
UNIT 4 - ANIMAL DIVERSITY - II

I. MULTIPLE CHOICE QUESTIONS

1. **Number of species that are highly evolved and heterogenous group of organisms constituted the phylum chordata is about**
 - 1) 50,000
 - 2) 60,000
 - 3) 70,000
 - 4) 80,000
 2. **The evolution of chordates dates back to more than**
 - 1) Billion years
 - 2) Million years
 - 3) Half a billion year
 - 4) Half a million year
 3. **Major factor/s in the evolution of chordates is/are**
 - 1) Notochord along the dorsal aspect of embryo
 - 2) Attachment of various muscles to the endoskeletal structure
 - 3) Development of post anal tail
 - 4) Both 1 & 2
 4. **Closest invertebrate relatives of chordates are**
 - 1) Echinoderms
 - 2) Molluscs
 - 3) Arthropods
 - 4) Annelids
 5. **Chordates are**
 - 1) Enterocoelous
 - 2) Deuterostomes
 - 3) Schizocoelous
 - 4) Both 1 & 2
 6. **Nerve cord in chordates is**
 - 1) Mid dorsal
 - 2) Ectodermal
 - 3) Non-ganglionated
 - 4) All the above
 7. **Nerve cord in chordates differentiates into**
 - 1) Brain & Pharyngeal gill slits
 - 2) Brain & Post anal tail
 - 3) Vertebral column & Post anal tail
 - 4) Brain & Spinal cord
 8. **In chordates, notochord is replaced by**
 - 1) Vertebral column
 - 2) Pharyngeal gill slits
 - 3) Post anal tail
 - 4) Spinal cord
 9. **Characteristic feature/s of a chordate is/are**
 - 1) Notochord
 - 2) Pharyngeal gill slits
 - 3) Post anal tail
 - 4) All the above
 10. **Non-vertebrate chordates are**
 - 1) Urochordates
 - 2) Cephalochordates
 - 3) Echinoderms
 - 4) Both 1 & 2
 11. **Major evolutionary step led to the domination of jawed fishes is the appearance of**
 - 1) Scales
 - 2) Gills
 - 3) Jaws
 - 4) Fins
 12. **Jawed fishes dominated the period of**
 - 1) Arthovician
 - 2) Devonian
 - 3) Cambrian
 - 4) Carboniferous
 13. **Eventhough amphibians invaded land, they remained as imperfect group because**
 - 1) They could not adapt completely to terrestrial life
 - 2) They have to return to water to lay eggs
 - 3) They did not invaded the land at correct time
 - 4) Both 1 & 2
 14. **Reptiles dominated the earth during the period of**
 - 1) Arthovician
 - 2) Devonian
 - 3) Mesozoic
 - 4) Carboniferous
 15. **Characteristic of reptiles is/are**
 - 1) Dry scally skin
 - 2) Cleidoic / amniotic eggs
 - 3) Absence of limbs
 - 4) Both 1 & 2
 16. **Identify the fossil records of connecting links available for presumed course of chordate evolution**
 - 1) Osteolepid fishes
 - 2) Labyrinthodont amphibians
 - 3) Therapsid reptiles & Theropod dinosaurs
 - 4) All the above
 17. **Bioarchitectural wonders in reptiles**
 - 1) Amnion
 - 2) Foetal membranes
 - 3) Chorio-allantoic placenta
 - 4) Both 1 & 2
 18. **Bioarchitectural wonders in birds are**
 - 1) Air sacs
 - 2) Foetal membranes
 - 3) Feathers
 - 4) Both 1 & 3
 19. **Bioarchitectural wonders in mammals are**
 - 1) Hairs
 - 2) Mammary glands
 - 3) Chorio-allantoic placenta
 - 4) All the above
 20. **Gene, mainly responsible for the human language expression is**
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- 1) FOX K2 2) FOX G2
3) FOX P2 4) FOX G2
- 21. Chordates are believed to have descended from echinoderm larvae like ancestor during the period of**
1) Cambrian 2) Permian
3) Precambrian 4) Arthovician
- 22. The largest of the living chordates is**
1) *Balaenoptera musculus*
2) *Rhinodon typus*
3) Scoliodon 4) None of the above
- 23. The second largest of the living chordates is**
1) *Balaenoptera musculus*
2) *Rhinodon typus*
3) Scoliodon 4) None of the above
- 24. Notochord is persistent in**
1) Cyclostomes 2) Lancelets
3) Both 1 & 2 4) Ascidians
- 25. Notochord is present in the tail of**
1) Some higher chordates
2) All higher chordates
3) Ascidian larva 4) Lancelets
- 26. Adults of ascidians lost notocord due to**
1) Paedogenesis 2) Metamorphosis
3) Cyclomorphosis
4) Retrogressive metamorphosis
- 27. Notochord is replaced partly or wholly by vertebral column in the adults of**
1) Higher chordates 2) Cyclostomes
3) Ascidians 4) Lancelets
- 28. Remnants of notochord occur in mammals as**
1) Vestigial organs in various locations in the body
2) Lymph nodules in lymphatic system
3) Nuclei pulposi in intervertebral discs
4) Ganglion in nervous system
- 29. Pharyngeal gill slits are persistent through out life in**
1) Protochordates 2) Fishes
3) Some amphibians
4) All the above
- 30. Aquatic ancestry of amniotes can be evident by the presence of**
1) Pharyngeal gill slits in their embryos
2) Pharyngeal pouches in their embryos
3) Post anal tail in adults
4) Ventral nerve cord & notochord
- 31. Balancing organ in Kangaroo is**
1) Fore limbs 2) Hind limbs
3) Post-anal tail 4) Vertebral column
- 32. Read the following**
A) Deuterostome B) Radial symmetry C) Indeterminate cleavage D) Enterocoelom E) Determinate cleavage F) Schizocoelom
Identify the characters commonly shared by echinoderms and chordates
1) A, C & D 2) A, C & E
3) C, D & E 4) B, C & E
- 33. Chordates are**
1) Bilaterally symmetrical & triploblastic
2) They have organ-system level of organization & distinct cephalization
3) They have complete digestive tract & closed circulatory system
4) All the above
- 34. Chordates are**
1) Enterocoelous
2) They have ventral myogenic heart
3) They contain phosphocreatine
4) All the above
- 35. Sessile urochordates are**
1) Ascidians 2) Salpa
3) Doliolum 4) Pyrosoma
- 36. Identify the pelagic urochordates from the following**
1) Ascidia & Pyrosoma
2) Pyrosoma & Oikopleura
3) Salpa & Doliolum
4) Ascidia & Oikopleura
- 37. Identify the colonial urochordate**
1) Ascidia 2) Salpa
3) Doliolum 4) Pyrosoma
- 38. Body of urochordates is covered by**
1) Shell 2) Test
3) Pellicle 4) Cuticle
- 39. Tunica in urochordates is made of**
1) Lignin 2) Chitin
3) Cellulose 4) Pectin
- 40. Structure that opens into atrial cavity is**
1) Gill slits 2) Anus

- 3) Genital ducts 4) All the above
- 41. Atrial cavity is lined by**
 1) Mesoderm 2) Ectoderm
 3) Endoderm 4) Ectomesoderm
- 42. Organ present on ventral side of the pharynx in urochordates is**
 1) Crystalline cone 2) Endostyle
 3) Gristle 4) Stomochord
- 43. Number of gill slits found in the pharyngeal wall is**
 1) 2 - 20 2) 10 - 100
 3) 10 - 50 4) 2 - Numerous
- 44. Muscle blocks in cephalochordates are called**
 1) Fasciculus 2) Myotomes
 3) Myonemes 4) Both 2 & 3
- 45. Cephalochordates are**
 1) Enterocoelous 2) Filter feeders
 3) Schizocoelous 4) Both 1 & 2
- 46. Common feature/s shared by both urochordates and cephalochordates is/are**
 1) Enterocoelic coelom
 2) Filter feeding
 3) Presence of endostyle
 4) All the above
- 47. Identify the character/s of a vertebrate**
 1) Possess notochord during embryonic period which is replaced by vertebral column in the adult
 2) It contain paired appendages in the form of fins/limbs
 3) It has 2, 3 or 4 chambered ventral, muscular heart
 4) All the above
- 48. Organs of excretion and osmoregulation in vertebrates are**
 1) Pronephric kidneys
 2) Mesonephric kidneys
 3) Metanephric kidneys
 4) Both 2 & 3
- 49. Identify the character/s belong to cyclostomes**
 1) Horny toothed tongue
 2) Two chambered heart
 3) Without renal portal system
 4) All the above
- 50. Number of gill slits in cyclostomes**
 1) 2 - Numerous 2) 6 - 15 pairs
 3) 1 - 15 pairs 4) 5 - 15 pairs
- 51. Kidneys in cyclostomes are**
 1) Pronephric 2) Mesonephric
 3) Metanephric 4) Both 2 & 3
- 52. Gnathostomes are**
 1) Jawed vertebrates
 2) They have paired appendages
 3) Notochord is replaced partly or wholly by vertebral column
 4) All the above
- 53. Number of semicircular canals in ear of a gnathostome**
 1) 2 2) 4
 3) 3 4) 1
- 54. Gnathostomes include**
 1) Cyclostomes 2) Jawed fishes
 3) Tetrapods 4) Both 2 & 3
- 55. Fishes are**
 1) First jawed vertebrates
 2) They are completely aquatic
 3) Gill breathers 4) All the above
- 56. Extinct jawless fishes belong to**
 1) Ostracodermi 2) Chondrichthyes
 3) Osteichthyes 4) Cyclostomata
- 57. Earliest jawed fishes arise from**
 1) Ostracoderms 2) Chondrichthyes
 3) Osteichthyes 4) Cyclostomes
- 58. Period of origin of jawed fishes**
 1) Devonian 2) Silurian
 3) Arthovician 4) Cambrian
- 59. Most diverse and largest vertebrate group is**
 1) Fishes 2) Amphibians
 3) Reptiles 4) Birds
- 60. Extant lobe finned freshwater forms belong to**
 1) Ostracodermi 2) Coelacanth
 3) Dipnoi 4) Chondrichthyes
- 61. Extant lobe finned marine forms belong to**
 1) Ostracodermi 2) Coelacanth
 3) Dipnoi 4) Chondrichthyes
- 62. Bulk of the living fishes is constituted by**
 1) Ostracodermi 2) Coelacanth

