

(d) Act on Sertoli cells and stimulates secretion of factors responsible for spermiogenesis.

Pg. 47, Para 3

115. The microscopic structure of sperm consists of

(a) Head Neck, Tail

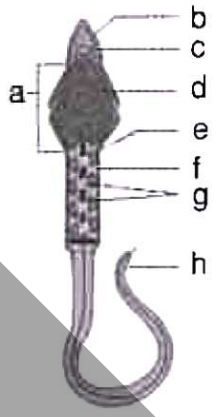
(b) Head Neck, Middle piece, Tail

(c) Head, Middle piece, Tail

(d) Neck, Middle piece, Tail

Pg. 48, Para 2

Figure given for question 116 to 119.



116. What is indicated by 'c' in the figure?

(a) Ascosome (b) Acrosome

(c) Nucleosome (d) Hyaluronidase

Pg. 48, Fig. 3.6

117. What does 'd' represent in the figure?

(a) Nucleosome (b) Acrosome

(c) Nucleus (d) Hyaluronidase

Pg. 48, Fig. 3.6

118. What does 'g' represent in the figure?

(a) Middle piece (b) Mitochondria

(c) Neck (d) Tali

Pg. 48, Fig. 3.6

119. What is indicated by 'b' in the figure?

(a) Plasma membrane

(b) Nuclear membrane

(c) Acrosome

(d) Hyaluronidase

Pg. 48, Fig. 3.6

120. The sperm head contains:

(a) Antherosome (b) Acrosome

(c) Arthosome (d) Ascosome

Pg. 48, Para 2

121. The function of acrosome is

(a) Stimulates synthesis of ovum

(b) Stimulates release of ovum

(c) Stimulates fertilization of ovum

(d) Stimulates degradation of ovum

Pg. 48, Para 2

122. The middle piece of sperm contains cell organelles like

(a) Filaments (b) Mitochondria

(c) Nucleus (d) Ribosomes

Pg. 48, Para 2

123. How many sperm cells are there in an average human ejaculation?
(a) 200 to 300 billion
(b) 200 to 300 million
(c) 200 to 300 trillion
(d) 200 to 300 lacs
Pg. 48, Para 2

124. For a normal male fertility, which of the following statements is correct?
(a) 60 per cent sperm must have normal motility and 40 per cent must have normal shape.
(b) 60 per cent sperm must have normal shape and 40 per cent must have acrosome.
(c) 60 per cent sperm must have normal shape and 40 per cent must have vigorous motility.
(d) None of these
Pg. 48, Para 2

125. Semen consists of
(a) Seminal plasma + Spermatid
(b) Seminal plasma + Spermatozoa
(c) Seminal plasma + Spermatogonia
(d) None of these
Pg. 48, Para 3

126. The process of formation of mature female gamete is known as
(a) Gametogenesis
(b) Spermatogenis
(c) Oogenesis
(d) Morphogenesis
Pg. 48, Para 4

127. Oogenesis initiates after/at
(a) Fertilization
(b) Puberty
(c) Embryonic development
(d) Time of birth
Pg. 48, Para 4

128. Each female ovary consists of
(a) Millions of ova
(b) Millions of primary oocytes
(c) Millions of oogonia
(d) Millions of secondary oocytes
Pg. 48, Para 4

129. The primary oocytes are in which stage of cell division?
(a) Prophase I of mitotic division
(b) Prophase I of meiotic division
(c) Prophase II of meiotic division
(d) Prophase II of mitotic division
Pg. 48, Para 4

130. From the period of birth till puberty, which cells degenerate in ovary?
(a) Oogonia
(b) Ova
(c) Secondary follicle
(d) Primary follicle
Pg. 48, Para 4

131. The primary and secondary follicle are surrounded by cells known as
(a) Granulosa (b) Mucosa
(c) Serosa (d) Granuloma
Pg. 48, Para 4

132. The tertiary follicle in ovary is characterized by the presence of
(a) Fundus (b) Antrum
(c) Vacuole (d) Cavity
Pg. 48, Para 4

133. The mature tertiary follicle is also known as
(a) Ovum (b) Oogonia
(c) Graafian follicle (d) Polar body
Pg. 48, Para 1

134. The membrane around Graafian follicle is known as
(a) Zona fasciculata (b) Zona reticularis
(c) Zona externa (d) Zona pellucida
Pg. 48, Para 1

135. Spermatogonia is
(a) Immature male germ cells
(b) Mature male germ cells
(c) Immature male gamete
(d) Mature male gamete
Pg. 47, Para 2

136. The spermatids are transformed into spermatozoa (sperm) by the process called
(a) Spermatogenesis (b) Spermiogenesis
(c) Spermiation (d) Capacitation
Pg. 47, Para 2

137. Select the correct sequence:
(a) GnRH → LH → Leydig cells → Androgens → Spermatogenesis
(b) GnRH → FSH → Sertoli cells → Some factors → Spermiogenesis
(c) Both are correct
(d) Both are incorrect

Pg. 47, Para 2

138. Acrosome is a modified
(a) Golgibody (b) ER
(c) Vacuole (d) Ribosome

Pg. 48, Para 2

139. Antrum is present in
(a) Primary follicle
(b) Secondary follicle
(c) Tertiary follicle
(d) All of these

Pg. 48, Para 2

140. Primary oocyte grows in size and completes its first meiotic division inside the
(a) Primary follicle
(b) Secondary follicle
(c) Tertiary follicle
(d) All of these

Pg. 48, Para 5

141. Which of the following undergoes unequal division?
(a) Primary oocyte
(b) Pollen grain of angiosperm
(c) Yeast cell during bud formation
(d) All the above

Pg. 48, Para 5

142. Secondary oocyte develops zona pellucida around it in the .
(a) Primary follicle
(b) Secondary follicle
(c) Tertiary follicle
(d) Graafian follicle

Pg. 49, Para 1

143. The ploidy of spermatogonia, primary spermatocyte, secondary spermatocyte and spermatid is
(a) 2n, 2n, 2n, n (b) n, 2n, 2n, n
(c) n, 2n, n, n (d) 2n, 2n, n, n

Pg. 47, Para 2

144. The first menstruation which begins at puberty is called
(a) Menstrual cycle (b) Menarche
(c) Oogenesis (d) Ovulation

Pg. 49, Para 2

145. An average interval of menstrual cycle in females is about ____ days.
(a) 15/16 (b) 30/31
(c) 28/29 (d) 25/26

Pg. 49, Para 2

146. One ovum is released during the ____ of each menstrual cycle.
(a) Initial (b) Middle
(c) Terminal (d) Alternative

Pg. 49, Para 2

147. The menstrual flow in menstrual cycle lasts for about
(a) 6 to 7 days (b) Almost 7 days
(c) 3 to 5 days (d) 1 to 2 days

Pg. 50, Para 1

148. Lack of menstruation may be indicative of
(a) Pregnancy (b) Routine work stress
(c) Poor health (d) All of these

Pg. 50, Para 1

149. In females, gonadotropins attain a peak level at about ____ day of the menstrual cycle.
(a) 15th (b) 14th
(c) 28th (d) 29th

Pg. 51, Para 1

150. LH surge causes
(a) Rupture of graafian follicle
(b) Release of ovum
(c) Endometrial shedding
(d) Both (a) and (b)

Pg. 51, Para 1

151. The ovulation phase is followed by____ phase.
(a) Gestation (b) Luteal
(c) Menstrual (d) Oogenesis

Pg. 51, Para 1

152. After ovulation, Graafian follicle transforms into
(a) Corpus cavernosa
(b) Corpus pellucida
(c) Corpus luteum
(d) Corpus metrium

Pg. 51, Para 1

153. Large amounts of progesterone is secreted by
(a) Corpus germinativum
(b) Corpus luteum
(c) Corpus cavernosa
(d) Corpus pellucida

Pg. 51, Para 1

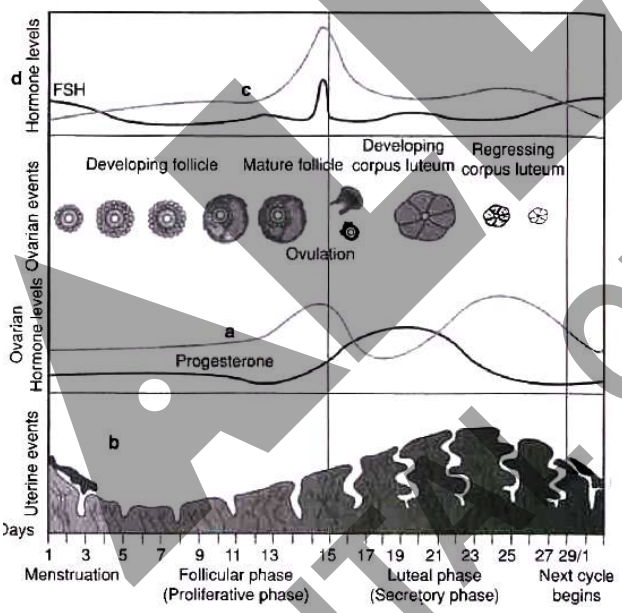
154. If fertilization does not occur corpus luteum ____.
(a) Proliferates (b) Degenerates
(c) Regenerates (d) Divides

Pg. 51, Para 1

155. The stage in human female when menstrual cycle ceases at the age of 50 is known as
(a) Ovopause (b) Menarche
(c) Menopause (d) Menstruation

Pg. 51, Para 1

Figure given for question 156 to 159.



156. What does 'b' represent?
(a) LH (b) Pituitary
(c) Menses (d) Ovarian

Fig. 39

157. What is indicated by 'd' in the "figure?
(a) Estrogen (b) Pituitary
(c) LH (d) Menses

Fig. 39

158. What does 'c' represent in the figure?
(a) LH (b) Pituitary
(c) Menses (d) Ovarian

Fig. 39

159. What is indicated by 'a' in the figure?
(a) Oestrogen (b) Menses
(c) Pituitary (d) Progesterone

Fig. 39

160. How many ovum(s)is/are released in one menstruation?
(a) 1 (b) 2
(c) 3 (d) 4

Fig. 39

161. Which of the facts is true about menstruation?
(a) It occurs only when the released ovum is not fertilized.
(b) It occurs due to the breakdown of endometrial lining.
(c) Menstrual flow lasts for 3 to 5 days.
(d) All the above

Pg. 50, Para 1

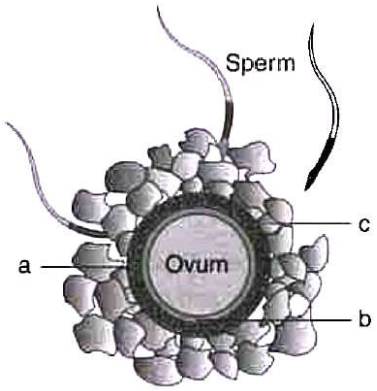
162. Menopausal age in human being is
(a) 45 years (b) 55 years
(c) 50 years (d) 60 years

Pg. 51, Para 1

163. The time required to convert primary follicle into mature follicle is
(a) 4 days (b) 9 to 11 days
(c) 18 to 20 days (d) 2 days

Pg. 50, Fig. 3.9

Figure given for question 164 to 166.



164. What is indicated by 'b' in the figure?
(a) Ovum
(b) Cells of corona radiata
(c) Perivitelline space
(d) Zona pellucida

Pg. 51,Fig. 3.10

165. What does 'a' represent in the figure?
(a) Cells of corona radiata
(b) Sperm
(c) Perivitelline space
(d) Zona pellucida

Pg. 51,Fig. 3.10

166. What does 'c' represent in the figure?
(a) Cells of corona radiata
(b) Sperm
(c) Perivitelline space
(d) Zona pellucida

Pg. 51,Fig. 3.10

167. The Graafian follicles release
(a) Secondary oocyte
(b) Primary oocyte
(c) Ovum
(d) Both (a) and (b)

Pg. 49 Para 1

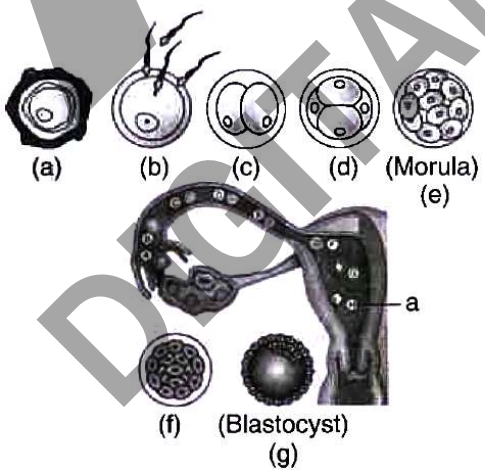
168. The release of ovum from ovary is known as
(a) Ovulation (b) Oogenesis
(c) Parturition (d) Gametogenesis

Pg. 49 Para 1

169. Total number of polar bodies formed in oogenesis?
(a) 2 (b) 1
(c) 3 (d) 0

Pg. 49, Fig. 38

170. What does 'a' represent in this figure?



(a) Blastocyst
(b) Blastocyst implantation
(c) Morula
(d) Cells

Pg. 52, Fig. 3.11

171. Once the sperm is injected into the female genital tract, which place is primarily concerned with meeting of sperm with ovum?
(a) Uterus (b) Ampulla
(c) Isthmies (d) cervi

Pg. 51, Para 2

172. All copulations do not lead to pregnancy. The most appropriate reason to support this statement is
(a) The ovum and sperm should be transported randomly to ampullary-isthmic junction.
(b) The ovum and sperm should be continuously transported to ampullary-isthmic junction.
(c) The ovum and sperm should be simultaneously transported to ampullary-isthmic junction.
(d) None of these

Pg. 51, Para 2

173. The sperm comes into contact with the ____ layer of ovum to cause fertilization.
(a) Corona radiata (b) Perivitelline layer
(c) Zona pellucida (d) Zona fasciculata

Pg. 51, Para 3

174. Once a sperm fuses with an ovum, the remaining sperms cannot fertilize ovum. What changes are responsible for such phenomenon?
(a) Selective permeation through ovum.
(b) Specific spatial arrangement of corona radiata cells.
(c) Change in the membrane zona pellucida.
(d) Ovum releases toxic substances thereby killing other sperms.