- 3) Dipnoi 4) Chondrichthyes
- 63. Fishes believed to be in the line of evolution of the next higher group of vertebrates are**
 1) Osteolepids 2) Osteichthyes
 3) Dipnoi 4) Chondrichthyes
- 64. Identify the characters of pisces from the following**
 1) They have monocondylic skull
 2) They have amphicoelous vertebrae
 3) Locomotion is assisted by unpaired fins along with paired fins
 4) All the above
- 65. Unpaired fins in fishes are**
 1) Median & Pectoral
 2) Caudal & Pelvic
 3) Median & Caudal
 4) Pectoral & Pelvic
- 66. Paired fins in fishes are**
 1) Median & Pectoral
 2) Caudal & Pelvic
 3) Median & Caudal
 4) Pectoral & Pelvic
- 67. Mouth in fishes is**
 1) Ventral 2) Dorsal
 3) Terminal 4) Both 1 & 3
- 68. Teeth in fishes are**
 1) Acrodont 2) Homodont
 3) Polyphyodont 4) All the above
- 69. Kidneys in fishes are**
 1) Pronephric 2) Mesonephric
 3) Metanephric 4) Both 2 & 3
- 70. Number of cranial nerves in fishes is**
 1) 9 pairs 2) 11 pairs
 3) 10 pairs 4) 12 pairs
- 71. Caudal fin in chondrichthyes fishes is**
 1) Homocercal 2) Heterocercal
 3) Diphycercal 4) Both 2 & 3
- 72. A fin is said to be heterocercal if it is**
 1) Symmetrical both externally & internally
 2) Asymmetrical both externally & internally
 3) Symmetrical externally & asymmetrical internally
 4) Asymmetrical externally & symmetrical internally
- 73. Skin in chondrichthyes fishes is covered by dermal scales which are**
 1) Placoid 2) Cycloid
 3) Ganoid 4) Cosmoid
- 74. Scales in chondrichthyes fishes are also called**
 1) Dermal plates 2) Dermal teeth
 3) Dermal denticles 4) Dermal scutes
- 75. Teeth in chondrichthyes fishes are modified**
 1) Cosmoid scales 2) Placoid scales
 3) Ganoid scales 4) Cycloid scales
- 76. Number of lamelliform gills in chondrichthyes fishes is**
 1) 5 - 12 2) 5 - 10
 3) 5 - 7 4) 2 - Numerous
- 77. Claspers, facilitate internal fertilization are present on**
 1) Dorsal median fin 2) Caudal fin
 3) Pectoral fin 4) Pelvic fin
- 78. Caudal fin in teleost fishes is**
 1) Homocercal 2) Heterocercal
 3) Diphycercal 4) Both 2 & 3
- 79. A fin is said to be homocercal, if it is**
 1) Symmetrical both externally & internally
 2) Asymmetrical both externally & internally
 3) Symmetrical externally & asymmetrical internally
 4) Asymmetrical externally & symmetrical internally
- 80. Caudal fin in lung fishes and latimaria is**
 1) Homocercal 2) Heterocercal
 3) Diphycercal 4) Both 2 & 3
- 81. A fin said to be dyphycercal if it is**
 1) Symmetrical both externally & internally
 2) Asymmetrical both externally & internally
 3) Symmetrical externally & asymmetrical internally
 4) Asymmetrical externally & symmetrical internally
- 82. Read the following**
 A) Cosmoid B) Ganoid C) Cycloid D) Ctenoid
 E) Placoid
 Identify the scales that contribute to the

formation of exoskeleton in osteichthyes fishes

- 1) B, C, D & E 2) A, C, D & E
3) A, B, C & D 4) A, B, C, D & E

83. Air bladder in osteichthyes fishes help in

- 1) Gas exchange 2) Buoyancy
3) Excretion 4) Both 1 & 2

84. Amphibians require aquatic medium for

- 1) Reproduction 2) Development
3) Excretion 4) Both 1 & 2

85. Salientians are also called

- 1) Caudates 2) Anurans
3) Caecilians 4) None of the above

86. Limbless amphibians are

- 1) Anurans 2) Salientians
3) Urodeles 4) Caecilians

87. Oviparous fish is

- 1) Hippocampus 2) Carcharodon
3) Torpedo 4) Sphyrna

88. Identify the respiratory mechanism in amphibians

- 1) Cutaneous 2) Pulmonary
3) Bucco-pharyngeal
4) All the above

89. Branchial respiration can be seen in

- 1) Anurans 2) Salientians
3) Larvae & adult urodeles
4) Caecilians

90. Kidneys in amphibians are

- 1) Pronephric 2) Mesonephric
3) Metanephric 4) Both 2 & 3

91. Identify the character/s of amphibians is / are

- 1) Heart with sinus venosus and conus arteriosus
2) They have well developed portal system
3) They have nucleated erythrocytes
4) All the above

92. Meninges in the amphibian brain is/are

- 1) Inner durameter & outer piameter
2) Inner piameter & outer durameter
3) Inner durameter & outer meninx primitiva
4) Inner piameter & outer meninx primitiva

93. Ear ossicle in middle ear of amphibians is

called

- 1) Tympanum 2) Conus arteriosus
3) Columella auris 4) Meninx primitiva

94. Columella auris in amphibians is a modified

- 1) Amphicoelous vertebrae
2) Outer meninges of brain
3) Sinus venosus of heart
4) Hyomandibula of skull

95. Gland/s appeared for the first time in amphibians is/are

- 1) Tympanum 2) Lacrimal
3) Harderian 4) All the above

96. Tailless amphibians belong to

- 1) Urodela 2) Caudata
3) Anura 4) Apoda

97. Identify the characters of frog/toad

- 1) They are carnivores
2) Poikilothermic anamniotes
3) Most of the frogs live in or near water where as toads are well adapted to comparatively dry environments
4) All the above

98. Identify the behavioural adaptations in frogs to tide over adverse conditions

- 1) Hibernation 2) Aestivation
3) Camouflage 4) Both 1 & 2

99. Identify the behavioural adaptations in frogs to protect from the enemies

- 1) Hibernation 2) Aestivation
3) Camouflage 4) Both 1 & 2

100. Period of inactive life during winter is called

- 1) Hibernation 2) Aestivation
3) Camouflage 4) Both 1 & 2

101. Period of inactive life during summer is called

- 1) Hibernation 2) Aestivation
3) Camouflage 4) Both 1 & 2

102. Identify the changes associated with winter/summer sleep in frogs

- 1) They burry themselves in soft and damp mud by surviving of fat and glycogen reserves
2) They perform cutaneous respiration during those periods
3) They slow down their metabolism dur-

- ing those periods
4) All the above
- 103. Change in skin colour of frogs to match with that of their surrounding environment for the protection from enemies is called**
1) Hibernation 2) Aestivation
3) Camouflage 4) Both 1 & 2
- 104. Identify the character of *Rana tigrina***
1) A pair of external nostrils above the snout
2) Bulged eyes covered with nictitating membrane
3) Membraneous tympanum to receive sound waves
4) All the above
- 105. Male frog can be distinguished from female by**
1) Sound amplifying vocal sacs
2) Copulatory pad on the first digit of each fore limb
3) Webbed foot with 5 digits
4) Both 1 & 2
- 106. Microscopic gland/s that secretes digestive glands in *Rana tigrina* are**
1) Pancreas 2) Liver
3) Intestinal glands 4) Gastric glands
- 107. Largest digestive gland in *Rana* is**
1) Pancreas 2) Liver
3) Intestine 4) Gastric wall
- 108. Liver opens into___ through pancreatic duct**
1) Stomach 2) Duodenum
3) Ileum 4) Rectum
- 109. Organ of food capture in *R. tigrina* is**
1) Mouth 2) Tongue
3) Fore limbs 4) Both the limbs
- 110. Digestion begins in**
1) Mouth
2) Bucco pharyngeal cavity
3) Oesophagus 4) Stomach
- 111. Partly digested acidic food in stomach is called**
1) Bolus 2) Chyme
3) Chyle 4) None of the above
- 112. Mixing of chyme with digestive juices takes place in**
1) Cardiac stomach 2) Pyloric stomach
3) Small intestine 4) Large intestine
- 113. Emulcification of fats is due to**
1) Bile juice 2) Pancreatic enzymes
3) Succus entericus 4) Gastric juice
- 114. Digestion of proteins, carbohydrates and lipids is carried out by**
1) Bile juice 2) Pancreatic enzymes
3) Succus entericus 4) Both 2 & 3
- 115. Identify the respiratory mechanisms in frog**
1) Cutaneous respiration
2) Bucco-pharyngeal respiration
3) Pulmonary respiration
4) All the above
- 116. Triangular chamber that joins the right atrium on the dorsal side is**
1) Sinus venosus 2) Vena cavae
3) Conus arteriosus 4) Bulbous arteriosus
- 117. Right atrium receives blood through**
1) Sinus venosus 2) Vena cavae
3) Conus arteriosus 4) Bulbous arteriosus
- 118. Number of caval veins in blood vascular system of frog is**
1) 2 2) 3
3) 4 4) 5
- 119. Ventricle opens into**
1) Sinus venosus 2) Vena cavae
3) Conus arteriosus 4) Bulbous arteriosus
- 120. Identify the odd one regarding aortic arches in amphibians**
1) Carotid 2) Systemic
3) Pulmocutaneous 4) Buccopharyngeal
- 121. Number of major veins that collect blood from the different parts of the body in amphibians is**
1) Two 2) One
3) Three 4) Four
- 122. Identify the odd one regarding lymphatic system in amphibians**
1) Lymph 2) Lymph glands
3) Lymph channels 4) Lymph nodes
- 123. In hepatic portal system connections are between**
1) Intestine & Lower parts of the body
2) Kidney & Liver 3) Intestine & Liver
4) Lower parts of the body & Kidney
- 124. In renal portal system, connections are be-**

- tween
 1) Intestine & Lower parts of the body
 2) Kidney & Liver 3) Intestine & Liver
 4) Lower parts of the body & Kidney
- 125. Testes in amphibians are attached to the dorsal body wall by**
 1) Mesovarium 2) Mesorchium
 3) Pericardium
 4) Tympanic membrane
- 126. Number of vasa efferentia in amphibians is**
 1) 10 - 12 2) 8 - 10
 3) 12 - 14 4) 6 - 8
- 127. Vasa efferentia opens into**
 1) Urino-genital duct
 2) Bidder's canal
 3) Ovisacs 4) Ostia
- 128. Ovaries in amphibians are attached to the dorsal body wall by**
 1) Mesovarium 2) Mesorchium
 3) Pericardium
 4) Tympanic membrane
- 129. Funnel-like openings at anterior ends of oviducts in amphibians are called**
 1) Ostia 2) Ovisacs
 3) Bidder's duct 4) Columella
- 130. Posterior ends of oviducts in amphibians are formed into**
 1) Ostia 2) Ovisacs
 3) Bidder's duct 4) Columella
- 131. Reptiles are**
 1) Ectothermic 2) Cold blooded
 3) Amniotes 4) All the above
- 132. Reptiles originated from**
 1) Osteolepid fishes
 2) Extinct labyrinthodont amphibians
 3) Theropods of jurassic period
 4) Extinct mammals like therapsid reptiles
- 133. Golden age of reptiles is**
 1) Carboniferous 2) Mesozoic era
 3) Cretaceous period
 4) Coenozoic era
- 134. Key adaptation/s that led to the success of reptiles is/are**
 1) Internal fertilization
 2) Pulmonary breathing
 3) Two pairs of pentadactyl limbs with clawed digits for moving on land
 4) All the above
- 135. Identify the extra embryonic membranes in reptiles is**
 1) Amnion & Allantois
 2) Chorion & Yolk sac
 3) Columella auris & Meninx primitiva
 4) Both 1 & 2
- 136. The study of poikilothermic tetrapods is called**
 1) Tetrology 2) Herpetology
 3) Serpentology 4) Ophiology
- 137. Exoskeleton in reptiles is in the form of**
 1) Scales 2) Shields
 3) Claws 4) All the above
- 138. Teeth in reptiles is**
 1) Acrodont 2) Homodont
 3) Polyphyodont 4) All the above
- 139. Crocodiles have teeth as**
 1) Acrodont 2) Heterodont
 3) Polyphyodont 4) Thecodont
- 140. Chelonians are**
 1) With acrodont teeth
 2) With homodont teeth
 3) With polyphyodont teeth
 4) Without teeth
- 141. Each half of the lower jaw in reptiles is formed by**
 1) Six bones 2) Four bones
 3) Two bones 4) Eight bones
- 142. Vertebrae in reptilia are mostly**
 1) Amphiplatyan 2) Procoelous
 3) Amphicoelous 4) Opisthocoelous
- 143. Number of sacral vertebrae in reptiles is**
 1) Four 2) Two
 3) Six 4) Eight
- 144. In reptiles, independent movement of the head from the rest of the body is facilitated by**
 1) Sacral vertebrae 2) Lower jaw bones
 3) Atlas & axis 4) Monocondylic skull
- 145. Ventilation in reptiles is due to**
 1) Intercostal muscles
 2) Ribs 3) Both 1 & 2

- 4) Sacral vertebrae
- 146. Gaseous exchange in turtles takes place through**
 1) Vascular cloacal wall
 2) Skin 3) Lungs
 4) Floor of the buccal cavity
- 147. Heart in reptiles is**
 1) Two chambered 2) Four chambered
 3) Incompletely four chambered
 4) Three chambered
- 148. Heart in crocodiles is**
 1) Two chambered 2) Four chambered
 3) Incompletely four chambered
 4) Three chambered
- 149. Number of cranial nerves in reptiles is**
 1) 10 pairs 2) 12 pairs
 3) 8 pairs 4) 14 pairs
- 150. Number of cranial nerves in snakes is**
 1) 10 pairs 2) 12 pairs
 3) 8 pairs 4) 14 pairs
- 151. Anterior chamber of the cloaca in reptiles is called**
 1) Coprodaeum 2) Urodaeum
 3) Proctodaeum 4) Noe of the above
- 152. Middle chamber of the cloaca in reptiles is called**
 1) Coprodaeum 2) Urodaeum
 3) Proctodaeum 4) None of the above
- 153. Posterior chamber of the cloaca in reptiles is called**
 1) Coprodaeum 2) Urodaeum
 3) Proctodaeum 4) None of the above
- 154. Identify the non-poisonous snakes from the following**
 1) *Naja naja* 2) *Tropidonotus*
 3) *Vipera russelli* 4) *Bungarus*
- 155. Major flight adaptations in birds are**
 1) Feathers and wings
 2) Powerful breast musculature and pneumatic bones
 3) Endothermy with high metabolic rate and keen sense of vision
 4) All the above
- 156. Scientist designed the birds as the 'Masters of air' is**
 1) Dr. Salim Ali 2) J. Z. Young
 3) T. H. Huxley 4) Connel
- 157. Scientist described aves as 'Glorified reptiles' is**
 1) Dr. Salim Ali 2) J. Z. Young
 3) T. H. Huxley 4) Connel
- 158. Typical reptilian characters in birds are**
 1) Scales on legs and presence of interclavical
 2) Uricotelism and megalecithal eggs
 3) Development with four extra embryonic membranes 4) All the above
- 159. Bird man of India**
 1) Dr. Salim Ali 2) J. Z. Young
 3) T. H. Huxley 4) Connel
- 160. Oil secreting gland in birds**
 1) Pineal gland 2) Preen gland
 3) Uropygeal gland 4) Both 2 & 3
- 161. Birds are**
 1) Metanephric & uricotelic
 2) Mesonephric & uricotelic
 3) Metanephric & ureotelic
 4) Mesonephric & urecotelic
- 162. Identify the character in birds similar to mammals**
 1) Three chambered cloaca
 2) Double headed ribs
 3) Sinus vinosus and conus arteriosus are absent
 4) Uricolic
- 163. Identify the reptilian characters in birds**
 1) Three chambered cloaca
 2) Nucleated erythrocytes
 3) Uricotelism
 4) All the above
- 164. Ratitae bird lack**
 1) Syrinx 2) Clavicles
 3) Preen gland 4) All the above
- 165. Hair is reduced in the following mammals**
 1) Sea cows & Elephants
 2) Whales & Dolphins
 3) Whales & Armadillos
 4) Ornithorhynchus & Macropus
- 166. Sudoriferous glands are called**
 1) Mammary glands
 2) Scent glands 3) Sebaceous glands
 4) Sweat glands

- 167. Mammary glands are modified**
 1) Scent glands 2) Sebaceous glands
 3) Sweat glands 4) Perotid glands
- 168. Number of cervical vertebrae in most mammals is**
 1) 9 2) 5
 3) 6 4) 7
- 169. Six cervical vertebrae are present in**
 1) Trichechus 2) Choloepus
 3) Bradypus 4) Both 1 and 2
- 170. Number of sacral vertebrae in mammals is**
 1) One to three 2) Two to five
 3) Three to five 4) Two to four
- 171. Type of vertebrae in mammals**
 1) Procoelous 2) Amphiplatyan
 3) Amphicoelous 4) Opisthocoelous
- 172. Teeth in mammals are**
 1) Thecodont 2) Heterodont
 3) Diphyodont 4) All the above
- 173. Number of salivary glands in mammals**
 1) 2 Pairs 2) 3 Pairs
 3) 4 Pairs 4) 6 Pairs
- 174. Number of salivary glands in man**
 1) 2 Pairs 2) 3 Pairs
 3) 5 Pairs 4) 6 Pairs
- 175. Mature RBC in mammals is**
 1) Circular 2) Biconcave
 3) Enuclate 4) All the above
- 176. Number of optic lobes in mammalian brain is**
 1) 2 2) 3
 3) 4 4) 6
- 177. Four optic lobes in mammalian brain constitute**
 1) Corpora callosum
 2) Corpora quadrigemina
 3) Corpora bigemina
 4) Organ of corti
- 178. The two halves of cerebrum in mammalian brain are connected by**
 1) Corpus callosum
 2) Corpora quadrigemina
 3) Corpora bigemina
 4) Organ of corti
- 179. Number of meninges mammalian brain is**

- 1) 1 2) 2
 3) 3 4) 4
- 180. The middle meninx in mammalian brain is called**
 1) Membrana primitiva
 2) Arachnoid membrane
 3) Pia mater 4) Dura mater
- 181. Number of cranial nerves in mammalian brain**
 1) 8 pairs 2) 10 pairs
 3) 14 pairs 4) 12 pairs
- 182. Identify the odd one**
 1) Malleus 2) Incus
 3) Stapes 4) Cochlea
- 183. Number of ossicles in mammalian middle ear is**
 1) Two 2) Three
 3) One 4) Four
- 184. Intra-abdominal testes are found in**
 1) Monotremes 2) Cetaceans
 3) Sea cows & Elephants
 4) All the above

II. CORRECT AND INCORRECT SENTENCES

- 185. Identify the correct one regarding chordate evolution**
 1) Kidneys are evolved from primitive pronephros to metanephros
 2) Continuous complexity in the development of brain
 3) Fossil records of connecting links endorse the presumed course of chordate evolution
 4) All the above
- 186. Identify the incorrect one regarding mammalian evolution**
 1) The current era is definitely the age of the mammals
 2) Modern man visualizing the entire history of evolution on his mind screen
 3) Genetic transformation is making the man unique
 4) None of the above
- 187. Identify the correct one from the following**
 1) Chordates possess notochord at some