Pg. 51, Para 3

175. After entry of sperm into cytoplasm of ovum which of the following event takes place?
(a) Mitotic division of secondary oocyte
(b) Meiotic division of primary oocyte
(c) Mitotic division of secondary oocyte
(d) Meiotic division of secondary oocyte

Pg. 52, Para 1

176. The human female has which of the following sex chromosome pattern?
(a) XX (b) YY
(c) XY (d) XYX

Pg. 52, Para 2

177. The human male has which of the following sex chromosome pattern?
(a) XYX (b) XY
(c) XX (d) YY
Pg. 52, Para 2

178. Female produces only
(a) One type of gamete Y
(b) One type of gamete X
(c) Either X or Y type of gamete
(d) All of these
Pg. 52, Para 2

179. Scientifically, sex of the baby is determined by
(a) Only mother
(b) Only father
(c) Either mother or father
(d) Gestational phase
Pg. 52, Para 2

180. After formation of zygote, it cleaves into 2, 4, 8, 16 daughter cells called
(a) Blastocyst (b) Morula
(c) Trophoblast (d) Blastomere
Pg. 52, Para 3

181. The embryo with 2^3 or 4^2 blastomeres is known as
(a) Blastocyst (b) Morula
(c) Trophoblast (d) Zygote
Pg. 52, 53, Para 3 & Para 1

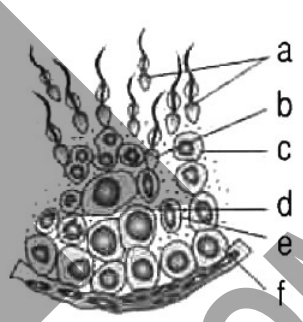
182. Morula divides and transforms into
(a) Inner cell mass
(b) Blastocyst
(c) Trophoblast
(d) Blastomere
Pg. 53, Para 1

183. The outer layer of blastocyst is known as
(a) Zona pellucida
(b) Trophoblast
(c) Blastomere
(d) Corona radiata
Pg. 53, Para 1

184. Which layer of blastocyst gets attached to the endometrium during implantation?
(a) Trophoblast (b) Blastomere
(c) Inner cell mass (d) Morula
Pg. 53, Para 1

185. The inner cell mass of blastocyst develops into
(a) Morula (b) Trophoblast
(c) Embryo (d) Zygote
Pg. 53, Para 1

Figure given for question 186 to 189.



186. What does 'f' represent in the figure?
(a) Sertoli cells
(b) Spermatogonium
(c) Spermatid
(d) Primary spermatocyte
Pg. 47, Fig. 3.5

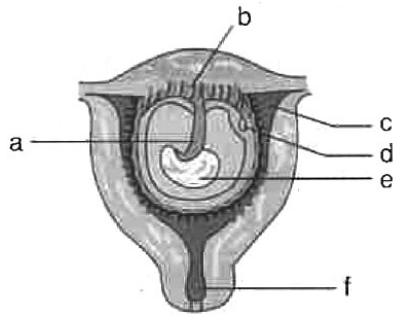
187. What is indicated by 'e' in the figure?
(a) Sertoli cells
(b) Spermatogonium
(c) Spermatid
(d) Primary spermatocyte
Pg. 47, Fig. 3.5

188. What does 'd' represent in the figure?
(a) Sertoli cells (b) Spermatogonium
(c) Spermatid (d) Primary spermatocyte
Pg. 47, Fig. 3.5

189. What is indicated by 'a' in the figure?
(a) Spermatid
(b) Spermatozoa
(c) Secondary spermatocyte
(d) Primary spermatocyte
Pg. 47, Fig. 3.5

190. Stem cells which have the potential to produce all types of cells, tissues and organs are present in
(a) Ectoderm (b) Inner cell mass
(c) Trophoblast (d) Endoderm
Pg. 53, Para 1

Figure given for question 191 to 194.



191. What is indicated by 'e' in the figure?
(a) Yolk sac (b) Embryo
(c) Cavity of uterus (d) Placental villi
Pg. 53, Fig. 3.12

192. What does 'a' represent in the figure?
(a) Umbilical cord (b) Embryo
(c) Yolk sac (d) Placental villi
Pg. 53, Fig. 3.12

193. What does 'd' represent in the figure?
(a) Embryo (b) Umbilical cord
(c) Yolk sac (d) Cavity of uterus
Pg. 53, Fig. 3.12

194. What does 'b' represent in the figure?
(a) Cavity of uterus (b) Embryo
(c) Yolk sac (d) Placental villi
Pg. 53, Fig. 3.12

195. After implantation the finger-like projection which appears on the trophoblast are known as
(a) Intestinal villi (b) Ampullary villi
(c) Chorionic villi (d) Amniotic villi
Pg. 53, Para 2

196. After implantation the finger-like projections on the trophoblast are surrounded by
(a) Uterine tissue (b) Maternal blood
(c) Both (a) and (b) (d) Either (a) and (b)
Pg. 53, Para 2

197. The structural and functional unit between the foetus and maternal blood is known as
(a) Inner cell (b) Placenta
(c) Trophoblast (d) Chorionic villi
Pg. 53, Para 2

198. Placenta does not perform which of the following function?
(a) Supply of O_2
(b) Supply of excretory materials
(c) Supply of nutrients
(d) Removal of CO_2
Pg. 53, Para 3

199. The placenta is connected to embryo through ____ cord.
(a) Chorionic (b) Umbilical
(c) Amniocentic (d) Uterine
Pg. 53, Para 3

200. Placenta also acts as a/an tissue.
(a) Endocrine (b) Exocrine
(c) Paracrine (d) Mepacrine
Pg. 53, Para 3

201. Which of the following hormone is released by placenta?
(a) FSH (b)HCG
(c) Relaxin (d) LH
Pg. 53, Para 3

202. How many germinal layers does embryo consist of initially, after implantation?
(a) 3 (b) 2
(c) 4 (d) 5
Pg. 54, Para 1

203. In human embryonic development, which layer develops between the ectoderm and endoderm?
(a) Mesothelium (b) Mesoderm
(c) Myoderm (d) Myometrium
Pg. 54, Para 1

204. The average time span of human gestation is
(a) 8 months (b) 9 months
(c) 10 months (d) 1 year
Pg. 54, Para 2

205. The pregnancy phase in humans is divided into how many trimesters?
(a) 2 (b) 4
(c) 3 (d) 5
Pg. 54, Para 2

206. After one month of pregnancy which vital organ is formed in the foetus?
(a) Brain (b) Heart
(c) Lungs (d) Liver
Pg. 54, Para 2

207. In a developing foetus, most of the major organ systems are developed by the end of ___weeks.
(a) 14 (b) 12 .
(c) 10 (d) 16
Pg. 54, Para 2

208. Foetal limbs and digits are formed in the ____ month of embryonic development.
(a) 4th (b) 2nd
(c) 3rd (d) 7th
Pg. 54, Para 2

209. The second trimester of human pregnancy is characterized by
(a) Appearance of heart and aorta
(b) Appearance of external genital organs
(c) Appearance of fine hair, eye-lashes on the eye-lids
(d) Appearance of limbs and digits
Pg. 54, Para 2

210. The scientific name of childbirth is
(a) Gestation (b) Parturition
(c) Implantation (d) Foetal development
Pg. 54, Para 3

211. During parturition, the mild uterine contractions which lead to expulsion of the foetus is known as
(a) Foetal ejection release
(b) Foetal ejection reflex
(c) Foetal uterine reflex
(d) Foetal placental reflex
Pg. 54, Para 3

212. Which hormone is responsible for severe uterine contractions during parturition?
(a) Oestrogen (b) Oxytocin
(c) Progesterone (d) Relaxin
Pg. 54, Para 3

213. After the delivery of the foetus which of the following structure is also expelled out?
(a) Uterus (b) Corpus luteum
(c) Placenta (d) Ovary
Pg. 54, Para 3

214. The production of milk in mammary gland occurs
(a) During parturition
(b) After parturition
(c) Before embryogenesis
(d) At the end of pregnancy
Pg. 54, Para 4

215. The milk produced during the initial days of lactation is called
(a) Menstrum (b) Colostrum
(c) Gynostrum (d) None of these
Pg. 54, Para 4

216. Fertilization takes place at
(a) Isthmus
(b) Ampulla
(c) Infundibulum
(d) Ampullary-isthmic junction
Pg. 51, Para 2

217. Which part of the sperm helps in penetration into the ovum?
(a) Mitochondria (b) Acrosome
(c) Tail (d) All of these
Pg. 54, Para 3

218. Second meiotic division in secondary oocyte is
(a) Unequal
(b) Complete after sperm penetration
(c) Both (a) and (b)
(d) Equal
Pg. 48, Para 5

219. The embryo with 8 to 16 blastomeres is called
(a) Blastula (b) Gastrula
(c) Morula (d) None of these
Pg. 52, Para 5

220. Implantation leads to
(a) Formation of trophoblast in blastocyst
(b) Formation of inner cell mass in blastocyst
(c) Pregnancy
(d) All the above
Pg. 53, Para 1

221. Which of these hormones is/are produced in women during pregnancy?
(a) HCG (b)HPL
(c) Relaxin (d) All of these
Pg. 53, Para 3

222. Which of these statements is incorrect about embryo development?
(a) After one month of pregnancy the heart is formed.
(b) By the end of first trimester most of the major organ systems are formed.
(c) First movement of foetus is observed in the seventh month.
(d) At the end of second trimester, the body is covered with fine hair, eyelids separate and eye lashes are formed.
Pg. 54, Para 2

223. The process of delivery of foetus is called

(a) Parturition (b) Gestation

(c) Ejaculation (d) Capacitation

Pg. 54, Para 3

224. Which one of the following is the most likely root cause why menstruation is not taking place in regularly cycling human female?

(a) maintenance of the hypertrophical endometrial lining

(b) maintenance of high concentration of sex hormones in the blood stream

(c) retention of well-developed corpus luteum

(d) fertilization of the ovum

Pg. 50, Para 1

225. The correct sequence of spermatogenetic stages leading to the formation of sperms in a mature human testes is

(a) spermatogonia - spermatocyte - spermatid - sperms

(b) spermatid - spermatocyte - spermatogonia - sperms

(c) spermatogonia - spermatid - spermatocyte - sperms

(d) spermatocyte - spermatogonia - spermatid - sperms

Pg. 49, Fig. 3.8

226. Which one of the following is correct matching of process occurring during menstrual cycle?

(a) Proliferative phase: Rapid regeneration of myometrium and maturation of Graafian follicle.

(b) Development of: Secretory phase and increased secretion of progesterone.

(c) Menstruation: breakdown of myometrium and ovum not fertilized.

(d) Ovulation: LH and FSH attain peak level and sharp fall in the secretion of progesterone.

Pg. 50, 51, Para 1

227. Seminal plasma in humans is rich in

(a) Fructose and calcium but has no enzymes

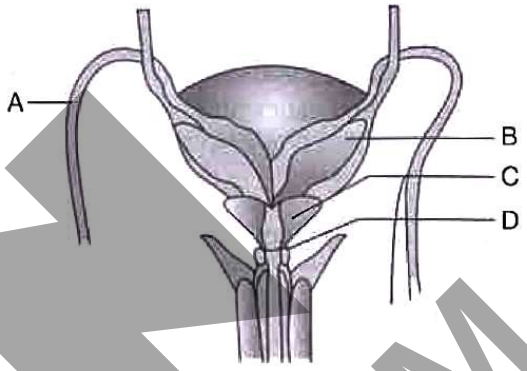
(b) Glucose and certain enzymes but has no calcium

(c) Fructose and certain enzymes but poor in calcium

(d) Fructose, calcium and certain enzymes

Pg. 44, Para 2

228. Given below is a diagrammatic sketch of a portion of human male reproductive system. Select the correct set of names of the parts labelled A, B, C, D



(a) A: Vas deferens, B: Seminal vesicle, C: Prostate, D: Bulbourethral gland

(b) A: Vas deferens, B: Seminal vesicle, C: Bulbourethral gland, D: Prostate

(c) A: Ureter, B: Seminal vesicle, C: Prostate, D: Bulbourethral gland

(d) A: Ureter, B: Prostate, C: Seminal vesicle, D: Bulbourethral gland

Pg. 43, Fig. 3.1

229. Which one of the following statements is incorrect about menstruation?

(a) At menopause in female, there is especially abrupt increase in gonadotropic hormones.

(b) The beginning of the cycle of menstruation is called menarche.

(c) During normal menstruation, about 40 ml blood is lost.

(d) The menstrual fluid can easily clot.