- stage in their life
2) Chordata is one of major animal phyla in terms of number
3) Chordates include protochordates and vertebrates
4) All the above
- 188. Choose the incorrect one regarding notochord in chordates**
1) It is flexible rod like and situated along the mid dorsal line between the gut and nerve cord
2) It is the first part of endoskeleton to appear in the embryo
3) It is derived from embryonic chorda ectoderm
4) It is made of a core of vacuolated cells surrounded by inner fibrous and outer elastic connective tissue sheaths
- 189. Identify the incorrect one regarding nerve cord in chordates**
1) Tubular, fluid filled, situated above the notochord and below the dorsal body wall
2) It is ganglionated
3) It is produced by sinking in of the median dorsal strip of ectoderm
4) In higher chordates, it form distinct brain at anterior end and the rest of it becomes the spinal cord
- 190. Identify the correct one regarding pharyngeal gill slits in chordates**
1) They are series of lateral proliferations in the wall of pharynx
2) They are ecto and endodermal in origin
3) The walls of the pharyngeal gill slits develop vascular lamellae to become gills
4) All the above
- 191. Identify the correct one regarding pharyngeal gill slits in amniotes**
1) Pharyngeal gill slits are in the form of pharyngeal pouches
2) These appear in the early stages and disappear later
3) Occurrence of pharyngeal pouches in embryos of amniotes provides a clue to their aquatic ancestry
4) All the above
- 192. Select the incorrect one regarding post-anal tail in chordates**
1) Post anal tail is lost in many species during the late embryonic development
2) It contains skeletal and muscle elements
3) It contains coelom and visceral organs
4) It acts as a propeller and balancing organ in some chordates
- 193. Identify the incorrect one regarding urochordata**
1) All urochordates are marine
2) They have segmented body
3) Coelom is absent
4) They occur from the surface water to greater depths
- 194. Choose the incorrect one from the following**
1) Endostyle is believed to be the fore runner of thyroid gland of a vertebrate
2) Atrium leads to the exterior by dorsal or posterior atrial apertures
3) Digestive tract is incomplete
4) Circulatory system is of open type
- 195. Identify the incorrect one regarding tunicates**
1) Heart is simple, tubular, ventral and alternatively reverses the direction of blood flow
2) Nervous system is represented in the adult by a single dorsal ganglion
3) They are bisexual or hermaphrodites
4) Development is direct
- 196. Identify the incorrect one regarding cephalochordates**
1) They are marine and lead burrowing mode of life
2) They found in surface waters to greater depths
3) They are small fish like translucent forms
4) They have median fins but lack paired fins
- 197. Identify the correct one about cephalochordates**
1) Circulatory system is of open type
2) Heart, blood corpuscles and respiratory pigment are absent
3) Fertilization is internal
4) Development is direct
- 198. Identify the correct one regarding**

- cephalochordates**
- 1) Gaseous exchange occurs mostly through body surface
 - 2) Excretion is performed by solenocytes of protonephridia
 - 3) Pharyngeal region is with ductless gonads
 - 4) All the above
- 199. Choose the incorrect one regarding agnatha**
- 1) They are jawless primitive fish like forms
 - 2) They have paired appendages
 - 3) Internal ear with 2 or 3 semicircular canals
 - 4) Notochord persists in the adult
- 200. Identify the incorrect one about cyclostomes**
- 1) All are slender, eel like marine forms
 - 2) Body without scales and have cartilaginous endoskeleton
 - 3) Vertebrae is represented by imperfect neural arches in some
 - 4) Mouth is circular and suctorial
- 201. Identify the incorrect one regarding lampreys**
- 1) They exhibit catadromous migration
 - 2) They die after spawning
 - 3) Development is indirect with ammocoete larva
 - 4) Larva undergo metamorphosis into adult and return to the sea
- 202. Select the incorrect one regarding hagfishes**
- 1) They are scavengers feeding on dead & dying fish
 - 2) They are both marine & freshwater forms
 - 3) They have mucous sacs which release milky fluid
 - 4) Development is direct
- 203. Identify the incorrect one regarding pisces**
- 1) They are aquatic and poikilotherms
 - 2) They have streamlined body with distinct head, trunk and tail
 - 3) Exoskeleton is made with ectodermal scales
 - 4) Endoskeleton is cartilaginous or bony
- 204. Identify the incorrect one regarding fishes**
- 1) Most fishes are ammonotelic
 - 2) Cartilaginous fishes are ureotelic
 - 3) Internal ear with 2 semicircular canals
 - 4) Sexes are separate
- 205. Identify the correct one regarding fishes**
- 1) They have well developed lateral line sensory system
 - 2) Meninx primitiva is the only meninx enveloping the central nervous system
 - 3) Eyes are without eye lids and eye ball is protected by a nictitating membrane
 - 4) All the above
- 206. Select the correct one regarding chondrichthyes fishes**
- 1) They are marine fish with cartilaginous endoskeleton
 - 2) They store urea in their blood to maintain osmotic concentration of body fluids
 - 3) Sharks are highly predaceous
 - 4) All the above
- 207. Identify the incorrect one regarding osteichthyes fishes**
- 1) They have terminal mouth
 - 2) They have four filamentous gills without operculum
 - 3) They are mostly ammonotelic
 - 4) They are oviparous with external fertilization
- 208. Identify the correct one regarding tetrapods**
- 1) Mostly terrestrial but some are amphibious
 - 2) They have two pairs of pentadactyl limbs
 - 3) Lungs are the principle gas exchange organs
 - 4) All the above
- 209. Identify the incorrect one regarding amphibians**
- 1) First vertebrates to come out of water and walk on land
 - 2) Able to live in aquatic medium of their ancestors and in terrestrial habitat they first invaded
 - 3) Dipnoi fishes are the ancestors of amphibians
 - 4) They could not become completely terrestrial as they are still tied to aquatic medium
- 210. Identify the correct one regarding amphibians**
- 1) First tetrapods and have distinct head and trunk
 - 2) They have soft skin without scales except

- in apoda which is moist and glandular
 3) They have two pairs of equal or unequal pentadactyle limbs
 4) All the above
- 211. Select the incorrect one regarding amphibians**
 1) Skull is monocondylic as in fishes
 2) Sternum appeared for the first time in amphibians
 3) They have three chambered heart with well developed aortic arches
 4) They show external fertilization and indirect development
- 212. Select the correct one regarding *Rana tigrina***
 1) Body is spindle shaped and slightly flattened dorsoventrally
 2) Skin is thin, scaleless and moist
 3) Skin is attached to the underlying muscles loosely at certain points
 4) All the above
- 213. Identify the incorrect one about *Rana tigrina***
 1) Skin on the dorsal surface is olive green with irregular dark spots
 2) Ventral surface is pale yellow in colour
 3) *Rana* never drinks water but absorb water through the skin
 4) Body is divisible into head, neck, trunk and tail
- 214. Identify the incorrect one regarding fore and hind limbs of *Rana tigrina***
 1) They help in swimming, walking, leaping and burrowing
 2) Fore limb with 4 digits and hind limb with 5 digits
 3) Fore limbs are larger and muscular than hind limbs
 4) Feet have webbed digits and the web help in swimming
- 215. Identify the incorrect one about digestive system in *Rana***
 1) Alimentary canal is short because it is an carnivore
 2) Mouth as a semioval slit bound by the upper and lower jaws
 3) Mouth opens directly into oesophagus
 4) Buccopharyngeal cavity shows teeth along the margin of the upper jaw
- 216. Identify the incorrect one about alimentary canal of *Rana***
 1) Short oesophagus merges with broad and thick walled stomach
 2) Stomach occupies the right part in the body cavity
 3) Stomach is provided with cardiac and pyloric sphincter at its anterior and posterior ends respectively
 4) Stomach is the organ for the storage and digestion of food
- 217. Identify the correct one regarding digestive system in *Rana tigrina***
 1) Small intestine consists of proximal duodenum and distal ileum
 2) Ileum opens into large intestine or rectum
 3) Rectum opens into cloaca through anus
 4) All the above
- 218. Identify the incorrect one regarding digestive system in *Rana tigrina***
 1) Anus is guarded by cloacal sphincter
 2) Cloaca is a common passage for both digestive and urinogenital system
 3) Cloaca opens outside through a cloacal aperture
 4) Cloacal aperture is at the posterior end of the trunk between the hind limbs
- 219. Identify the incorrect one regarding digestive glands in *Rana tigrina***
 1) It secretes bile, which is stored in gall bladder
 2) Bile contains digestive enzymes, salts and pigments
 3) Pancreas is an irregular, elongated and mixed gland situated between stomach and duodenum
 4) Intestinal glands secrete succus entericus
- 220. Identify the correct one regarding cutaneous respiration in frog**
 1) It is due to thin, moist and vascular skin
 2) Skin is permeable to O₂ and CO₂
 3) Oxygen dissolved in mucous film on the skin and diffused into blood capillaries in exchange of CO₂
 4) All the above
- 221. Identify the correct one regarding pulmonary respiration in frog**

- 1) It is due to highly vascular sac-like lungs
 2) Due to the elevation of buccopharyngeal cavity, air forces the glottis to open and enter the lungs
 3) Exchange of gases takes place in lungs
 4) All the above
- 222. Identify the incorrect one regarding Pulmonary respiration in frogs**
 1) During respiration buccopharyngeal cavity acts like a force pump
 2) Exchange of gases takes place in buccopharyngeal cavity
 3) Lowering of buccopharyngeal floor helps in sending air out
 4) None of the above
- 223. Identify the incorrect one regarding blood vascular system in frogs**
 1) It consists of heart, blood vessels and blood
 2) Heart is muscular situated upper part of the body cavity
 3) It has 2 separate atria and 2 ventricles
 4) Heart is covered by double layered pericardium
- 224. Identify the correct one regarding amphibian eye**
 1) Eyes are protected by movable eyelids
 2) Lower eye lid is folded into a transparent tympanic membrane
 3) Retina of the eye contains both rods and cones
 4) Rods provide colour vision and cones are helpful in dimlight vision
- 225. Identify the incorrect one regarding amphibian ear**
 1) It is useful for hearing and balance
 2) Middle ear is closed externally by tympanic membrane
 3) Inner ear consists of a utriculus and a small sacculus
 4) Utriculus transmits vibrations to the inner ear
- 226. Identify the correct one regarding excretory system in amphibians**
 1) Functional units of the kidney are uriniferous tubules or nephrons
 2) In females, oviducts and ureters are separate
 3) Wolffian duct act as urino-genital duct in females
 4) Both 1 & 2
- 227. Identify the correct one regarding amphibians**
 1) Fertilization is internal
 2) Development involves a larval stage called tadpole
 3) Tadpole is carnivorous in nature
 4) Adult frog is herbivorous in nature
- 228. Identify the correct one regarding reptiles**
 1) They are the first true terrestrial animals
 2) They are creeping/burrowing amniotic tetrapods
 3) Body is divided into head, neck, trunk and tail
 4) All the above
- 229. Identify the correct one regarding reptiles**
 1) Skull is monocondylic and many have temporal fossae
 2) The first two cervical vertebrae are specialized into atlas and axis
 3) Atlas and axis facilitate independent movement of the head from the rest of the body
 4) All the above
- 230. Identify the correct one regarding reptiles**
 1) Sinus venosus is absent
 2) Conus arteriosus is present
 3) Three aortic arches arise directly from the conus arteriosus
 4) Erythrocytes are nucleate
- 231. Identify the correct one regarding reptiles**
 1) Kidneys are metanephric
 2) Wolffian duct of the embryo functions as vas deference in males
 3) They are uricotelic
 4) All the above
- 232. Identify the correct one regarding reptiles**
 1) Tympanic membrane is found at the inner border of the external auditory meatus
 2) Middle ear has a single ear ossicle called columella auris
 3) Jacobson's organs are highly developed in lizards and snakes
 4) All the above
- 233. Identify the correct one regarding reptiles**
 1) Copulatory organ is absent in rhyn-

- chocephalians
2) Lizards and snakes have a pair of hemipenes
3) Cloaca is three chambered
4) All the above
- 234. Identify the correct one regarding reptiles**
1) Internal fertilization
2) Mostly oviparous
3) Megalecithal & cleidoic eggs
4) All
- 235. Identify the incorrect one regarding reptiles**
1) Cleavage is meroblastic
2) Cleavage is discoidal
3) All reptiles are oviparous
4) Some snakes are viviparous
- 236. Identify the correct regarding aves**
1) Aves include a few extinct and a large number of extant birds
2) They are feathered, bipedal and endothermic vertebrates
3) Modern flying birds have undergone modifications to suit their aerial mode of life
4) All the above
- 237. Identify correct one regarding birds**
1) They have streamlined body with head, neck, trunk and rudimentary tail
2) Forelimbs are modified into wings
3) Hindlimbs are adapted for walking, running, swimming and perching
4) All the above
- 238. Identify correct one regarding birds**
1) Fully ossified endoskeleton
2) Hollow long bones with air cavities
3) Monocondylic skull
4) All the above
- 239. Identify the correct one regarding birds**
1) Teeth are absent in the extant birds
2) All modern flying birds are provided with powerful breast muscles
3) Flight muscles are chiefly the pectoralis major and pectoralis minor
4) All the above
- 240. Identify the correct one regarding aves**
1) Stomach is usually divided into glandular proventriculus and muscular gizzard
2) Oesophagus is often dilated into a crop for the storage of food
3) Undistensible lungs without alveoli
4) All the above
- 241. Identify the incorrect one regarding aves**
1) Air sacs facilitate continuous oxygenation of blood and pneumaticity of bones
2) Voice box is syrinx that lies at the junction of the trachea and bronchi
3) Heart is three chambered
4) Only right systemic arch is present
- 242. Identify the incorrect one regarding aves**
1) Three lobed metanephric kidney
2) Well developed urinary bladder except in ostrich
3) 12 pairs of cranial nerves
4) Olfactory lobes are reduced
- 243. Identify the correct one from the following**
1) Eyes possess sclerotic plates
2) A comb shaped vascular pecten projects from the retina into the vitreous humor
3) Middle ear has a single ear ossicle, columella auris
4) All the above
- 244. Identify the correct one from the following**
1) Urinary bladder is absent except in ostrich
2) Olfactory sense is usually poor except in Kiwi
3) Copulatory organ is absent in males except in ratites, ducks and geese
4) All the above
- 245. Identify the incorrect one regarding birds**
1) Sexes are separate
2) Testes are paired
3) Ovary and oviduct of the right side are almost completely atrophied in a mature female
4) Copulatory organ is absent in males except in ratites, ducks and geese
- 246. Identify the incorrect one regarding birds**
1) Oviparous with internal fertilization
2) Meroblastic and discoidal cleavage
3) Megalecithal and cleidoic eggs
4) Hatchlings are precocial in flying birds and altricial in flightless birds
- 247. Identify the correct one regarding**

- palaeognathae**
- 1) They are modern flightless running birds
 - 2) They are discontinuous in their distribution like lung fishes and marsupials
 - 3) They are characterized by the presence reduced wings, a raft like sternum with out keel and males with penis
 - 4) All the above
- 248. Identify the incorrect one regarding mammalia**
- 1) Mammalia consists of extinct and extant animals
 - 2) Ther are hairy homeothermic amniotes
 - 3) They nourish their young with milk secreted by mammary glands
 - 4) Triassic period is referred to as the age of mammals
- 249. Identify the incorrect one**
- 1) Smallest of all the mammals is bumblebee bat/ketti's hog nosed bat
 - 2) Extinct mammals like therapsid reptiles gave rise to early mammals in coenozoic era
 - 3) Biggest of all the mammals is *Balanoptera musculus*
 - 4) Bumblebee bat was discovered in Thailand
- 250. Identify the correct one from the following**
- 1) Intelligence and parental care have reached their climax in mammals
 - 2) Body is covered is divided into head, neck, trunk and tail
 - 3) Body is by hair, which is one of the unique characters of mammals
 - 4) All the above
- 251. Identify the incorrect one about mammals**
- 1) Skull is monocondylic
 - 2) They have double headed ribs
 - 3) They contain amphiplatian type vertebrae
 - 4) Each half of the lower jaw consists of a single bone, the dentry
- 252. Identify the correct one regarding mammals**
- 1) Vertebrae are of the amphiplantyan type
 - 2) Ribs are double-headed
 - 3) Buccal cavity is separated from the upper nasal cavity by a secondary palate
 - 4) All the above
- 253. Identify the correct one regarding respiratory system in mammals**
- 1) Respiratory gaseous exchange occurs through lungs
 - 2) Glottis is guarded by epiglottis
 - 3) Larynx is the sound producing organ
 - 4) All the above
- 254. Identify the incorrect one regarding circulatory system in mammals**
- 1) Heart is four chambered
 - 2) Oxygenated and deoxygenated types of blood are completely separated
 - 3) Only the right systemic arch is present
 - 4) Renal portal system is absent
- 255. Identify the correct one regarding mammalian ear**
- 1) External ear has a large fleshy and cartilagenous flap called pinna
 - 2) Middle ear possesses three ear ossicles are malleus, incus and stapes
 - 3) Cochlea of the internal ear is spirally coiled and bears the 'organ of corti' which is the receptor of sound
 - 4) All the above
- 256. Identify the correct one regarding mammalian are**
- 1) Cochlea of the internal ear is spirally coiled
 - 2) Cochlea bears organ of corti
 - 3) Organ of corti is the receptor of sound
 - 4) All the above
- 257. Identify the incorrect one regarding mammalian kidney**
- 1) Kidneys are bean shaped
 - 2) Kidneys are mesonephric
 - 3) Nephron has loop of Henle which helps in the formation of concentrated urine
 - 4) Mammals are 'ureotelic'
- 258. Identify the incorrect one from the following**
- 1) Sexes are separate
 - 2) Sexual dimorphism is generally well marked
 - 3) Testes are usually found in scrotal sacs inside the abdomen
 - 4) Males have copulatory organ called penis

259. **Identify the incorrect one about mammals**

- 1) Fertilization is internal
- 2) All mammals are ovoviparous
- 3) Developing embryo is attached to the uterine wall of the mother by placenta
- 4) Development is intra-uterine

III. ASSERTIONS (A) & REASONS (R)

260. **(A): Modern man "*Homo sapiens*" deserves his specific epithet 'sapiens' meaning intelligent**

(R): Genetic transformations enabled man to develop cognitive skills

- 1) A & R are correct but R is not the correct explanation of A
- 2) A & R are correct and R is the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

261. **(A): Tunicates are called urochordates**

(R): Larva with a tail, a dorsal nerve cord and a notochord confined to the tail

- 1) A & R are correct but R is not the correct explanation of A
- 2) A & R are correct and R is the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

262. **(A): Cephalochordates are called typical chordates**

(R): They possess the principle chordate characters throughout their life

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

263. **(A): Two chambered heart in fishes is described as branchial heart**

(R): Heart supplies blood only to the gills

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

264. **(A): Two chambered heart in fishes is de-**

scribed as venous heart

(R): In each single circulation blood reaches the heart only once and heart receives only deoxygenated blood from the body parts

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

265. **(A): Chondrichthyes fishes have to swim constantly to avoid sinking**

(R): They lack air bladder which acts as a hydrostatic organ

- 1) A & R are correct but R is not the correct explanation of A
- 2) A & R are correct and R is the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

266. **(A): Amphibians tied to aquatic medium for their reproduction and development**

(R): Their eggs dry out quickly if laid on land and they do not have a shell to suit the hard surfaces on land

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

267. **(A): Kidneys in amphibians are called retroperitoneal**

(R): Kidneys are covered with peritoneum on their dorsal surface

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A & R are false
- 4) A is true & R is false