Pg. 50, 51, Para 1

230. In human adult females oxytocin

(a) stimulates pituitary to secrete vasopressin

(b) causes strong uterine contractions during parturition

(c) is secreted by anterior pituitary

(d) stimulates growth of mammary glands

Pg. 54, Para 3

231. In humans, at the end of the first meiotic division, the male germ cells differentiate into the

(a) Spermatids

(b) Spermatozonia

(c) Primary spermatocytes

(d) Secondary spermatocytes

Pg. 47, Para 2

232. Withdrawal of which of the following hormones is the immediate cause of menstruation?
(a) FSH (b) FSH-RH
(c) Progesterone (d) Estrogen

Pg. 50, Fig. 3.9

233. If mammalian ovum fails to get fertilized which one of the following is unlikely?
(a) Corpus luteum will disintegrate
(b) Progesterone secretion rapidly declines
(c) Estrogen secretion further decreases
(d) Primary follicle starts developing

Pg. 51, Para 1

234. Ovulation in the human female normally takes place during the menstrual cycle
(a) at the mid secretory phase
(b) just before the end of the secretory phase
(c) at the beginning of the proliferative phase
(d) at the end of the proliferative phase

Pg. 49, Last 4th Para 1

235. The mammalian corpus luteum produces
(a) estrogen
(b) progesteron
(c) luteotropic hormone
(d) luteinizing hormone

Pg. 51, Para 1

236. In 28-day human ovarian cycle, ovulation occurs on
(a) Day (b) Day 5
(c) Day 14 (d) Day 28

Pg. 49, 50, Last 4th, Para 1

237. At the end of first meiotic division, male sperm differentiates into
(a) Secondary spermatocyte
(b) Primary spermatocyte
(c) Spermatogonium
(d) Spermatid

Pg. 49, Fig. 3.8(a)

238. Extrusion of second polar body from egg nucleus occurs
(a) After entry of sperm before completion of] fertilization
(b) After completion of fertilization
(c) Before entry of sperm
(d) Without any relation of sperm entry

Pg. 52, Para 1

239. Location and secretion of Leydig's cells are
(a) Liver - cholesterol
(b) Ovary- estrogen
(c) Testes - testosterone
(d) Pancreas - glucagon

Pg. 47, Para 3

240. How many sperms are formed from a secondary spermatocyte?
(a) 4 (b) 8
(c) 2 (d) 1

Pg. 49, Fig. 3.8(a)

241. Egg is liberated from ovary in
(a) Secondary oocyte stage
(b) Primary oocyte stage
(c) Oogonial stage
(d) Mature ovum stage

Pg. 52, Para 1

242. Choose the incorrect statement from the following:
(a) In birds and mammals internal fertilization takes place.
(b) Colostrum contains antibodies and nutrients.
(c) Polyspermy in mammals is prevented by the chemical changes in the egg surface.
(d) In humans, female implantation occurs almost seven days after fertilization.

Mixed

243. Identify the correct statement from the following:
(a) High levels of oestrogen triggers the ovulatory surge.
(b) Oogonial cells start to proliferate and give rise to functional ova in regular cycles from puberty onwards.
(c) Sperms released from seminiferous tubules are highly motile.
(d) Progesterone level is high during the post ovulatory phase of menstrual cycle.

Pg. 51, Para 1

244. Spot the odd one out from the following structures with reference to the male reproductive system.
(a) Rete testis (b) Epididymis
(c) Vasa efferentia (d) Isthmus

Pg. 43, Para 3

245. Seminal plasma, the fluid part of semen, is contributed by

i. Seminal vesicle

ii. Prostate

iii. Urethra

iv. Bulbourethral gland

(a) i and ii (b) i, ii and iv

(c) ii, iii and iv (d) i and iv

Pg. 44, Para 2

246. Mature Graafian follicle is generally present in the ovary of a healthy human female around

(a) 5 to 8 days of menstrual cycle

(b) 11 to 17 days of menstrual cycle

(c) 18 to 23 days of menstrual cycle

(d) 24 to 28 days of menstrual cycle

Pg. 49, Para 1

247. Acrosomal reaction of the sperm occurs due to

(a) Its contact with zona pellucida of the ova.

(b) Reactions within the uterine environment of the female.

(c) Reactions within the epididymal environment of the male.

(d) Androgens produced in the uterus.

Pg. 51, Para 3

248. Which one of the following is not a male accessory gland?

(a) Seminal vesicle

(b) Ampulla

(c) Prostate

(d) Bulbourethral gland

Pg. 44, Para 2

249. The immature male germ cell undergoes division to produce sperms by the process of spermatogenesis. Choose the correct option from below with reference to the above statement.

(a) Spermatogonia have 46 chromosomes and always undergo meiotic cell division.

(b) Primary spermatocytes divide by mitotic cell division.

(c) Secondary spermatocytes have 23 chromosomes and undergo second meiotic division.

(d) Spermatozoa are transformed into spermatids.

Fig. 3.8 a

250. Match between the following representing parts of the sperm and their functions and choose the correct option.

Column A	**Column B**
A. Head	i. Enzymes
B. Middle piece	ii. Sperm motility
C. Acrosome	iii. Energy
D. Tail	iv. Genetic material

(a) A-ii, B-iv, C-i, D-iii

(b) A-iv, B-iii, C-i, D-ii

(c) A-iv, B-i, C-ii, D-iii

(d) A-ii, B-i, C-iii, D-iv

Pg. 48, Para 2

251. Which among the following has 23 chromosomes?

(a) Spermatogonia

(b) Zygote

(c) Secondary oocyte

(d) Oogonia

Pg. 49, Fig. 3.8

252. Match the following and choose the correct options:

Column A	**Column B**
A. Trophoblast	i. Embedding of blastocyst in the endometrium
B. Cleavage	ii. Group of cells that would differentiate as embryo
C. Inner cell mass	iii. Outer layer of blastocyst attached to the endometrium
D. Implantation	iv. Mitotic division of zygote

(a) A-ii, B-i, C-iii, D-iv

(b) A-iii, B-iv, C-ii, D-i

(c) A-iii, B-i, C-ii, D-iv

(d) A-ii, B-iv, C-iii, D-i

Pg. 52, Para 1

253. Which of the following hormones is not secreted by human placenta?

(a) hCG (b) Oestrogens

(c) Progesterone (d) LH

Pg. 53, Para 2

254. The vas deferens receives duct from the seminal vesicle and opens into urethra as
(a) Epididymis (b) Ejaculatory duct
(c) Efferent ductule (d) Ureter
Pg. 43, Para 3

255. Urethral meatus refers to the
(a) Urinogenital duct
(b) Opening of vas deferens into urethra
(c) External opening of the urinogenital duct
(d) Muscles surrounding the urino genial duct
Pg. 43, Para 3

256. Morula is a developmental stage
(a) Between the zygote and blastocyst
(b) Between the blastocyst and gastrula
(c) After the implantation
(d) Between implantation and parturition
Pg. 53, Para 1

257. The membranous cover of the ovum at ovulation is
(a) Corona radiata (b) Zona radiata
(c) Zona pellucida (d) Chorion
Pg. 49, Para 1

258. Identify the odd one from the following:
(a) Labia minora (b) Fimbriae
(c) Infundibulum (d) Isthmus
Pg. 45, Para 1

REPRODUCTIVE HEALTH

1. What is the full form of WHO?

(a) Ware House Organization

(b) War and Health Organization

(c) World Health Office

(d) World Health Organization

Pg 57 - 1st para

2. What are the various aspects of reproduction covered by WHO?

(a) Physical, Emotional, Behavioural

(b) Physical, Emotional, Behavioural, Social

(c) Physical, Emotional, Gestational, Social

(d) Physical, Emotional, Social

Pg 57 - 1st para

3. Which was the first country in the world to initiate a nationwide programme for reproductive health?

(a) China (b) USA

(c) India (d) Russia

Pg 57 - 2nd para

4. The figure indicates which contraceptive device?

(a) Condom for female

(b) Condom for male

(c) Diaphragm

(d) Cervical cap

Pg 60 - Fig 4.1(a)

5. The programme of 'Family Planning' was initiated in the year .

(a) 1950 (b) 1947

(c) 1949 (d) 1951

Pg 57 2nd para

6. The reproductive program RCH stands for

(a) Reproductive and Community Health Care

(b) Restorative and Communal Health Care

(c) Reproductive and Child Health Care

(d) Reproductive and Congenital Health Care

Pg 58 - 1st para

7. In context of reproductive health, STD stands for

(a) Sexually Terminal Disease

(b) Sexually Transmitted Disease

(c) Sexually Transformed Disease

(d) Sexually Transducted Disease

Pg 58 - 2nd para

8. Statutory ban has been laid on ____ to check female foeticide.

(a) Choriocentesis (b) Amniocentesis

(c) Uterocentesis (d) Embryocentesis

Pg 58 - 3rd para

9. WHO refers reproductive health as

(a) Physically healthy reproductive organ

(b) Functionally healthy reproductive organ

(c) Normal emotional and behavioural interaction! among people in all sex related aspects.

(d) All the above

Pg 56 - 1st para

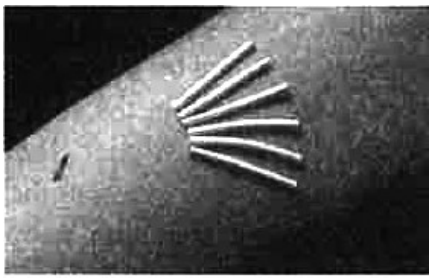
10. Every ____ person in the world is an Indian.

(a) 4th (b) 6th

(c) 8th (d) 10th

Pg 59 - 2nd para

11. What is shown in the figure?



(a) Copper T (b) Implants

(c) Stents (d) Vault

Pg 61 - fig 4.3

12. 'Saheli', oral contraceptive for the females was developed by which institute?

(a) CDRI, Lucknow (b) NBG, Lucknow

(c) Kazari, Jodhpur (d) NIV, Pune

Pg 58 - 4th para

13. The following are indicative signs which indicate improved reproductive health of society. Choose the correct combination.

(i) Better awareness about sex related problem

(ii) Better detection and cure of STDs

(iii) Better postnatal care

(iv) Increased number of couples with large families

(a) i and iv only (b) ii, iii and iv only

(c) i and ii only (d) i, ii and iii only

Pg 58 - 2nd para

14. CDRI, Lucknow developed which new female contraceptive?

(a) 'Sakhi' (b) 'Saheli'

(c) 'Saloni' (d) 'Smitil

Pg 58/59 - 4th/1st para

15. CDRI stands for

(a) Contraceptive Drug Research Institute

(b) Central District Research Institute

(c) Central Drug Research Institute

(d) Central Dermatologic Research Institute

Pg 59 - 1st para

16. The world population was 2000 million in the year

(a) 1980 (b) 1970

(c) 1960 (d) 1990

Pg 59 - 2nd para

17. Which IUD is shown in the given figure?

(a) Lippes loop (b) Progestasert

(c) Copper T (d) Multiload-375

Pg 60 - fig. 4.2

18. By the year 2000, the world population rocketed to

(a) 6 million (b) 6 billion

(c) 6 trillion (d) 600 million

Pg 59 - 2nd para

19. MMR stands for

(a) Magnetic Maxima Resonance

(b) Mortality Memorandum Rate

(c) Mortality Maternal Rate

(d) Maternal Mortality Rate

Pg 59 - 2nd para

20. IMR stands for

(a) Indigenous Mortality Rate

(b) Infant Migratory Rate

(c) Infant Mortality Rate

(d) Infant Mitigation Rate

Pg 59 - 2nd para

21. Smaller families can be encouraged by using various

(a) Educational methods

(b) Contraceptive methods

(c) Abortive methods

(d) Rhythm method

Pg 59 - 3rd para

22. A wise way to encourage small families is by raising the marriageable age of female to ____ years and that of male to ____ years respectively.

(a) 16, 18 (b) 18,20

(c) 18,21 (d) 17,22

Pg 59 - 3rd para

23. Many couples in the urban working areas have adopted the ____ norm.

(a) Two child (b) One child

(c) No child (d) Three child

Pg 59 - 3rd para

24. Identity the characteristic which an ideal contraceptive should not have.

(a) User friendly (b) Easily available

(c) Non reversible (d) Least side effect

Pg 59 - 4rd para

25. A natural method of contraception, periodic abstinence is

(a) Abstaining from coitus from day 1 to 5 of the menstrual cycle.

(b) Abstaining from coitus from day 17 to 22 of the menstrual cycle.

(c) Abstaining from coitus from day 10 to 17 of the menstrual cycle.

(d) Abstaining from coitus from day 5 to 10 of the menstrual cycle.

Pg 60 - 1st para

26. Coitus interruptus/withdrawal method concerns with

(a) Withdrawal of penis from vagina before ejaculation

(b) Withdrawal of penis from vagina after ejaculation

(c) Prevention of coitus

(d) Alternate prevention of coitus

Pg 60 - 1st para

27. After parturition, which natural contraception way can be utilized?

(a) Lactational menorrhea

(b) Lactational amenorrhea

(c) Lactational deficiency

(d) Lactational prevention

Pg 60 - 1st para

28. The figure indicates which contraceptive device?

(a) Condom for female

(b) Condom for male

(c) Diaphragm

(d) Cervical cap

Pg 60 - Fig.-4.1 (b)

29. In lactational amenorrhea, which event does not occur in menstrual cycle?

(a) Menstrual flow

(b) Ovulation

(c) Funicular phase

(d) Luteal phase

Pg 60 - 1st para

30. Lactational amenorrhea is effective only up to a maximum of months.

(a) Two (b) Four

(c) Six (d) Eight

Pg 60 - 1st para

31. In the ____ method of contraception ovum and sperms are prevented from physically meeting by the use of a membranous sheath.