IV. MATCHINGS

268. **Set - A**

- 1) Branchiostoma
- 2) Petromyzon
- 3) Myxine
- 4) Scoliodon

Set - B

- A) Lamprey
- B) Hagfish
- C) Lancelet
- D) Dog fish

- 5) Pristis E) Saw fish
 1) 1-A, 2-C, 3-D, 4-B, 5-E
 2) 1-B, 2-E, 3-D, 4-A, 5-C
 3) 1-C, 2-A, 3-B, 4-D, 5-E
 4) 1-D, 2-A, 3-B, 4-C, 5-E
- 269. Set - A Set - B**
 1) Carcharodon A) Electric ray
 2) Trygon B) Great white shark
 3) Torpedo C) Flying fish
 4) Sphyrna D) Sting ray
 5) Exocoetus E) Hammer headed shark
- 1) 1-A, 2-B, 3-C, 4-D, 5-E
 2) 1-B, 2-D, 3-A, 4-E, 5-C
 3) 1-E, 2-A, 3-B, 4-D, 5-C
 4) 1-E, 2-D, 3-C, 4-B, 5-A
- 270. Set - A Set - B**
 1) Hippocampus A) Siamese fighter
 2) Catla B) Magur
 3) Labeo C) Rohu
 4) Clarias D) Katla
 5) *Betta splendens* E) Sea horse
- 1) 1-A, 2-B, 3-C, 4-D, 5-E
 2) 1-C, 2-E, 3-A, 4-B, 5-D
 3) 1-E, 2-A, 3-B, 4-D, 5-C
 4) 1-E, 2-D, 3-C, 4-B, 5-A
- 271. Set - A Set - B**
 1) Silurian period A) Golden age of fishes
 2) Devonian period B) Golden age of amphibians
 3) Carboniferous C) Origin of birds
 4) Jurassic period D) Origin of earliest jawed fishes
- 1) 1-D, 2-A, 3-B, 4-C 2) 1-C, 2-B, 3-A, 4-D
 3) 1-C, 2-A, 3-B, 4-D 4) 1-D, 2-B, 3-C, 4-A
- 272. Set - A Set - B**
 1) Cretaceous period A) Origin of early mammals
 2) Triassic period B) Age of mammals
 3) Coenozoic era C) Modernization of birds
- 1) 1-A, 2-B, 3-C 2) 1-C, 2-D, 3-A
 3) 1-C, 2-A, 3-B 4) 1-C, 2-A, 3-D
- 273. Set - A Set - B**
 1) Salientians A) Blind worms
- 2) Urodeles B) Frogs & Toads
 3) Apodans C) Salamanders & Newts
- 1) 1-A, 2-B, 3-C 2) 1-B, 2-C, 3-A
 3) 1-C, 2-A, 3-B 4) 1-A, 2-C, 3-B
- 274. Set - A Set - B**
 1) Fishes A) Ichthyology
 2) Amphibians B) Mammalogy
 3) Aves C) Ornithology
 4) Mammals D) Batracology
- 1) 1-A, 2-B, 3-C, 4-D 2) 1-C, 2-D, 3-A, 4-B
 3) 1-C, 2-A, 3-B, 4-D 4) 1-A, 2-D, 3-C, 4-B
- 275. Set - A Set - B**
 1) Anurans A) Procoelous vertebrae
 2) Caecilians B) Amphicoelous vertebrae
 3) Urodeles C) Opisthocoelous vertebrae
- 1) 1-A, 2-B, 3-C 2) 1-B, 2-C, 3-A
 3) 1-C, 2-A, 3-B 4) 1-A, 2-C, 3-B
- 276. Set - A Set - B**
 1) Pterophyllum A) Sucker fish
 2) Echeneis B) Toad
 3) Bufo C) Tree frog
 4) Rana D) Frog
 5) Hyla E) Angel fish
- 1) 1-A, 2-B, 3-C, 4-D, 5-E
 2) 1-C, 2-E, 3-A, 4-B, 5-D
 3) 1-E, 2-A, 3-B, 4-D, 5-C
 4) 1-E, 2-D, 3-C, 4-B, 5-A
- 277. Set - A Set - B**
 1) Salamandra A) Flying frog
 2) Ichthyophis B) Salamander
 3) Rhacophorus C) Indian bull frog
 4) *Rana tigrina* D) Limbless amphibian
- 1) 1-A, 2-B, 3-C, 4-D 2) 1-B, 2-D, 3-A, 4-C
 3) 1-A, 2-C, 3-B, 4-D 4) 1-A, 2-D, 3-C, 4-B
- 278. Set - A Set - B**
 1) Chelone A) Indian crocodile/maggur
 2) Testudo B) Living fossil endemic to New Zealand
 3) Trionyx C) Freshwater turtle

- 4) Sphenodon D) Land turtle
5) *Crocodylus palustris* E) Marine green turtle
- 1) 1-A, 2-B, 3-C, 4-D, 5-E
2) 1-C, 2-E, 3-A, 4-B, 5-D
3) 1-E, 2-A, 3-B, 4-D, 5-C
4) 1-E, 2-D, 3-C, 4-B, 5-A
- 279. Set - A Set - B**
1) *Gavialis gangeticus* A) Flying lizard
2) *Hemidactylus* B) Cobra
3) *Draco* C) Indian gaviyal/gharial
4) *Naja naja* D) King cobra
5) *Ophiophagus hannah* E) Wall lizard
- 1) 1-C, 2-E, 3-A, 4-B, 5-D
2) 1-A, 2-B, 3-C, 4-D, 5-E
3) 1-E, 2-A, 3-B, 4-D, 5-C
4) 1-E, 2-D, 3-C, 4-B, 5-A
- 280. Set - A Set - B**
1) *Bungarus* A) Daboia/chain viper
2) *Vipera russeli* B) Rat snake
3) *Ptyas* C) Krait
4) *Tropidonotus* D) Grass / pond snake
- 1) 1-A, 2-B, 3-C, 4-D 2) 1-C, 2-E, 3-A, 4-B
3) 1-C, 2-A, 3-B, 4-D 4) 1-E, 2-D, 3-C, 4-B
- 281. Set - A Set - B**
1) *Corvus* A) Pigeon
2) *Columba* B) Parrot
3) *Psittacula* C) Vulture
4) *Aptenodytes* D) Penguin
5) *Neophron* E) Crow
- 1) 1-A, 2-B, 3-C, 4-D, 5-E
2) 1-C, 2-E, 3-A, 4-B, 5-D
3) 1-E, 2-A, 3-B, 4-D, 5-C
4) 1-E, 2-D, 3-C, 4-B, 5-A
- 282. Set - A Set - B**
1) *Pavo* A) National animal of India
2) *Coracias benghalensis* B) State animal of Andhra Pradesh
3) *Panthera tigris* C) National bird of India
4) Antelope D) National bird of New Zealand
5) Kiwi E) State bird of Andhra Pradesh
- 1) 1-A, 2-B, 3-C, 4-D, 5-E
2) 1-C, 2-E, 3-A, 4-B, 5-D
3) 1-E, 2-A, 3-B, 4-D, 5-C
4) 1-E, 2-D, 3-C, 4-B, 5-A
- 283. Set - A Set - B**
1) Fore brain A) Optic lobes
2) Mid brain B) Cerebellum & Medulla oblongata
3) Hind brain C) Olfactory lobes, Cerebral hemispheres & Diencephalon
- 1) 1-A, 2-B, 3-C 2) 1-C, 2-A, 3-B
3) 1-C, 2-B, 3-A 4) 1-B, 2-A, 3-C
- 284. Set - A Set - B**
1) Olfactory lobes A) Control of voluntary actions
2) Cerebral hemispheres B) Sense of smell
3) Diencephalon C) Controls involuntary movements
4) Optic lobes D) Perception of heat, cold, pain and integrity of autonomous system
5) Cerebellum E) Sense of sight
6) Medulla oblongata F) Maintains equilibrium
- 1) 1-A, 2-B, 3-C, 4-D, 5-E, 6-F
2) 1-C, 2-E, 3-A, 4-B, 5-D, 6-F
3) 1-B, 2-A, 3-D, 4-E, 5-F, 6-C
4) 1-F, 2-E, 3-D, 4-C, 5-B, 6-A
- 285. Set - A Set - B**
1) Skin A) Organs of taste
2) Taste buds B) Organs of smell
3) Nasal chambers C) Organs of sight
4) Eyes D) Receptors of touch
- 1) 1-A, 2-B, 3-C, 4-D 2) 1-C, 2-D, 3-A, 4-B
3) 1-C, 2-A, 3-B, 4-D 4) 1-D, 2-A, 3-B, 4-C
- 286. Set - A Set - B**
1) Cleidoic eggs A) Allow the passage of with porous calcareous shell air to provide oxygen
2) Extra embryonic membranes B) To abandon ties with their ancestral aquatic habitat
3) Amniotic egg C) Make the egg an independent life

	support system	26) 4	27) 1	28) 3	29) 4	30) 2
4) Dry scally skin	D) Prevent water loss	31) 3	32) 1	33) 4	34) 4	35) 1
5) Limbs with clawed digits	E) Moving on land	36) 3	37) 4	38) 2	39) 3	40) 4
		41) 2	42) 2	43) 4	44) 2	45) 4
1) 1-A, 2-B, 3-C, 4-D, 5-E		46) 4	47) 4	48) 4	49) 4	50) 2
2) 1-C, 2-E, 3-A, 4-B, 5-D		51) 2	52) 4	53) 3	54) 4	55) 4
3) 1-A, 2-C, 3-B, 4-D, 5-E		56) 1	57) 1	58) 2	59) 1	60) 3
4) 1-E, 2-D, 3-C, 4-B, 5-A		61) 2	62) 4	63) 1	64) 4	65) 3
		66) 4	67) 4	68) 4	69) 2	70) 3
287. Set - A	Set - B	71) 2	72) 2	73) 1	74) 3	75) 2
1) Monotremes	A) True placentals	76) 3	77) 4	78) 1	79) 3	80) 3
2) Marsupials	B) Egg laying mammals	81) 1	82) 3	83) 4	84) 4	85) 2
3) Eutherians	C) Pouched mammals	86) 4	87) 1	88) 4	89) 3	90) 2
1) 1-A, 2-B, 3-C	2) 1-C, 2-B, 3-A	91) 4	92) 2	93) 3	94) 4	95) 4
3) 1-B, 2-C, 3-A	4) 1-A, 2-C, 3-B	96) 4	97) 4	98) 4	99) 3	100) 1
		101) 2	102) 4	103) 3	104) 4	105) 4
288. Set - A	Set - B	106) 4	107) 2	108) 2	109) 2	110) 4
1) Ornithorhynchus	A) Flying fox	111) 2	112) 3	113) 1	114) 4	115) 4
2) Macropus	B) Kangaroo	116) 1	117) 2	118) 2	119) 3	120) 4
3) Pteropus	C) Duckbilled Platypus	121) 3	122) 2	123) 3	124) 4	125) 2
4) Camelus	D) Monkey	126) 1	127) 2	128) 1	129) 1	130) 2
5) Macaca	E) Camel	131) 4	132) 2	133) 2	134) 4	135) 4
1) 1-A, 2-B, 3-C, 4-D, 5-E		136) 2	137) 4	138) 4	139) 4	140) 4
2) 1-C, 2-E, 3-A, 4-B, 5-D		141) 1	142) 2	143) 2	144) 3	145) 3
3) 1-C, 2-B, 3-A, 4-E, 5-D		146) 1	147) 3	148) 2	149) 2	150) 1
4) 1-E, 2-D, 3-C, 4-B, 5-A		151) 1	152) 2	153) 3	154) 2	155) 4
		156) 2	157) 3	158) 4	159) 1	160) 4
289. Set - A	Set - B	161) 1	162) 3	163) 4	164) 4	165) 3
1) Rattus	A) Dog	166) 4	167) 3	168) 4	169) 4	170) 2
2) Canis	B) Rat	171) 2	172) 4	173) 3	174) 2	175) 4
3) Felis	C) Elephant	176) 3	177) 2	178) 1	179) 3	180) 2
4) Elephas	D) Cat	181) 4	182) 4	183) 2	184) 4	185) 4
1) 1-A, 2-B, 3-C, 4-D	2) 1-C, 2-D, 3-A, 4-B	186) 4	187) 4	188) 3	189) 2	190) 4
3) 1-B, 2-A, 3-D, 4-C	4) 1-A, 2-D, 3-C, 4-B	191) 4	192) 3	193) 2	194) 3	195) 4
		196) 2	197) 2	198) 4	199) 2	200) 1
290. Set - A	Set - B	201) 1	202) 2	203) 3	204) 3	205) 3
1) Equus	A) Lion	206) 4	207) 2	208) 4	209) 3	210) 4
2) Dolphin	B) Blue whale	211) 1	212) 4	213) 4	214) 3	215) 3
3) Balanoptera	C) Common dolphin	216) 2	217) 1	218) 1	219) 2	220) 4
4) <i>Panthera leo</i>	D) Horse	221) 4	222) 2	223) 3	224) 3	225) 4
1) 1-A, 2-B, 3-C, 4-D	2) 1-D, 2-C, 3-B, 4-A	226) 4	227) 2	228) 4	229) 4	230) 4
3) 1-B, 2-A, 3-D, 4-C	4) 1-A, 2-D, 3-C, 4-B	231) 4	232) 4	233) 4	234) 4	235) 3
		236) 4	237) 4	238) 4	239) 4	240) 4
		241) 3	242) 2	243) 4	244) 4	245) 4
		246) 4	247) 4	248) 4	249) 2	250) 4
		251) 1	252) 4	253) 4	254) 3	255) 4
		256) 4	257) 2	258) 3	259) 3	260) 2
		261) 2	262) 1	263) 1	264) 1	265) 2
		266) 1	267) 4	268) 3	269) 2	270) 4
		271) 1	272) 3	273) 2	274) 4	275) 1

KEY

1) 2	2) 3	3) 4	4) 1	5) 4
6) 4	7) 4	8) 1	9) 4	10) 4
11) 3	12) 2	13) 4	14) 3	15) 4
16) 4	17) 4	18) 4	19) 4	20) 3
21) 3	22) 1	23) 2	24) 3	25) 3

276) 3	277) 2	278) 4	279) 1	280) 3
281) 3	282) 2	283) 2	284) 3	285) 4
286) 3	287) 3	288) 3	289) 3	290) 2

ASSIGNMENT - I

1. **Assertion (A): It is necessary to study the life history of an ascidian to consider it as a chordate**

Reason (R): Tadpole larva of ascidians has a notochord that disappears in the adult

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A is true & R is false
- 4) A is false & R is true

2. **Assertion (A): Cephalochordates are often described as 'typical chordates'**

Reason (R): They possess the principal chordate characters such a notochord, dorsal tubular nerve cord and pharyngeal slits throughout their life

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A is true & R is false
- 4) A is false & R is true

3. **Assertion (A): Petromyzon (Lamprey) exhibit anadromous migration**

Reason (R): Migration of organisms from marine water to freshwater is called anadromous migration

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A is true & R is false
- 4) A is false & R is true

4. **Study the following and arrange in a sequence**

A) Number of sheaths that surrounde the T.S. of notochord

B) Number of semicircular canals in the internal ear of an gnathostomata

C) Number of heart chambers in cephalochordate

D) Number of gill slits in urochordata

- 1) D ----> A ----> B ----> C
- 2) A ----> B ----> C ----> D
- 3) C ----> A ----> B ----> D
- 4) D ----> C ----> B ----> A

5. **Chordates with persistent notochord throughout life are**

- 1) Lancelets, Petromyzon & Hag fishes
- 2) Amphioxus, Ascidians & Cartilagenous fishes
- 3) Ascidia, Myxin & Salpa
- 4) Branchiostoma, Pyrosoma & Doliolum

6. **Read the following statements about Urochordata**

A) Body is un-segmented and covered by a test composed of cellulose

B) Dorsal heart which alternately reverses the direction of the flow of blood

C) Notochord confined to the tail throughout life and hence, the name urochordata

Which of the above are correct

- 1) A & C
- 2) A & B
- 3) B & C
- 4) A only

7. **Read the following statements about urochordata**

A) Circulatory system is open type with a dorsal heart

B) Circulatory system is closed type with a dorsal heart

C) Paired gills slits opening into the pharynx

D) Paired gill slits opening into an ectoderm lined atrial cavity surrounds the pharynx

Which of the above are correct?

- 1) A & C
- 2) A & D
- 3) B & C
- 4) C & D

8. **Double origin chordate fundamental character is**

- 1) Notochord
- 2) Pharyngeal gill slits
- 3) Dorsal tubular nerve cord
- 4) Post anal tail

9. **One of the following is believed to be the fore runner of the thyroid gland of a vertebrate**

- 1) Endostyle
- 2) Pygostyle
- 3) Urostyle
- 4) Crystalline style

- 10. Origin period of chordates is**
 1) Cambrian 2) Pre-cambrian
 3) Devonian 4) Carboniferous
- 11. Number of semicircular canals in the internal ear of gnathostomata is**
 1) 1 2) 2
 3) 3 4) 4
- 12. Location of endostyle in protochordates is**
 1) Dorsal wall of pharynx
 2) Dorsal wall of buccal cavity
 3) Ventral wall of buccal cavity
 4) Ventral wall of pharynx
- 13. Assertion (A) : Retrogressive metamorphosis is exhibited by urochordates**
Reason (R): Their larval form develops notochord during metamorphosis
 1) A & R are correct and R is the correct explanation of A
 2) A & R are correct but R is not the correct explanation of A
 3) A is true & R is false
 4) A is false & R is true
- 14. Match the following and choose the correct answer**
 A) Nuclei pulposi 1) Amphioxus
 B) Filter feeders 2) Pyrosoma
 C) Tunicates 3) Anadromous migration
 D) Lamprey 4) Remnants of notochord
 1) A-4, B-1, C-2, D-3 2) A-1, B-4, C-3, D-2
 3) A-3, B-1, C-4, D-2 4) A-4, B-3, C-1, D-2
- 15. Study the following**
A) In agnatha, internal ear has three semicircular canals
B) Cephalochordates are with gonads but without gonoducts
C) In agnatha, internal ear has four semicircular canals
Correct ones of the above are
 1) Only A & B 2) Only B
 3) Only A & C 4) A, B & C
- 16. Nerve cord of chordates is**
 1) Single, Dorsal, Tubular & Non-ganglionated
 2) Single, Ventral, Tubular & Non-ganglionated
 3) Single, Dorsal, Solid & Ganglionated
 4) Single, Dorsal, Tubular & Ganglionated
- 17. The chordate group that does not have notochord in adult stage is**
 1) Lancelets 2) Cyclostomes
 3) Cartilaginous fishes
 4) Tunicates
- 18. Echinoderms, hemichordates and chordates are believed to have same deuterostomate origin, because they exhibit**
 1) Spiral, indeterminate cleavage & enterocoelom
 2) Radial, determinate cleavage & enterocoelom
 3) Radial, indeterminate cleavage & enterocoelom
 4) Spiral, determinate cleavage & schizocoelom
- 19. Match the items of both columns correctly**
 A) Scoliodon 1) Saw fish
 B) Pristis 2) Hammer-headed shark
 C) Trygon 3) Dog fish
 D) Sphyrna 4) Electric ray
 5) Sting ray
 1) A-2, B-1, C-4, D-3 2) A-1, B-3, C-4, D-2
 3) A-3, B-1, C-4, D-2 4) A-3, B-1, C-5, D-2
- 20. Identify and angel fish from the following**
 1) Catla 2) Exocoetus
 3) Hippocampus 4) Pterophyllum
- 21. The pelagic, colonial and bioluminescent tunicate is**
 1) Ascidia 2) Doliolum
 3) Salpa 4) Pyrosoma
- 22. The protochordate that doesn't have heart, respiratory pigment, blood corpuscle but performs respiration through the general body surface is**
 1) Doliolum 2) Oikopleura
 3) Petromyzon 4) Branchiostoma
- 23. Hagfish is also called**
 1) Amphioxus 2) Slime eel
 3) Lancelet 4) Lamprey
- 24. Kidneys of cyclostomes are**
 1) Protonephric 2) Mesonephric
 3) Metanephric 4) Meso & metanephric

25. Match the following

- A) Echineis 1) Sea horse
B) *Betta splendens* 2) Angel fish
C) Pterophyllum 3) Sucker fish
D) Hippocampus 4) Siamese fighting fish
1) A-2, B-1, C-4, D-3 2) A-3, B-4, C-2, D-1
3) A-3, B-2, C-1, D-4 4) A-3, B-1, C-4, D-1

26. Reduced hair is seen in

- 1) Whales & Dolphins
2) Dolphins & Armadillos
3) Armadillos & Whales
4) Dolphins & Monotremes

27. Select the correct one regarding mammals

- 1) Well developed renal portal system
2) Corpora quadrigemina connects the two halves of cerebrum
3) Centrum of vertebrae is concave at both the faces
4) Double headed ribs

28. Cervical vertebrae in mammals may be

- 1) 7 / 6 / 9 2) 7 / 5 / 8
3) 7 / 9 / 8 4) 7 / 5 / 9

29. Identify the mammals with intra-abdominal testes

- 1) Monotremes 2) Cetaceans
3) Sea cows & Elephants
4) All the above

30. Mature RBC in mammals are

- 1) Circular, Concave & Nucleate
2) Biconcave, Circular & Eucleate
3) Biconvex, Circular & Eucleate
4) Biconvex, Circular & Eucleate

31. True placentals are

- 1) Monotremes 2) Marsupials
3) Eutherians 4) Both 1 & 2

32. Pouched mammals belong to

- 1) Monotremes 2) Marsupials
3) Eutherians 4) Cetaceans

33. Identify the correct match

- A) Manatee - Trichechus
B) Bradypus - Three-toed sloth
C) Cheloeplus - Two-toed sloth
1) A & B 2) B & C
3) All the above 4) A & C

34. Identify the correct one regarding mammals

- 1) Placenta in mammals is meant for nutrition only
2) Placenta is found in all mammals except eutherians
3) Corpus callosum is formed by four optic lobes
4) Mammals have larynx as sound producing organ