(a) Barrier (b) Sterilization

(c) Natural (d) Pills

Pg 60 - 2nd para

32. ____ is a popular brand of condom for males.

(a) 'Nishodh' (b) 'Nirodh'

(c) 'Nidosh' (d) 'Nirdosh'

Pg 60 - 2nd para

33. Which of the following is not applicable to females for contraception?

(a) Diaphragms (b) Vasectomy

(c) Condoms (d) Cervical caps

Pg 60 - 2nd para

34. Multiload 375 is a

(a) Disease resistant crop

(b) New viral vector

(c) Intrauterine Device

(d) Biological warfare device

Pg 60 - 3rd para

35. IUD stands for

(a) Intra Ureter Device

(b) Intrinsic Uterine Device

(c) Intrauterine Device

(d) Intra Urinogenital Device

Pg 60 - 3rd para

36. Lippes loop is a

(a) Structure associated with nephron

(b) Structure associated with male reproductive system

(c) Structure associated with ligamentous tissue

(d) A non-medicated IUD

Pg 60 - 3rd para

37. Which of the following is a copper releasing IUD?

(a) CUT (b) Multiload 375

(c) Cu7 (d) All of these

Pg 60 - 3rd para

38. Progestasert is a

(a) Oral contraceptive

(b) Natural contraceptive

(c) Hormonal IUD

(d) Implant contraceptive

Pg 60 - 3rd para

39. LNG-20 is a
(a) Fuel (b) Modified crop
(c) Hormonal IUD (d) Cu releasing IUD
Pg 60 - 3rd para

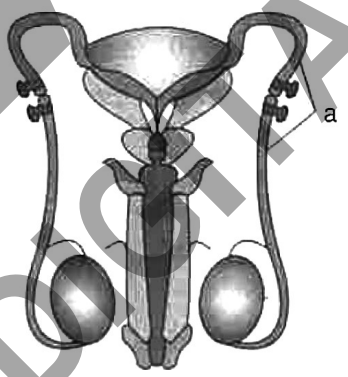
40. Which of the following is a most widely used contraceptive in India?
(a) IUD (b) Pills
(c) Barrier method (d) Natural method
Pg 61 - 1st para

41. The pills used by females to prevent concept^ contain
(a) Only oestrogen
(b) Only progestogen
(c) Combination of oestrogen progestogen
(d) Both (b) and (c)
Pg 61 - 2nd para

42. The 'Pills' have to be taken for contraception continuously for a period days.
(a) 22 (b) 21
(c) 24 (d) 25
Pg 61 - 2nd para

43. Oral pills work by
(a) Inhibiting ovulation
(b) Inhibiting implantation
(c) Altering the quality of mucus
(d) All of these
Pg 61 - 2nd para

Figure given for questions 44-45.



44. Which portion of male reproductive system has been cut and ligated in figure?
(a) Vasa efferentia
(b) Urethra
(c) Vas deferens
(d) Rete testis
Pg 61 - Fig.-44(a)

45. The surgical procedure indicated in the figure is
(a) Tubectomy (b) Hysterectomy
(c) Vasectomy (d) Orchiectomy
Pg 61 - Fig.-44(a)

46. 'Saheli', the new oral contraceptive for females, contains a preparation.
(a) Steroidal (b) Peptide
(c) Non steroidal (d) Inorganic
Pg 61 - 2nd para

47. 'Saheli' is a/an_____ contraceptive pill.
(a) Emergency (b) One week
(c) 72 hour (d) One month
Pg 61 - 2nd para

48. Apart from pills of progestogen alone or in combination with oestrogen, which other means can be used for contraception?
(a) Implants (b) Injections
(c) Syrups (d) Both (a) and (b)
Pg 61 - 3rd para

49. Emergency contraceptive should be under which of the following conditions
(a) Casual unprotected intercourse
(c) Rape
(b) In conjunction with pills L
(d) Both (a) and (c)
Pg 61 - 3rd para

50. Emergency contraceptive should be used within ____ hours of unprotected intercourse.
(a) 48 (b) 72
(c) 36 (d) 86
Pg 61 - 3rd para

51. To prevent further pregnancies, a surgical method called ____ is advised for male/female partner as a means of contraception.
(a) Radiation (b) Sterilization
(c) Abortion (d) Neutralization
Pg 61 - 4th para

52. Surgical method for terminal contraception work on which of the following grounds?
(a) Block gamete transport
(b) Block gamete generation
(c) Alter biochemical nature of gamete
(d) Destroys gamete permanently
Pg 61 - 4th para

53. Sterilization procedure in males is known as

(a) Tubectomy (b) Vasectomy

(c) Testectomy (d) Spermectomy

Pg 62 - 1st para

54. Sterilization procedure in females is known as

(a) Vasectomy (b) Tubectomy

(c) Hysterectomy (d) Ovotomy

Pg 62 - 1st para

55. In vasectomy, a small portion of which duct is removed and tied up?

(a) Testis (b) Epididymis

(c) Vas deferens (d) Vasa efferentia

Pg 62 - 1st para

56. In tubectomy, which part of reproductive system is removed and/or tied up?

(a) Cervix (b) Oviduct

(c) Uterus (d) Ovary

Pg 62 - 1st para

57. Which of the following is/are the ill-effect/effects of using contraceptives?

(a) Abdominal pain

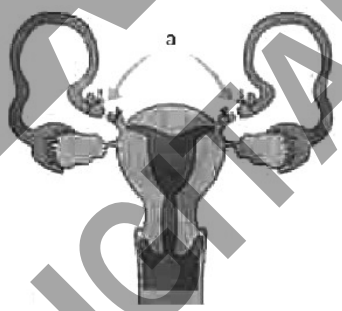
(b) Breast cancer

(c) Irregular menstrual bleeding

(d) All of these

Pg 62 - 2nd para

Figure given for questions 58 - 59.



58. Which portion of the female reproductive system is cut and ligated as in the figure?

(a) Uterus (b) Fallopian tubes

(c) Ovary (d) Cervix

Pg 60 - Fig.-4.4 (b)

59. The surgical procedure indicated in the figure is

(a) Tubectomy (b) Hysterectomy

(c) Vasectomy (d) Orchidectomy

Pg 60 - Fig.-4.4 (b)

60. Full form of RCH is

(a) Reproduction and Contraception Hazard

(b) Reproductive and Child Health Care

(c) Research and Care Development

(d) Reproductive Community Health Centre

Pg 58 - 1st para

61. India's population grew from 350 million to a billion in 2000 mainly due to

(i) Rapid decline in death rate (MMR and IMR).

(ii) Increase in number of people in reproducecible age group.

(iii) Increase in number of people in post-reproductive age group.

(a) (iii) only (b) (i) and (iii) only

(c) (i) and (ii) only (d) (i) only

Pg 59 - 2nd para

62. Motivation for smaller families in India can be provided by

(a) Slogans like'Hum Do Hamare Do'.

(b) Raising marriageable age (female-18 years and male-21 years).

(c) Giving incentive to couples with small families.

(d) All the above

Pg 59 - 3rd para

63. An ideal contraceptive should be

(A) User-friendly

(B) Easily available

(C) Effective and reversible

(D) With nor or least side-effects |

(a) A, B and C only (b) A and D only

(c) B and C only (d) All

Pg 59 - 4th para

64. Intentional or-Voluntary termination of pregnancy before full term is called ___.

(a) Medical transformation of pregnancy

(b) Median terminal pregnancy

(c) Medical Termination of Pregnancy

(d) None of these

Pg 62 - 3rd para

65. Nearly _____ MTPs are preformed in a year all over the world.

(a) 45 to 50 billion

(b) 45 to 50 million

(c) 45 to 50 thousands

(d) 45 to 50 lacs

Pg 62 - 3rd para

66. Government of India legalized MTP in the year ____.

(a) 1970 (b) 1971

(c) 1972 (d) 1973

Pg 62 - 3rd para

67. MTPs are considered relatively safe during ____ trimester of pregnancy.

(a) 1st (b) 2nd

(c) 3rd (d) None of these

Pg 62 - 3rd para

68. MTPs are harmful to mother and foetus during ____ trimester of pregnancy.

(a) 1st (b) 2nd

(c) 3rd (d) None of these

Pg 62 - 5th para

69. Misuse of amniocentesis has led to the misuse of ____.

(a) MTP (b) STD

(c) RTI (d)HIV

Pg 58 - 3rd para

70. Sexually transmitted diseases are also known as

(a) Venereal disease

(b) Vulnerable diseases

(c) Reproductive tract infections

(d) Both (a) and (c)

Pg 63 - 2nd para

71. Which infections can be transmitted by sharing of injection needles, surgical instruments, etc., with infected persons; through transfusion of blood or from an infected mother to the foetus?

(a) AIDS (b) Hepatitis B

(c) Genital herpes (d) Both (a) and (b)

Pg 63 - 3rd para

72. Which of the following STD is not completely curable?

(a) Gonorrhoea (b) Genital warts

(c) Genital herpes (d) Chlamydiasis

Pg 63 - 3rd para

73. Which of these options is correct with regards to statements X and Y?

Statement X: Some STDs do not show symptoms in females.

Statement Y: Some STDs in females may remain undetected for long time.

(a) Statement 'X' and 'Y' are correct and 'X' is the correct explanation for 'Y'.

(b) Only statement 'X' is correct.

(c) Only statement 'Y' is correct.

(d) Statement 'X' and 'Y' are correct.

Pg 63 - 3rd para

74. Severe complications of STDs lead to further complications like

(a) Abortion

(b) Still birth

(c) Ectopic pregnancy

(d) All of these

Pg 63 - 3rd para

75. The age group of ____ years is quite vulnerable to STDs.

(a) 10 to 19 (b) 15 to 22

(c) 17 to 27 (d) 15 to 24

Pg 63 - 3rd para

76. In order to prevent STDs, one of the following is not correct?

(a) Avoid sex with unknown partners/multipie partners.

(b) Go to an unqualified doctor at earliest instance of STD.

(c) Always use condoms during coitus.

(d) Participate in sex education sessions.

Pg 63 - 3rd para

77. The reasons for infertility can be

(a) Physical (b) Diseases

(c) Psychological (d) All of these

Pg 63 - 3rd para

78. In India, which gender is generally wrongly blamed for being infertile?

(a) Woman

(b) Man

(c) Either man or woman

(d) Genetic factors

Pg 64 - 1st para

79. In India, most of the infertility cases are because of the

(a) Male

(b) Female

(c) Either (a) and (b)

(d) Hereditary disorders

Pg 64 - 1st para

80. In order to combat infertility, special techniques are used like ____.

(a) Stimulated reproductive technologies

(b) Assisted reproductive technologies

(c) Fertile reproductive technologies

(d) In vitro fertilization

Pg 64 - 1st para

81. Fertilization outside the body in almost similar conditions as that in the body is termed as

(a) In vitro fertilization

(b) Ex vivo fertilization

(c) In vivo fertilization

(d) Ex vitro fertilization

Pg 64 - 2nd para

82. Which of the following defines 'Test Tube Baby' correctly?

(a) Ova and sperms are collected and mixed in test tube to form zygote.

(b) Ova and sperms are centrifuged in test tube to form zygote.

(c) Ova and sperms are induced to form zygote under controlled condition.

(d) Embryogenesis*is allowed to continue in test tube under controlled conditions.

Pg 64 - 2nd para

83. Under ZIFT procedure, zygote or embryos, with up to 8 blastomeres can be transferred into the

(a) Uterus (b) Placenta

(c) Fallopian tube (d) Cervix

Pg 64 - 2nd para

84. Transfer of an ovum from a donor to another female who can provide a suitable environment for fertilization is called

(a) ZIFT (b) GIFT

(c) ICSI (d) IUT

Pg 64 - 3rd para

85. Intracytoplasmic sperm injection is a specialized procedure in which the sperm is directly injected into the ____

(a) Ovary (b) Fallopian tube

(c) Ovum (d) Uterus

Pg 64 - 3rd para

86. In artificial insemination, the semen from husband/ healthy donor is artificially introduced into the ____.

(a) Vagina (c) Uterus

(b) Oviduct (d) Both (a) and (c)

Pg 64 - 3rd para

87. Given below are four methods (A-D) and their row action (i-iv) in achieving contraception. Select their co matching from the four options that follow.

Method	Mode of Action
(A) The pill	(i) Prevents sperms reaching cervix
(B) Condom	(ii) Prevents implantation
(C) Vasectomy	(iii) Prevents ovulation
(D) Copper T	(iv) Semen contains no sperms

(a) A-(iii),B-(iv),C-(i),D-(ii)

(b) A-(ii),B-(iii),C-(i),D-(iv)

(c) A-(iii),B-(i),C-(iv),D-(ii)

(d) A-(iv),B-(i),C-(ii),D-(iii)

Pg 60/61

88. Consider the statements given below regarding contraception and answer as directed thereafter:

(A) Medical termination of pregnancy (MTP) during first trimester is generally safe

(B) Generally, chances of conception are nil until mother breastfeeds the infant up to two years

(C) Intrauterine devices like copper-T are effective contraceptives

(D) Contraception pills may be taken up to one week after coitus to prevent conception

Which two of the above statements are correct?