35. Teeth in mammals are

- 1) Thecodont, Heterodont & Diphyodont
2) Acrodont, Homodont & Polyphyodont
3) Thecodont, Homodont & Polyphyodont
4) Thecodont, Heterodont & Polyphyodont

36. Sacral vertebrae in mammals are

- 1) Seven 2) Six
3) Nine 4) Two - Five

37. Identify the incorrect one regarding mammals

- 1) Skull is dicondylic
2) Each half of lower jaw with 2 denteries
3) Oxygenated and deoxygenated types of blood are completely separated
4) Mammalian brain is relatively large when compared to that of other animals

38. Dentition in fishes is

- 1) Thecodont, Heterodont & Diphyodont
2) Acrodont, Homodont & Polyphyodont
3) Thecodont, Homodont & Polyphyodont
4) Thecodont, Heterodont & Polyphyodont

39. Identify the correct one regarding fishes

- 1) Skull is dicondylic
2) Centrum of vertebrae is vertebrae is flat at both faces
3) Well developed lateral line system
4) They are mostly ovoviviparous

40. Kidneys in fishes are

- 1) Pro & mesonephric
2) Mesonephric 3) Meso & metanephric
4) Metanephric

KEY

- 1) 1 2) 1 3) 1 4) 3 5) 1
6) 4 7) 4 8) 2 9) 1 10) 2
11) 3 12) 4 13) 3 14) 1 15) 2
16) 1 17) 4 18) 3 19) 4 20) 4
21) 4 22) 4 23) 2 24) 2 25) 2

- 26) 3 27) 4 28) 1 29) 4 30) 3
 31) 3 32) 2 33) 3 34) 4 35) 1
 36) 4 37) 2 38) 2 39) 3 40) 2

ASSIGNMENT - II

- Reptiles with Jacobson's organs are**
 - Snakes and Sphenodon
 - Snakes and Lizards
 - Crocodiles and Snakes
 - Chelonians and Lizards
- Arrange the following structures of frog in sequence based on the passage of sperms**
 - Ureter
 - Bidder's canal
 - Vasa efferentia
 - Transverse canals
 - Seminiferous tubules
 - E ----> C ----> B ----> D ----> A
 - E ----> C ----> B ----> A ----> D
 - E ----> C ----> A ----> B ----> D
 - E ----> B ----> C ----> D ----> A
- In frog heart, sinus venosus receives blood through**
 - Both hepatic and renal portal veins
 - Three aortic arches of each branch of conus arteriosus
 - Right and left branches of conus arteriosus
 - Three vena cavae
- Thecodont dentition is a distinctive feature of reptilian group that possess**
 - Four chambered heart
 - 10 pairs of cranial nerves
 - Respire through vascular cloacal wall
 - Living fossils
- Match the following**

A) Mesorchium	1) Connection between testes and body wall
B) Mesovarium	2) Mass of sperms
C) Milt	3) Connection between ovaries and body wall
D) Spawn	4) Mass of eggs

 - A-3, B-2, C-1, D-4
 - A-1, B-3, C-4, D-2
 - A-1, B-3, C-2, D-4
 - A-1, B-2, C-4, D-3
- The first group of poikilothermic amniotic vertebrates is**
 - Fishes
 - Aves
 - Amphibians
 - Reptiles
- Identify the correct match**
 - Bufo - Frog
 - Hyla - Flying frog
 - Rhacophorus - Tree frog
 - Ichthyophis - Limbless amphibian
- Number of sphincters present in the gut of frog**
 - 3
 - 7
 - 5
 - 4
- In frog, hepato-pancreatic duct opens into**
 - Duodenum
 - Stomach
 - Rectum
 - Bucco-pharyngeal cavity
- In amphibians, columella auris is the**
 - Hind limb bone
 - Cranial bone
 - Middle ear ossicle
 - Blood vessel
- The study of both amphibians and reptiles is called**
 - Batracology
 - Herpetology
 - Ornithology
 - Saurology
- Procoelous vertebrae are present in**
 - Reptiles and Fishes
 - Frogs and Reptiles
 - Frogs and Caecilians
 - Bufo and Newts
- Match the following**

A) Flying lizard	1) Ptyas
B) Chain viper	2) Crocodylus
C) Maggur	3) Daboia
D) Rat snake	4) Draco

 - A-4, B-2, C-3, D-1
 - A-4, B-3, C-1, D-2
 - A-4, B-3, C-2, D-1
 - A-4, B-1, C-3, D-2
- Study the following**
 - Wolffian duct functions as vas efferentia in females
 - Chelonians are edentate
 - Hemipenis is formed by the opposition of the two penis

Correct ones of the above are

 - II & III
 - I & II
 - I only
 - II only
- In frogs, the part of the brain controls involuntary movements is**
 - Cerebellum
 - Diencephalon
 - Cerebrum
 - Medulla
- In male frogs, copulatory pads are present on the**

- 1) First digit of hind limbs
- 2) Second digit of hind limbs
- 3) First digit of fore limbs
- 4) Second digit of fore limbs

17. Number of sacral vertebrae in reptiles is

- 1) 3
- 2) 4
- 3) 6
- 4) 2

18. The structures which appear first time in amphibians and reptiles respectively

- 1) Tympanum & Inter costal muscles
- 2) Lacrimal gland & Columella auris
- 3) Harderian gland & Sinus venosus
- 4) Tympanum & Conus arteriosus

19. Assertion (A): In reptiles, eggs are cleidoic Reason (R): In reptiles, eggs are covered by calcareous shell

- 1) A & R are correct and R is the correct explanation of A
- 2) A & R are correct but R is not the correct explanation of A
- 3) A is true & R is false
- 4) A is false & R is true

20. Number of aortic arches in amphibians is

- 1) 3
- 2) 3 pairs
- 3) 2
- 4) 2 pairs

21. In frog, number of digits in each fore limb and hind limb respectively

- 1) 4 and 4
- 2) 5 and 5
- 3) 4 and 5
- 4) 5 and 4

22. Type of dentition in amphibians

- 1) Acrodont, Heterodont & Polyphyodont
- 2) Thecodont, Homodont & Polyphyodont
- 3) Homodont, Polyphyodont & Thecodont
- 4) Homodont, Polyphyodont & Acrodont

23. Temporal fossea are seen in the skull of

- 1) Aves
- 2) Amphibians
- 3) Pisces
- 4) Reptiles

24. Reptiles without copulatory organ are included in

- 1) Rhynchocephalia
- 2) Chelonia
- 3) Crocodilia
- 4) Labrynthodontia

25. Limbless amphibian is characterised by

- 1) Procoelous vertebrae
- 2) Opisthocoelous vertebrae
- 3) Amphicoelous vertebrae
- 4) Amphiplatyan vertebrae

26. Match the following

- | | |
|-------------------------|-----------------------|
| A) Testes | 1) Ten - Twelve |
| B) Seminiferous tubules | 2) Two |
| C) Vasa efferentia | 3) 1 pair |
| D) Oviducts | 4) Innumerable |
| 1) A-1, B-2, C-4, D-3 | 2) A-2, B-4, C-1, D-3 |
| 3) A-2, B-4, C-3, D-1 | 4) A-2, B-1, C-3, D-4 |

27. Amphibians with scales are included in

- 1) Urodela
- 2) Chelonia
- 3) Anura
- 4) Apoda

28. In frog, the common passage for digestive and urinogenital system is

- 1) Anus
- 2) Cloaca
- 3) Rectum
- 4) Ileum

29. Find out the correct one about reptiles

- 1) Cleavages are holoblastic and discoidal
- 2) Lower jaw is formed by 5 bones
- 3) Vascular cloacal wall helps in respiration in chelone
- 4) RBC are enucleate

30. Most important type of respiration in frog is

- 1) Bucco-pharyngeal
- 2) Branchial
- 3) Cutaneous
- 4) Pulmonary

31. Enzymes are absent in

- 1) Intestinal juice
- 2) Bile juice
- 3) Gastric juice
- 4) Pancreatic juice

32. The key adaptations that lead to the success of reptiles are the

- 1) Internal fertilization
- 2) Dry scally skin
- 3) Pulmonary breathing
- 4) All the above

33. In frog, the blood cells help in haemostasis are

- 1) Erythrocytes
- 2) Amoebocytes
- 3) Thrombocytes
- 4) Granulocytes

34. Tadpole of frog resembles a fish in

- 1) Scally exoskeleton
- 2) Having an air bladder
- 3) Carnivore diet
- 4) Respiring through gills

35. Study the following

- A) In frog, eye lids are movable

B) Ear is only useful for hearing
C) Diencephalon is concerned with integrity of autonomous nervous system

Correct ones of the above are

- 1) A & C 2) B & C
3) A & B 4) Only C

36. The structure that acts as middle man between brain and effectors

- 1) Cerebrum 2) Cerebellum
3) Spinal cord 4) Medulla

37. Amphibians flourished during this period

- 1) Devonian 2) Silurian
3) Jurassic 4) Carboniferous

38. Vertebrae with concave centrum at its posterior face is in

- 1) Anurans 2) Urodeles
3) Caecilians 4) Both 1 & 3

39. Study the following about reptiles

A) Jacobson's organs are specialized olfactory structures

B) Snakes have 10 pairs of cranial nerves

C) Limbs are without claws

Correct ones of the above are

- 1) Only A & B 2) Only B & C
3) Only A 4) A, B & C

40. Golden age of reptiles is

- 1) Coenozoic era 2) Devonian period
3) Carboniferous period
4) Mesozoic era

KEY

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|-------|-------|-------|-------|-------|
| 1) 1 | 2) 2 | 3) 4 | 4) 1 | 5) 3 |
| 6) 4 | 7) 4 | 8) 1 | 9) 1 | 10) 3 |
| 11) 2 | 12) 2 | 13) 3 | 14) 1 | 15) 4 |
| 16) 3 | 17) 4 | 18) 1 | 19) 1 | 20) 2 |
| 21) 3 | 22) 4 | 23) 4 | 24) 1 | 25) 3 |
| 26) 2 | 27) 4 | 28) 2 | 29) 3 | 30) 3 |
| 31) 2 | 32) 4 | 33) 3 | 34) 4 | 35) 4 |
| 36) 3 | 37) 4 | 38) 2 | 39) 1 | 40) 4 |