(a) A, C (b) A, B

(c) B,C (d)C,D

Mixed

89. In the human female, menstruation can be deferred by the administration of

(a) combination of FSH and LH

(b) combination of estrogen and progesterone

(c) FSH only

(d) LHonly

Pg 61 - 2nd para

90. Certain characteristic demographic features of developing countries are

(a) high fertility, low or rapidly falling mortality rate, rapid population growth and very young age distribution

(b) high fertility, high density, rapidly rising mortality rate and very young age distribution

(c) high infant mortality, low fertility, uneven population growth and very young age distribution

(d) high mortality, high density, uneven population growth and very old age distribution

Pg 59 - mixed

91. Copper-T is a device that prevents

(a) implantation of blastocyst

(b) ovulation

(c) fertilization

(d) egg maturation

Pg 60 - 3rd para

92. Amniocentesis is a technique

(a) by which the essential amino acids in the body can be estimated

(b) by which any chromosomal anomalies in the foetus can be detected

(c) in which the sex of the foetus can be reversed

(d) that can be used for correcting genetic disorders of the foetus

Pg 58 - 3rd para

93. The present population of the world is about

(a) 500million (b) 100 billion

(c) 6 billion (d) 15 billion

Pg 59 - 2nd para

94. Test-tube baby is one who

(a) is born out of artificial insemination

(b) has undergone development in a test tube

(c) is born out of in vitro fertilization

(d) has been developed without fertilization

Pg 64 - 2nd para

STRUCTURAL ORGANIZATION IN ANIMALS

1. What do you call a group of similar cells along with intercellular substances performing a specific function?

(a) Organ (b) System

(c) Tissue (d) Cell membrane

Page 100, Para 1

2. To establish a system of organ system, what kind of interaction should occur between two or more organs to perform a common function?

(a) Physical (b) Chemical

(c) Both (a) and (b) (d) Symbiotic

Page 100, Para 2

3. In all complex animals, how many basic types of tissues are present?

(a) One (b) Two

(c) Three (d) Four

Page 100, Para 2

4. Which of the following is correct for epithelial tissue?

(a) It is present only as inner lining.

(b) It is present only as outer lining.

(c) Contains very less intercellular matrix.

(d) All of these

Page 101, Para 1

5. Which of the following contains simple epithelium as their lining?

(a) Ducts (b) Tubes

(c) Body cavities (d) All of these

Page 101, Para 1

6. Which of the following tissue has free surface?

(a) Connective tissue

(b) Muscular tissue

(c) Epithelial tissue

(d) Neural tissue

Page 101, Para 1

7. Which of the following is not a simple epithelium?

(a) Squamous (b) Cuboidal

(c) Columnar (d) Transition

Page 101, Para 2

8. On the basis of structural modification of cells, simple epithelium is divided into

(a) Squamous (b) Cuboidal

(c) Columnar (d) All of these

Page 101, Para 2

9. Which of the following sites contain squamous epithelium as its lining?

(a) Blood vessel (b) Air sac in lungs

(c) Intestine (d) Both (a) and (b)

Page 101, Para 3

10. Secretion and absorption are done by what kind of epithelium?

(a) Squamous epithelium

(b) Cuboidal epithelium

(c) Columnar epithelium

(d) Ciliated columnar epithelium

Page 101, Para 3

11. Which of the following epithelium contains flattened cells with irregular boundaries?

(a) Squamous epithelium

(b) Cuboidal epithelium

(c) Columnar epithelium

(d) Ciliated columnar epithelium

Page 101, Para 3

12. Cuboidal epithelium can be found in

(a) Distal convoluted tubule

(b) Proximal convoluted tubule

(c) Thin part of Henle's loop

(d) Both (a) and (b)

Page 101, Para 3

13. Brush border cuhbidal epithelium is found in

(a) PCT (b)DCT

(c) HL (d) CT

Page 101, Para 3

14. In columnar epithelium, where is nucleus located in cell?

(a) At the base (b) In the middle

(c) At the top (d) Nucleus is absent

Page 101, Para 3

15. If the cuboidal epithelium turns out to have microvilli on it, then what will it be called?
(a) Ciliated columnar epithelium
(b) Pseudo ciliated epithelium
(c) Squamous epithelium
(d) Brush border cuboidal epithelium

Page 101, Para 3

16. Where is columnar epithelium found?
(a) Lining of intestine
(b) Outer wall of stomach
(c) Proximal convoluted tubule
(d) All of these

Page 101, Para 3

17. Which epithelium lines the fallopian tube to move ovum and fertilized zygote in specific directions?
(a) Ciliated columnar
(b) Ciliated cuboidal
(c) Brush border columnar
(d) Brush border cuboidal

Page 101, Para 3

18. Where is ciliated epithelium found?
(a) Bronchioles (b) Fallopian tubes
(c) Both (a) & (b) (d) Lungs

Page 101, Para 3

19. Cuboidal or columnar epithelium specialized for secretions are called .
(a) Ciliated epithelium
(b) Glandular epithelium
(c) Both (a) & (b)
(d) Compound epithelium

Page 101, Para 3

20. Which of the following is unicellular glandular epithelium?
(a) Salivary gland
(b) Islets of Langerhans
(c) Goblet cells
(d) All of these

Page 102, Para 1

21. Which of the following is secreted by exocrine glands?
(a) Ear wax (b) Oil
(c) Milk (d) All of these

Page 102, Para 1

22. Whose products are called hormone and where are they secreted?
(a) Exocrine, Blood
(b) Endocrine, Blood
(c) Exocrine, lymph
(d) Endocrine, Fluid bathing the gland

Page 102, Para 1

23. If epithelium is made up of more than one layer, then it is known as
(a) Simple epithelium
(b) Compound epithelium
(c) Stratified epithelium
(d) Both (b) and (c)

Page 102, Para 2

24. Ducts of salivary glands and pancreatic duct are lined with which of the following epithelium?
(a) Simple squamous
(b) Compound epithelium
(c) Simple cuboidal
(d) Simple columnar

Page 102, Para 1

25. Which of the following functions of compound epithelium is minimal?
(a) Protection (b) Secretion
(c) Absorption (d) Both (b) and (c)

Page 102, Para 2

26. Where will we not find compound epithelium?
(a) Dry skin surface
(b) Moist surface of mouth
(c) Pharynx
(d) Alveoli

Page 102, Para 2

27. Which of the following type of functions are found in epithelial cells?
(a) Gap junction (b) Adhering junctions
(c) Tight junctions (d) All of these

Page 102, Para 3

28. Which of the following junction helps in rapid transfer of ions between adjacent cells?
(a) Gap junction
(b) Adhering junctions
(c) Tight junctions
(d) All of these

Page 102, Para 3

29. What is the function of tight Junction (Zonula occludens)?

(a) Protects from bacterial infection.

(b) Stop substance leaking across the tissue.

(c) Both (a) and (b)

(d) Elasticity to the tissue.

Page 102, Para 3

30. What is the function of adhering junction?

(a) Cementing to keep neighbouring cells together.

(b) Gives rigidity to tissue.

(c) Stop leaking substance across the tissue.

(d) All of these

Page 102, Para 3

31. What kind of tissue is goblet cell?

(a) Epithelial tissue

(b) Connective tissue

(c) Neural tissue

(d) All of these

Page 102, Para 1

32. Which of the following junctions facilitate the cells to communicate with each other by connecting the cytoplasm of adjoining cells?

(a) Tight junction

(b) Adhering junction

(c) Gap junction

(d) Both (b) and (c)

Page 102, Para 3

33. Sometimes big molecules can be transported to the neighbouring cell by which of the following junction?

(a) Adhering junction

(b) Gap junction

(c) Tight junctions

(d) Not possible for big molecules

Page 102, Para 3

34. Which tissue 'links and supports other tissues/ organs of the body?

(a) Epithelial tissue

(b) Connective tissue

(c) Neural tissue

(d) All of these

Page 102, Para 4

35. In which of the following connective tissues, elastin or collagen fibres are absent?

(a) Bone (b) Cartilage

(c) Blood (d) Adipose

Page 102 Para 4th & Page 103, Para 1

36. Connective tissue fibres provide which of the following characteristic features?

(a) Strength (b) Flexibility

(c) Elasticity (d) All of these

Page 103, Para 1

37. Matrix or ground substance in connective tissues is made up of .

(a) Thick proteins

(b) Elastin fibres

(c) Modified polysaccharides

(d) Modified triglycerides

Page 103, Para 1

38. Which of the following possess semi-fluid ground substance?

(a) Areolar tissue (b) Adipose tissue

(c) Blood (d) Both (a) and (b)

Page 103, Para 2

39. Which of the following pair belongs to loose connective tissue?

(a) Adipose and areolar

(b) Tendons and ligaments

(c) Cartilage and bones

(d) Areolar and bones

Page 103, Para 2

40. Which of the following is/are part of areolar tissue?

(a) Fibroblasts (b) Mast cells

(c) Macrophages (d) All of these

Page 103, Para 2

41. Where is the excess unused nutrition stored in our body?

(a) Areolar tissue (b) Adipose tissue

(c) Both (a) and (b) (d) Blood

Page 103, Para 2

42. In which of the following tissue, fibres and fibroblasts are completely packed?

(a) Dense regular connective tissue

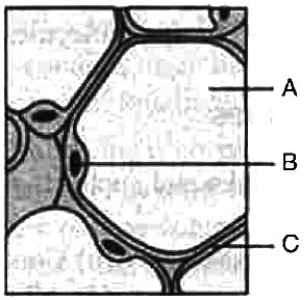
(b) Dense irregular connective tissue

(c) Both (a) and (b)

(d) Cartilage

Page 103, Para 2

43. What indicates A to C in the given below figure?



(a) A: Nucleus, B: Fat storage area, C: Plasma membrane

(b) A: Fat storage area, B: Nucleus, C: Plasma membrane

(c) A: Plasma membrane, B: Fat storage area, C: Nucleus

(d) A: Plasma membrane, B: Nucleus, C: Fat storage area

Page 103, Fig. 7.4(b)

44. Identify A to D in the given figure.

(a) A: Collagen fibres, B: Macrophage, C: Mast cell D: Fibroblast

(b) A: Macrophage, B: Fibroblast, C: Mast cell D: Collagen fibres

(c) A: Mast cell, B: Collagen fibres, C: Macrophage D: Fibroblast

(d) A: Fibroblast, B: Mast cell, C: Collagen fibres, D: Macrophage

Page 103, Fig. 7.4 (a)

45. Which of the following are examples of dense regular connective tissue?

(a) Ligaments

(b) Tendons

(c) Dura matter of brain

(d) All of these

Page 103, Para 3

46. Which of the following structures are joined by tendons?

(a) Skeletal muscles to bones.

(b) Skeletal muscles to ligaments.

(c) Bone to bone.

(d) Bones to ligaments.

Page 103, Para 3

47. Which of the following tissue is present in skin?

(a) Dense regular connective tissue

(b) Dense irregular connective tissue

(c) Ligaments

(d) Tendons

Page 103, Para 3

48. Which of the following is/are example of dense white fibrous regular connective tissue?

(a) Tendon (b) Cartilage

(c) Ligament (d) All of these

Page 103, Para 3

49. Which of the following is/are example of dense yellow fibrous regular connective tissue?

(a) Tendon (b) Cartilage

(c) Ligament (d) All of these

Page 103, Para 3

50. Specialized connective tissue includes

(a) Cartilage (b) Bones

(c) Blood (d) All of these

Page 104, Para 1

51. Where the cartilages are found in our body?

(a) Tip of nose

(b) Epiglottis

(c) Between vertebrae

(d) All of these

Page 104, Para 2

52. Select the false statement from the following.

(a) Most cartilage in vertebrate embryos are replaced by bones in adults.

(b) Bones are main tissues which provides structural framework to the body.

(c) Bones support and protects softer tissues and organs.

(d) Ligaments and tendons are specialized connective tissues.

Page 104, Mix

53. Which portion of cartilage provides it with solidity, pliability and resistance to compression?

(a) Collagen fibres

(b) Calcium content

(c) Intracellular material

(d) Chondrocytes

Page 104, Para 2

54. What provides bone with hard and non-pliable properties?

(a) Collagen fibres

(b) Calcium salts

(c) Both (a) and (b)

(d) None of these

Page 104, Para 3

55. Where are osteocytes located?

(a) In bones (b) In cartilage

(c) In blood (d) In epithelial tissue

Page 104, Para 3

56. Which of the following statement is not true?

(a) Limb bones are long bones.

(b) The function of long bones is weight bearing and bringing out movement.

(c) Bone marrows in all such long bones are sites of blood cell production.

(d) All the above

Page 104, Para 4

57. An example of liquid connective tissue is

(a) Bones (b) Cartilage

(c) Blood (d) All of these

Page 104, Para 4

58. Blood contains

(a) RBCs (b)WBCs

(c) Platelets (d) All of these

Page 104, Para 4

59. Bone cells present in the spaces of bones are called

(a) Cisternae (b) Lamellae

(c) Lacunae (d) Sinus

Page 104, Para 3

60. What is the main function of blood?

(a) Protection of body.

(b) Transport of various substances.

(c) pH buffering

(d) Maintaining osmolar balance.

Page 104, Para 4

61. The long cylindrical fibres that form a muscle is made of ____.

(a) Tonofibrils (b) Collagen fibres

(c) Fibroblasts (d) Myofibrils

Page 104, Para 5

62. When muscle cells receive stimulus, they get ____.

(a) Shorten (b) Lengthen

(c) Elongate (d) All of these

Page 104, Para 5

63. Muscular movements are intended to ____.

(a) Move body to adjust to changes in environment.

(b) Maintain position of various body parts.

(c) Both (a) and (b)

(d) None of these

Page 104, Para 5

64. Which of the following is typical skeletal muscle?

(a) Biceps

(b) Triceps

(c) Quadriceps femoris

(d) All of these

Page 104, Para 6

65. The sheath enclosing several bundles of muscle fibres is ____ tissue.

(a) Epithelial (b) Connective

(c) Both (a) and (b) (d) Neural

Page 104, Para 6

66. The striated or striped muscles are

(a) Skeletal muscle (b) Smooth muscles

(c) Cardiac muscles (d) Both (a) and (c)

Page 104, Para 6

67. Which of the following are involuntary muscles?

(a) Skeletal muscle

(b) Smooth muscles

(c) Cardiac muscles

(d) Both (b) and (c)

Page 105, Para 1

68. The muscles which can work by our will are

(a) Skeletal muscle (b) Smooth muscles

(c) Cardiac muscles (d) All of these

Page 104, Para 5

69. Which of the following is fusiform muscle?

(a) Cardiac muscle (b) Smooth muscle

(c) Both (a) and (b) (d) Skeletal muscle

Page 105, Para 1

70. The only branched muscle found in our body is
(a) Cardiac muscle (b) Smooth muscle
(c) Skeletal muscles (d) All of these
Page 105, Para 2

71. Smooth muscles are held together by ____.
(a) Connective tissue (b) Cell junctions
(c) Epithelial tissue (d) None of these
Page 105, Para 1

72. Where can we find smooth muscles?
(a) Artery (b) Vein .
(c) Stomach (d) All of these
Page 105, Para 1

73. The fusion of which of the following sticks the cardiac muscles together?
(a) Sarcoplasm
(b) Plasma membranes
(c) sarcoplasmic reticulum
(d) All of these
Page 105, Para 2

74. Intercalated discs in cardiac muscles provide ____.
(a) Tight junctions
(b) Communication junction
(c) Flexible junction
(d) All of these
Page 105, Para 2

75. Which of the following is not true for intercalated discs?
(a) It is found only in heart.
(b) Its communication junction.
(c) When one cell receives stimulus, its neighbours are also stimulated to contract due to the presence of intercalated disc.
(d) Found in skeletal muscles.
Page 105, Para 2

76. Which of the following are excitable cells?
(a) Hepatic cells (b) Neural cells
(c) Pancreatic cells (d) Renal cells
Page 105, Para 3

77. Which of the following cells are found in neural tissue?
(a) Neuron (b) Neuroglia
(c) Both (a) and (b) (d) None of these
Page 105, Para 3

78. Neuroglia approximately forms how much part of the neural tissue?
(a) > Half of the neural volume
(b) > One third of neural volume
(c) > One fourth of neural volume
(d) > One fifth of neural volume
Page 105, Para 3

79. The electrical disturbance generated in neurons travels through .
(a) Neuroglia
(b) Cytoplasm
(c) Plasma membrane
(d) All of these
Page 105, Para 4

80. What kind of action can be caused by neurons?
(a) Stimulatory (b) Inhibitory
(c) Both (a) and (b) (d) Excitatory
Page 106, Para 1

81. What is the importance of organized organ system?
(a) Optimum efficiency of cells
(b) Coordinated activity of cells
(c) Both (a) and (b)
(d) None of these
Page 106, Para 2

82. Heart contains which of the following kind of tissue?
(a) Epithelial tissue
(b) Cardiac muscular tissue
(c) Connective tissue
(d) All of these
Page 106, Para 2

83. What is discernible trend?
(a) Complexity of organ system
(b) Evolutionary trend
(c) Inheritance trend
(d) All of these
Page 106, Para 2

84. What do you call the study of form or externally visible features?
(a) Physiology (b) Morphology
(c) Anthropology (d) None of these
Page 106, Para 2

85. What do you call the study of morphology of internal' organs in animals?
(a) Physiology
(b) Anatomy
(c) Internal morphology
(d) None of these

Page 106, Para 2

86. The size of cockroach ranges from
(a) $\frac{1}{4}''$ to $3''$ (b) 1 t $3''$
(c) 2 to $3''$ (d) $\frac{1}{4}''$ to $\frac{3}{4}''$

Page 111, Para 2

87. Cockroach is
(a) Omnivorous (b) Nocturnal
(c) Cursorial (d) All of these

Page 111, Para 2

88. Which one of the following statements is correct' about cockroach?
(a) Generally brown and black colour.
(b) Pest and vectors of several disease.
(c) Found in damp places.
(d) All of these

Page 111, Para 2

89. The zoological name of cockroach is
(a) Periplaneta americana
(b) Pheretima posthuma
(c) Rana tigrina
(d) Naja naja

Page 111, Para 3

90. In each segment, the exoskeleton has hardened plates in cockroach and it is known as"
(a) Sclerites (b) Sternum
(c) Carapace (d) All of these

Page 111, Para 2

91. The body of cockroach is segmented and divisible into three distinct regions known as
(a) Head (b) Thorax
(c) Abdomen (d) All of these

Page 111, Para 2

92. The head of cockroach is formed by fusion of how many segments?
(a) 4 (b) 5
(c) 6 (d) 8

Page 112, Para 1

93. Cockroach has which type of mouth parts?
(a) Biting and chewing type
(b) Siphoning type
(c) Sponging type
(d) All of these

Page 112, Para 1

94. The alimentary canal in cockroach is divided into three regions namely
(a) Foregut (b) Midgut
(c) Hindgut (d) All of these

Page 113, Para 1

95. In which of the following place food is stored in cockroach?
(a) Pharynx (b) Oesophagus
(c) Crop (d) Gizzard

Page 113, Para 1

96. Proventriculus is also known as
(a) Pharynx (b) Oesophagus
(c) Crop (d) Gizzard

Page 113, Para 1

97. Gizzard in cockroach is characterized by
(a) Outer circular muscles
(b) Inner thick cuticle
(c) Six chitinous teeth
(d) All of these

Page 113, Para 1

98. Find the incorrect statement about gut of cockroach.
(a) Gizzard helps in grinding of food.
(b) Entire foregut is lined with cuticle.
(c) Oesophagus opens into sac like structure called gizzard.
(d) 6-8 blind tubules (hepatic caecae) is present at the junction of foregut and hindgut.

Page 113, Para 1

99. Gastric caecae is used to secrete
(a) Haemolymph (b) Digestive juice
(c) Uric acid (d) Sperm

Page 113, Para 1

100. How many filamentous Malpighian tubules are found in cockroach?
(a) 100-150 (b) 50-100
(c) 150-200 (d) 200-250

Page 113, Para 1

101. A ring of 6-8 blind tubules present at the junction of foregut and midgut in cockroach is known as
(a) Hepatic caecae
(b) Gastric caecae
(c) Both (a) and (b)
(d) Malpighian tubules
Page 113, Para 1

102. The hindgut of cockroach contains
(a) Ileum (b) Colon
(c) Rectum (d) All of these
Page 113, Para 1

103. Haemolymph of cockroach consists of
(a) Plasma (b) Haemocyte
(c) Both (a) and (b) (d) None of these
Page 113, Para 2

104. Which type of blood vascular system is found in cockroach?
(a) Open type (b) Closed type
(c) Both (a) and (b) (d) None of these
Page 113, Para 2

105. Select the correct statements about blood vascular system of cockroach.
(a) Heart is an elongated muscular tube.
(b) Heart has funnel shaped chamber with ostia on either side.
(c) Blood vessels are poorly developed and open into haemocoel.
(d) All the above
Page 113, Para 2

106. In cockroach, the exchange of respiratory gases occurs at the level of
(a) Trachea (b) Tracheal tubes
(c) Tracheoles (d) All of these
Page 113, Para 3

107. Alary muscles are found in
(a) Frog (b) Earthworm
(c) Cockroach (d) Hookworm
Page 113, Para 2

108. How many pairs of spiracles are present on the surface of cockroach?
(a) 5 pairs (b) 15 pairs
(c) 10 pairs (d) 20 pairs
Page 113, Para 3

109. In cockroach following organ help in excretion
(a) Fat body
(b) Nephrocyte
(c) Urecose gland
(d) All of these
Page 114, Para 2

110. Malpighian tubules are lined with
(a) Glandular and non-ciliated epithelium .
(b) Non-glandular and non-ciliated epithelium.
(c) Glandular and ciliated epithelium.
(d) Non-glandular and ciliated epithelium.
Page 114, Para 2

111. Cockroach is
(a) Ammonotelic (b) Ureotelic
(c) Uricotelic (d) None of these
Page 114, Para 2

112. In cockroach, excretion is performed by
(a) Seminiferous tubules
(b) Uriniferous tubules
(c) Malpighian tubules
(d) Rennet cells
Page 114, Para 2

113. How many ganglia lie in thorax and abdomen of the cockroach?
(a) 3 to 6 (b) 6 and 3
(c) 2 and 1 (d) 1 and 2
Page 114, Para 3

114. If the head of cockroach is cut off, then it will live for as long as
(a) 2 weeks (b) 1 week
(c) 3 weeks (d) 4 weeks
Page 114, Para 3

115. Where food is stored in cockroach?
(a) Pharynx (b) Oesophagus
(c) Crop (d) Gizzard
Page 113, Para 1

116. Which of the following are sense organs of cockroach?
(a) Antennae and eyes
(b) Maxillary and labial palps
(c) Anal cerci
(d) All of these
Page 114, Para 3

117. Each compound eye of cockroach consists of how many ommatidia?
(a) 1000 (b) 2000
(c) 3000 (d) 4000
Page 114, Para 3

118. What is the shape of ommatidia in cockroach?
(a) Triangular (b) Square
(c) Hexagonal (d) Pentagonal
Page 114, Para 3

119. Which of the following features belongs to cockroach?
(a) Uricotelism (b) Nocturnal vision
(c) Dioecious (d) All of these
Page 114, Para 3

120. Mosaic vision means
(a) More sensitivity and less resolution.
(b) More sensitivity and more resolution.
(c) Less sensitivity and less resolution.
(d) Less sensitivity and more resolution.
Page 114, Para 3

121. A pair of testes in cockroach lies in
(a) 2-A abdominal segment
(b) 4-6 abdominal segment
(c) 4-7 abdominal segment
(d) 6-8 abdominal segment
Page 114, Para 4

122. Mushroom shaped gland is present in which segment of the cockroach, where it acts as accessory reproductive gland?
(a) 2-A abdominal segment
(b) 6-7 abdominal segment
(c) 4-7 abdominal segment
(d) 6-8 abdominal segment
Page 114, Para 4

123. Where sperm is glued together in cockroach?
(a) Seminal vesicle (b) Phallomere
(c) Ejaculatory duct (d) None of these
Page 114, Para 4

124. Where sperm is stored in cockroach?
(a) Seminal vesicle (b) Phallomere
(c) Ejaculatory duct (d) None of these
Page 114, Para 4

125. Pair of testes in cockroach lies in
(a) 2-4 abdominal segment
(b) 2-6 abdominal segment
(c) 4-7 abdominal segment
(d) 6-8 abdominal segment
Page 114, Para 4

126. External genitalia in cockroach is represented by
(a) Male gonapophysis
(b) Phallomere
(c) Ejaculatory duct
(d) Both (a) and (b)
Page 114, Para 4

127. Each ovary in cockroach is made up of how many ovarian tubules or ovarioles?
(a) 6 (b) 4
(c) 8 (d) 10
Page 114, Para 4

128. Match the columns.

Column I	**Column II**
(1) Pair of spermatheca	(A) 2 - 6th segment (Abdominal)
(2) Ovary	(B) 6th segment (Abdominal)
(3) Mushroom shaped accessory reproductive gland	(C) 6 - 7th segment (Abdominal)
(4) Anal cerci	(D) 10th segment

(a) 1:B, 2:A, 3:C, 4:D
(b) 1:C, 2:B, 3:D, 4:A
(c) 1:D, 2:C, 3:A, 4:B
(d) l:A, 2:D, 3:B, 4:C
Page 114, Para 4

129. How many oothecae are produced by fernali cockroach?
(a) 9-10 (b) 14-16
(c) 13 (d) 1-2
Page 115, Para 1

130. Nymph of cockroach grows by moulting about, ____ times to reach the adult form.
(a) 12 (b) 11
(c) 13 (d) 10
Page 115, Para 1

131. Which one of the following statement is incorrect about cockroach?

(a) They are pest because they destroy food and contaminate it with their smelly excreta.

(b) All species have economic importance.

(c) Development in P. *americana* is paurometabolous type.

(d) Next to last nymphal stage has wing pad.

Page 115, Para 2

132. Which one of the following statement is correct about cockroach?

(a) Anal style is present only in male cockroach.

(b) Anal cerci are present only in female cockroach.

(c) Each eye consists of about 1000 hexagonal ommatidia.

(d) Each ootheca contains 12-14 eggs.

Mixed

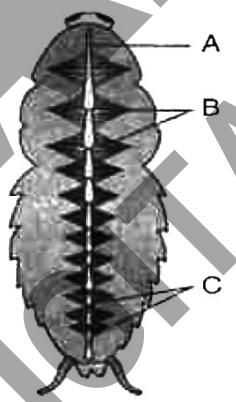
133. Male and female cockroach is morphologically distinguished by the presence of

(a) Anal cerci (b) Anal style

(c) Compound eyes (d) All of these

Page 112, Para 2

134. Identify A, B and C in the given figure.



(a) A: Chambers of heart, B: Anterior aorta, C: Alary muscles

(b) A: Alary muscles, B: Chambers of heart, C: Anterior aorta

(c) A: Anterior aorta, B: Chambers of heart, C: Alary muscles

(d) A: Anterior aorta, B: Alary muscles, C: Chambers of heart

Page 112, Para 2

135. Which one of the following is correct pairing of a body part and the kind of muscle tissue that moves it?

(a) biceps of upper arm - smooth muscle fibres

(b) abdominal wall - smooth muscle

(c) iris - involuntary smooth muscle

(d) heat wall - involuntary unstriated muscle

Mixed

136. The epithelial tissue present on the inner surface of bronchioles and Fallopian tubes is

(a) glandular (b) ciliated

(c) squamous (d) cuboidal

Page 101, Para 3

137. The cell junctions called tight, adhering and gap junctions are found in

(a) connective tissue (b) epithelial tissue

(c) neural tissue (d) muscular tissue

Page 101, Para 3

138. Which one of the following correctly describes the location of some body parts in the earthworm Pheretimal

(a) four pairs of spermathecae in 4 - 7 segments

(b) one pair of ovaries attached at intersegmental septum of 14lh and 15th segments

(c) two pairs of testes in 10th and 11th segments

(d) two pairs of accessory glands in 16 -18 segments

Page 114, Para 4

139. The kind of tissue that forms the supportive structure in our pinna (external ears) is also found in

(a) nails (b) ear ossicles

(c) tip of the nose (d) vertebrae

Page 104, Para 2

140. In which one of the following preparations you're likely to come across cell junctions frequently?

(a) thrombocytes (b) tendon

(c) hyaline cartilage (d) ciliated epithelium

Page 102, Para 3

141. Areolar connective tissue joins

(a) integument with muscles

(b) bones with muscles

(c) bones with bones

(d) fat body with muscles

Page 103, Para 2

142. Male and female Cockroaches can be distinguished externally through

(a) Anal styles in male

(b) Anal cerci in female

(c) Anal style and antennae in females

(d) Both (b) and (c)

Page 112, Para 2

143. Characteristics of smooth muscle fibres are

(a) Spindle-shaped unbranched unstriated, uninucleate and involuntary

(b) Spindle shaped unbranched, unstriped multinucleate and involuntary

(c) Cylindrical, unbranched unstriped multinucleate and involuntary

(d) Cylindrical, unbranched striated, multinucleate and voluntary

Page 105, Para 1

144. Which one of the following types of cell is involved in making of the inner walls of large blood vessels?

(a) Cuboidal epithelium

(b) Columnar epithelium

(c) Squamous epithelium

(d) Stratified epithelium

Page 101, Para 3

145. To which one of the following categories does the adipose tissue belong?

(a) Epithelial (b) Connective

(c) Muscular (d) Neural

Page 103, Para 2

146. Which one of the following is not a connective tissue?

(a) Bone (b) Cartilage

(c) Blood (d) Muscles

Page 103, Para 1

147. Which one of the following statements is true for cockroach?

(a) The number of ovarioles in each ovary is ten.

(b) The larval stage is called caterpillar.

(c) Anal styles are absent in females.

(d) They are ureotelic.

Cockroach, Mixed

148. Match the following and choose the correct option

(a) Adipose tissue	(i) Nose
(b) Stratified epithelium	(ii) Blood
(c) Hyaline cartilage	(iii) Skin
(d) Fluid connective tissue	(iv) Fat storage

Options:

(a) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

(b) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)

(c) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

(d) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

Mixed Epituelium + connective

149. Match the following with reference to Cockroach and choose the correct option:

(a) Phallomere	(i) Chain of developing ova.
(b) Gonopore	(ii) Bundles of sperm.
(c) Spermatophore	(iii) Opening of the ejaculatory duct.
(d) Ovarioles	(iv) The external genitalia.

Options:

(a) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)

(b) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)

(c) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

(d) (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

Page 114, Para 4

ANSWER KEY

DIGESTION AND ABSORPTION

1. b	2. d	3. b	4. d	5. a	6. c
7. a	8. d	9. c	10. a	11. d	12. c
13. b	14. a	15. a	16. d	17. a	18. a
19. c	20. b	21. a	22. c	23. c	24. b
25. b	26. d	27. b	28. b	29. b	30. a
31. c	32. a	33. c	34. c	35. a	36. b
37. d	38. a	39. d	40. b	41. d	42. d
43. d	44. d	45. a	46. b	47. d	48. a
49. a	50. c	51. c	52. d	53. d	54. b
55. c	56. a	57. a	58. c	59. d	60. c
61. d	62. b	63. d	64. d	65. d	66. d
67. c	68. d	69. c	70. a	71. b	72. b
73. b	74. c	75. c	76. d	77. b	78. c
79. c	80. d	81. b	82. d	83. c	84. c
85. c	86. c	87. d	88. b	89. c	90. a
91. c	92. c	93. c	94. c	95. b	96. a
97. c	98. c	99. a	100. b	101. c	102. b
103. d	104. a	105. d	106. c	107. d	108. c
109. a	110. c	111. c	112. d	113. d	114. c
115. d	116. b	117. d	118. b	119. d	120. a
121. d	122. d	123. d	124. c	125. a	126. d
127. d	128. c	129. d	130. a	131. b	132. c
133. b	134. d	135. d	136. d	137. d	138. a
139. d	140. c	141. d	142. d	143. c	144. a
145. c	146. d	147. c	148. b	149. b	150. a
151. c	152. d	153. c	154. d	155. c	156. d
157. d	158. d	159. a	160. a	161. b	162. b
163. a	164. b	166. b	167. a	168. d	169. b
170. a	171. b	172. d	173. d	174. a	175. b
176. b	177. b	178. d	179. c	180. a	181. b
182. b	183. c	184. d	185. b	186. d	187. a

BODY FLUIDS AND CIRCULATION

1. b	2. c	3. a	4. a	5. c	6. b
7. a	8. b	9. b	10. d	11. d	12. a
13. c	14. b	15. b	16. c	17. a	18. d
19. c	20. b	21. b	22. c	23. a	24. b

25. c	**26.** b	**27.** d	**28.** b	**29.** d	**30.** c
31. d	**32.** a	**33.** a	**34.** c	**35.** d	**36.** d
37. c	**38.** b	**39.** c	**40.** a	**41.** c	**42.** c
43. c	**44.** c	**45.** c	**46.** d	**47.** d	**48.** b
49. a	**50.** b	**51.** b	**52.** a	**53.** b	**54.** c
55. b	**56.** b	**57.** c	**58.** c	**59.** b	**60.** d
61. c	**62.** b	**63.** c	**64.** b	**65.** a	**66.** c
67. c	**68.** a	**69.** a	**70.** d	**71.** c	**72.** b
73. d	**74.** a	**75.** d	**76.** b	**77.** d	**78.** a
79. a	**80.** c	**81.** a	**82.** d	**83.** b	**84.** d
85. c	**86.** d	**87.** c	**88.** a	**89.** c	**90.** b
91. a	**92.** c	**93.** c	**94.** a	**95.** c	**96.** c
97. b	**98.** c	**99.** c	**100.** a	**101.** a	**102.** d
103. c	**104.** c	**105.** a	**106.** d	**107.** b	**108.** a
109. d	**110.** b	**111.** d	**112.** a	**113.** d	**114.** a
115. a	**116.** a	**117.** c	**118.** c	**119.** d	**120.** a
121. d	**122.** a	**123.** c	**124.** a	**125.** a	**126.** a
127. d	**128.** b	**129.** b	**130.** b	**131.** a	**132.** a
133. b	**134.** c	**135.** a	**136.** d	**137.** b	**138.** b
139. b	**140.** d	**141.** a	**142.** c	**143.** c	**144.** c
145. d	**146.** a	**147.** d	**148.** d	**149.** c	**150.** d
151. b	**152.** d	**153.** d	**154.** a	**155.** b	**156.** c
157. c	**158.** b	**159.** a	**160.** c	**161.** d	**162.** a
163. c	**164.** d	**165.** c	**166.** b	**167.** c	**168.** d
169. a	**170.** c	**171.** a	**172.** c	**173.** b	**174.** b
175. c	**176.** d	**177.** d	**178.** d	**179.** a	**180.** a
181. c	**182.** c	**183.** b	**184.** d	**185.** d	**186.** b
187. d	**188.** a	**189.** a	**190.** a	**191.** a	**192.** c
193. a	**194.** c	**195.** c	**196.** c	**197.** a	**198.** b
199. a	**200.** d	**201.** d	**202.** b	**203.** c	**204.** b
205. a	**206.** a	**207.** d	**208.** c	**209.** b	**210.** d
211. a	**212.** a	**213.** b	**214.** c	**215.** b	**216.** d
217. c	**218.** b	**219.** d	**220.** b	**221.** d	**222.** b
223. c	**224.** b	**225.** a	**226.** d	**227.** b	**228.** b
229. c	**230.** c	**231.** a	**232.** b	**233.** b	**234.** b
235. a	**236.** a	**237.** c	**238.** d	**239.** b	**240.** b
241. c	**242.** b	**243.** b	**244.** d		

EXCRETORY PRODUCTS AND THEIR ELIMINATION

1. d	**2.** d	**3.** a	**4.** a	**5.** d	**6.** d
7. b	**8.** d	**9.** c	**10.** **c**	**11.** c	**12.** b
13. a	**14.** d	**15.** d	**16.** d	**17.** b	**18.** d
19. d	**20.** a	**21.** a	**22.** c	**23.** b	**24.** d
25. c	**26.** d	**27.** a	**28.** d	**29.** c	**30.** d
31. a	**32.** d	**33.** a	**34.** b	**35.** c	**36.** a
37. c	**38.** c	**39.** b	**40.** b	**41.** b	**42.** a
43. c	**44.** a	**45.** d	**46.** b	**47.** c	**48.** d
49. b	**50.** a	**51.** d	**52.** c	**53.** c	**54.** b
55. c	**56.** d	**57.** c	**58.** a	**59.** d	**60.** b
61. d	**62.** d	**63.** c	**64.** d	**65.** d	**66.** a
67. c	**68.** d	**69.** d	**70.** c	**71.** a	**72.** d
73. b	**74.** c	**75.** b	**76.** d	**77.** c	**78.** b
79. d	**80.** d	**81.** a	**82.** d	**83.** d	**84.** c
85. d	**86.** b	**87.** a	**88.** a	**89.** a	**90.** b
91. d	**92.** b	**93.** a	**94.** b	**95.** b	**96.** d
97. c	**98.** d	**99.** c	**100.** a	**101.** b	**102.** c
103. b	**104.** b	**105.** b	**106.** b	**107.** b	**108.** c
109. c	**110.** c	**111.** d	**112.** b	**113.** c	**114.** b
115. a	**116.** a	**117.** b	**118.** b	**119.** b	**120.** a
121. a	**122.** a	**123.** c	**124.** b	**125.** b	**126.** b
127. b	**128.** a	**129.** a	**130.** b	**131.** d	**132.** b
133. c	**134.** c	**135.** c			

LOCOMOTION AND MOVEMENT

1. a	**2.** d	**3.** a	**4.** d	**5.** d	**6.** d
7. d	**8.** c	**9.** d	**10.** b	**11.** d	**12.** b
13. d	**14.** d	**15.** a	**16.** b	**17.** **d**	**18.** d
19. c	**20.** d	**21.** c	**22.** b	**23.** b	**24.** d
25. d	**26.** d	**27.** d	**28.** c	**29.** b	**30.** a
31. d	**32.** b	**33.** c	**34.** a	**35.** d	**36.** a
37. c	**38.** d	**39.** b	**40.** a	**41.** b	**42.** b
43. c	**44.** d	**45.** d	**46.** d	**47.** d	**48.** c
49. d	**50.** c	**51.** b	**52.** b	**53.** a	**54.** d
55. a	**56.** d	**57.** b	**58.** b	**59.** c	**60.** c
61. a	**62.** b	**63.** a	**64.** a	**65.** b	**66.** b
67. d	**68.** c	**69.** b	**70.** a	**71.** d	**72.** c
73. c	**74.** c	**75.** a	**76.** d	**77.** b	**78.** a

79. d	**80.** d	**81.** c	**82.** c	**83.** c	**84.** b
85. a	**86.** b	**87.** b	**88.** c	**89.** d	**90.** c
91. d	**92.** d	**93.** b	**94.** c	**95.** b	**96.** a
97. a	**98.** c	**99.** c	**100.** a	**101.** a	**102.** b
103. c	**104.** c	**105.** d	**106.** a	**107.** d	**108.** c
109. d	**110.** d	**111.** a	**112.** a	**113.** a	**114.** d
115. a	**116.** b	**117.** a	**118.** d	**119.** a	**120.** a

NEURAL CONTROL AND CO-ORDINATION

1. c	**2.** a	**3.** a	**4.** c	**5.** c	**6.** a
7. a	**8.** c	**9.** c	**10.** A-c, B-a	**11.** a	**12.** c
13. c	**14.** c	**15.** b	**16.** d	**17.** d	**18.** b
19. a	**20.** d	**21.** d	**22.** c	**23.** a	**24.** a
25. c	**26.** c	**27.** b	**28.** c	**29.** a	**30.** b
31. b	**32.** b	**33.** c	**34.** c	**35.** b	**36.** d
37. b	**38.** d	**39.** b	**40.** d	**41.** d	**42.** d
43. a	**44.** d	**45.** a	**46.** d	**47.** c	**48.** a
49. d	**50.** d	**51.** a	**52.** a	**53.** d	**54.** b
55. d	**56.** d	**57.** b	**58.** d	**59.** c	**60.** d
61. c	**62.** c	**63.** a	**64.** c	**65.** a	**66.** c
67. b	**68.** c	**69.** c	**70.** a	**71.** c	**72.** a
73. b	**74.** d	**75.** b	**76.** d	**77.** d	**78.** a
79. b	**80.** a	**81.** d	**82.** d	**83.** b	**84.** d
85. b	**86.** c	**87.** c	**88.** b	**89.** b	**90.** a
91. c	**92.** d	**93.** c	**94.** d	**95.** c	**96.** d
97. c	**98.** d	**99.** d	**100.** d	**101.** d	**102.** c
103. a	**104.** c	**105.** b	**106.** d	**107.** a	**108.** b
109. b	**110.** b	**111.** d	**112.** d	**113.** a	**114.** b
115. d	**116.** a	**117.** c	**118.** b	**119.** d	**120.** d
121. d	**122.** b	**123.** c	**124.** c	**125.** c	**126.** a
127. c	**128.** b	**129.** a			

CHEMICAL CO-ORDINATION AND INTEGRATION

1. d	**2.** c	**3.** b	**4.** d	**5.** b	**6.** d
7. b	**8.** d	**9.** c	**10.** a	**11.** b	**12.** a
13. d	**14.** c	**15.** d	**16.** d	**17.** d	**18.** a,d
19. d	**20.** c	**21.** c	**22.** c	**23.** b	**24.** d
25. c	**26.** c	**27.** b	**28.** b	**29.** c	**30.** c
31. a	**32.** b	**33.** c	**34.** a	**35.** c	**36.** c
37. d	**38.** d	**39.** c	**40.** d	**41.** c	**42.** a

43. c	**44.** c	**45.** b	**46.** d	**47.** a	**48.** d
49. c	**50.** c	**51.** c	**52.** b	**53.** d	**54.** d
55. d	**56.** d	**57.** d	**58.** c	**59.** a	**60.** b
61.. d	**62.** a	**63.** a	**64.** b	**65.** c	**66.** a
67. d	**68.** c	**69.** d	**70.** c	**71.** d	**72.** c
73. c	**74.** a	**75.** c	**76.** d	**77.** b	**78.** d
79. d	**80.** d	**81.** d	**82.** d	**83.** d	**84.** d
85. d	**86.** d	**87.** d	**88.** d	**89.** d	**90.** d
91. c	**92.** d	**93.** c	**94.** c	**95.** c	**96.** c
97. d	**98.** d	**99.** b	**100.** a	**101.** d	**102.** c
103. b	**104.** a	**105.** b	**106.** d	**107.** d	**108.** c
109. d	**110.** b	**111.** d	**112.** c	**113.** c	**114.** b
115. d	**116.** d	**117.** c	**118.** d	**119.** a	**120.** a
121. b	**122.** c				

HUMAN REPRODUCTION

1. d	**2.** c	**3.** a	**4.** b	**5.** c	**6.** c
7. c	**8.** b	**9.** b	**10.** c	**11.** c	**12.** b
13. b	**14.** c	**15.** d	**16.** b	**17.** c	**18.** b
19. c	**20.** b	**21.** b	**22.** a	**23.** b	**24.** c
25. d	**26.** c	**27.** c	**28.** d	**29.** c	**30.** c
31. b	**32.** a	**33.** c	**34.** a	**35.** b	**36.** b
37. c	**38.** b	**39.** d	**40.** d	**41.** b	**42.** b
43. d	**44.** b	**45.** b	**46.** c	**47.** d	**48.** d
49. b	**50.** c	**51.** d	**52.** b	**53.** c	**44.** b
55. c	**56.** b	**57.** b	**58.** c	**59.** a	**60.** d
61. b	**62.** c	**63.** b	**64.** b	**65.** d	**66.** b
67. c	**68.** c	**69.** b	**70.** b	**71.** b	**72.** d
73. c	**74.** c	**75.** a	**76.** d	**77.** c	**78.** c
79. a	**80.** d	**81.** c	**82.** d	**83.** d	**84.** a
85. c	**86.** c	**87.** b	**88.** b	**89.** b	**90.** c
91. c	**92.** d	**93.** c	**94.** c	**95.** d	**96.** c
97. c	**98.** c	**99.** b	**100.** c	**101.** b	**102.** a
103. c	**104.** d	**105.** b	**106.** d	**107.** d	**108.** d
109. a	**110.** c	**111.** b	**112.** b	**113.** c	**114.** d
115. b	**116.** b	**117.** c	**118.** b	**119.** a	**120.** b
121. c	**122.** b	**123.** b	**124.** c	**125.** b	**126.** c
127. c	**128.** c	**129.** b	**130.** d	**131.** a	**132.** b
133. c	**134.** d	**135.** a	**136.** b	**137.** c	**138.** a
139. c	**140.** c	**141.** d	**142.** d	**143.** d	**144.** b
145. c	**146.** b	**147.** c	**148.** d	**149.** b	**150.** d

151. b	152. c	153. b	154. b	155. c	156. c
157. b	158. a	159. a	160. a	161. d	162. c
163. b	164. c	165. d	166. a	167. a	168. a
169. a	170. b	171. b	172. c	173. c	174. c
175. d	176. a	177. b	178. b	179. b	180. d
181. b	182. b	183. b	184. a	185. c	186. b
187. a	188. d	189. b	190. b	191. b	192. a
193. c	194. d	195. c	196. c	197. b	198. b
199. b	200. a	201. b	202. b	203. b	204. b
205. c	206. b	207. b	208. b	209. c	210. b
211. b	212. b	213. c	214. d	215. b	216. d
217. b	218. c	219. c	220. c	221. d	222. c
223. a	224. d	225. a	226. a	227. d	228. a
229. d	230. b	231. d	232. c	233. b	234. d
235. b	236. c	237. a	238. a	239. c	240. c
241. a	242. c	243. d	244. d	245. b	246. b
247. a	248. b	249. c	250. b	251. c	252. b
253. d	254. b	255. c	256. a	257. a	258. a

HUMAN REPRODUCTION

1. d	2. c	3. a	4. b	5. c	6. c
7. c	8. b	9. b	10. c	11. c	12. b
13. b	14. c	15. d	16. b	17. c	18. b
19. c	20. b	21. b	22. a	23. b	24. c
25. d	26. c	27. c	28. d	29. c	30. c
31. b	32. a	33. c	34. a	35. b	36. b
37. c	38. b	39. d	40. d	41. b	42. b
43. d	44. b	45. b	46. c	47. d	48. d
49. b	50. c	51. d	52. b	53. c	54. b
55. c	56. b	57. b	58. c	59. a	60. d
61. b	62. c	63. b	64. b	65. d	66. b
67. c	68. c	69. b	70. b	71. b	72. d
73. c	74. c	75. a	76. d	77. c	78. c
79. a	80. d	81. c	82. d	83. d	84. a
85. c	86. c	87. b	88. b	89. b	90. c
91. c	92. d	93. c	94. c	95. d	96. c
97. c	98. c	99. b	100. c	101. b	102. a
103. c	104. d	105. b	106. d	107. d	108. d
109. a	110. c	111. b	112. b	113. c	114. d
115. b	116. b	117. c	118. b	119. a	120. b
121. c	122. b	123. b	124. c	125. b	126. c
127. c	128. c	129. b	130. d	131. a	132. b

133. c	**134.** d	**135.** a	**136.** b	**137.** c	**138.** a
139. c	**140.** c	**141.** d	**142.** d	**143.** d	**144.** b
145. c	**146.** b	**147.** c	**148.** d	**149.** b	**150.** d
151. b	**152.** c	**153.** b	**154.** b	**155.** c	**156.** c
157. b	**158.** a	**159.** a	**160.** a	**161.** d	**162.** c
163. b	**164.** c	**165.** d	**166.** a	**167.** a	**168.** a
169. a	**170.** b	**171.** b	**172.** c	**173.** c	**174.** c
175. d	**176.** a	**177.** b	**178.** b	**179.** b	**180.** d
181. b	**182.** b	**183.** b	**184.** a	**185.** c	**186.** b
187. a	**188.** d	**189.** b	**190.** b	**191.** b	**192.** a
193. c	**194.** d	**195.** c	**196.** c	**197.** b	**198.** b
199. b	**200.** a	**201.** b	**202.** b	**203.** b	**204.** b
205. c	**206.** b	**207.** b	**208.** b	**209.** c	**210.** b
211. b	**212.** b	**213.** c	**214.** d	**215.** b	**216.** d
217. b	**218.** c	**219.** c	**220.** c	**221.** d	**222.** c
223. a	**224.** d	**225.** a	**226.** a	**227.** d	**228.** a
229. d	**230.** b	**231.** d	**232.** c	**233.** b	**234.** d
235. b	**236.** c	**237.** a	**238.** a	**239.** c	**240.** c
241. a	**242.** c	**243.** d	**244.** d	**245.** b	**246.** b
247. a	**248.** b	**249.** c	**250.** b	**251.** c	**252.** b
253. d	**254.** b	**255.** c	**256.** a	**257.** a	**258.** a

REPRODUCTIVE HEALTH

1. d	**2.** b	**3.** c	**4.** b	**5.** d	**6.** c
7. b	**8.** b	**9.** d	**10.** b	**11.** b	**12.** a
13. d	**14.** b	**15.** c	**16.** d	**17.** c	**18.** b
19. d	**20.** c	**21.** b	**22.** c	**23.** b	**24.** c
25. c	**26.** a	**27.** b	**28.** a	**29.** b	**30.** c
31. c	**32.** b	**33.** b	**34.** c	**35.** c	**36.** d
37. d	**38.** c	**39.** c	**40.** a	**41.** d	**42.** b
43. d	**44.** c	**45.** c	**46.** c	**47.** b	**48.** d
49. d	**50.** b	**51.** b	**52.** a	**53.** b	**54.** b
55. c	**56.** b	**57.** d	**58.** b	**59.** a	**60.** b
61. c	**62.** d	**63.** d	**64.** c	**65.** b	**66.** b
67. a	**68.** b	**69.** a	**70.** d	**71.** d	**72.** c
73. a	**74.** d	**75.** d	**76.** b	**77.** d	**78.** a
79. a	**80.** b	**81.** a	**82.** c	**83.** c	**84.** b
85. c	**86.** d	**87.** c	**88.** a	**89.** b	**90.** a
91. a	**92.** b	**93.** c	**94.** c		

STRUCTURAL ORGANIZATION IN ANIMALS

1. c	**2.** c	**3.** d	**4.** c	**5.** d	**6.** c
7. d	**8.** d	**9.** d	**10.** b	**11.** a	**12.** d
13. a	**14.** a	**15.** d	**16.** a	**17.** a	**18.** c
19. b	**20.** c	**21.** d	**22.** d	**23.** d	**24.** b
25. d	**26.** d	**27.** d	**28.** a	**29.** b	**30.** a
31. a	**32.** c	**33.** b	**34.** b	**35.** c	**36.** d
37. c	**38.** d	**39.** a	**40.** d	**41.** b	**42.** c
43. b	**44.** d	**45.** d	**46.** a	**47.** b	**48.** a
49. c	**50.** d	**51.** d	**52.** d	**53.** c	**54.** c
55. b	**56.** c	**57.** c	**58.** d	**59.** c	**60.** b
61. d	**62.** a	**63.** c	**64.** d	**65.** b	**66.** d
67. d	**68.** a	**69.** b	**70.** a	**71.** b	**72.** d
73. b	**74.** b	**75.** d	**76.** b	**77.** c	**78.** a
79. c	**80.** c	**81.** c	**82.** d	**83.** b	**84.** b
85. b	**86.** a	**87.** d	**88.** d	**89.** a	**90.** a
91. d	**92.** c	**93.** a	**94.** d	**95.** c	**96.** d
97. d	**98.** c	**99.** b	**100.** a	**101.** c	**102.** d
103. c	**104.** a	**105.** d	**106.** c	**107.** c	**108.** c
109. d	**110.** c	**111.** c	**112.** c	**113.** a	**114.** b
115. c	**116.** d	**117.** b	**118.** c	**119.** d	**120.** a
121. b	**122.** b	**123.** a	**124.** a	**125.** b	**126.** d
127. c	**128.** a	**129.** a	**130.** c	**131.** b	**132.** a
133. b	**134.** d	**135.** c	**136.** b	**137.** b	**138.** c
139. c	**140.** d	**141.** a	**142.** a	**143.** a	**144.** c
145. b	**146.** d	**147.** c	**148.** b	**149.** b	

Together, we will make a difference.

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Standing: **Naveen Maheshwari (Director), Brajesh Maheshwari (Director & H.O.D. Physics)**

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