

ZOOLOGY QUESTION BANK

TDC - PART-I

SUBSIDIARY

(Non-Chordates, Cell Biology, Genetics and Evolution)

× × ×

MULTIPLE CHOICE QUESTIONS



**UNIVERSITY DEPARTMENT OF
ZOOLOGY**

**B.R.AMBEDKAR BIHAR UNIVERSITY,
MUZAFFARPUR-842001**

2021

ZOOLOGY SUBSIDIARY

1. Paramecium has
(a) One nucleus (b) Two nucleus
(c) Three nucleus (d) Four nucleus
2. In Ascaris Penial setal arise from
(a) Cloace of male (b) anus of female
(c) Vulva of female (d) None of these
3. The causative agent of liver rot in sheep is
(a) Degesia (b) Fasciola (c) Taenia (d) Schistosoma
4. The suicidal bag of Cell is
(a) Acrosome (b) Lysosome (c) Nucleosome (d) Polyri bosome
5. In plasma membrane the hydrophilic ends of phospholipids molecules
(a) Face protein molecule (b) Face each other
(c) Are not found (d) have not specific end
6. Which of the following is back cross
(a) $TT \times Tt$ (b) $TT \times tt$ (c) $tt \times tt$ (d) $Tt \times tt$
7. In monohybrid cross the phenotypic ratio of dominant and recessive characters in F₂ generation is
(a) 1:2:1 (b) 3:1 (c) 9:1 (d) 9:3:3:1
8. The functional unit in the compound eye of prawn is known is
(a) Stigma (b) Ocellus (c) ommatidium (d) eye spot
9. Prokaryotic Ribosomes are
(a) 30s (b) 50s (c) 70 s (d) 80s
10. Ribosomes help in
(a) Lipogenesis (b) Protein synthesis
(c) Chromosome synthesis (d) Glucose synthesis
11. Linked genes may be expressed by
(a) Crossing over (b) Polypoidy
(c) Gene mutation (d) Segregation
12. The exist pore of Scypha is
(a) Ostia (b) Osculum (c) Spongocoel (d) Apopyle
13. Canal system of scypha is

- (a) ascon type (b) Syconoid type (c) Luconoid type (d) Rhagon type
14. The number of tentacles in young medusa of obelia is
(a) 16 (b) 32 (c) 64 (d) 128
15. Ascaris is
(a) host (b) bisexual (c) dioecious (d) digenetic
16. Young stage of syconoid sponge is
(a) Coelobalstula (b) Paranchymule (c) Olynthus (d) Stomoblastula
17. Paleomon belongs to class
(a) Insecta (b) Chilopode (c) Crustace (d) Diplopoda
18. Unit membrane model of plasma membrane was proposed by
(a) Robertson (b) Nicolson
(c) Danielli & Davson (d) Singer & Nicolson
19. The main functions of contractile vacuole is
(a) Pumping out excess water (b) excretion
(c) Osmoregulation (d) respiration
20. "Origin of species" was written by
(a) Lamark (b) Charles Darwin (c) Spinger (d) Hugo-devries
21. Nematocyst is found in
(a) Coelentrata (b) Porifera (c) Annelide (d) Echinodermata
22. Mitochondrial DNA is
(a) rod-shape (b) Circular (c) Comma shaped (d) None of these
23. When two plants of red and yellow flowers are cross, plants with red flowers appear in F_1 generation. The result justifies
(a) Law of segregation (b) Law of dominance
(c) Law of complete linkage (d) Law of independent assortment
24. When two or more characters do assert independently in F_2 generation, it indicates that characters are not
(a) dominant (b) recessive (c) linked (d) lethal
25. Movement of food vacuole in paramecium along a definite path is known as
(a) cytokinesis (b) Cyclosis (c) Endomix's (d) Circulation

26. During conjugation how many paramecia are formed from one paramecium
(a) 2 (b) 4 (c) 8 (d) 16
27. In scypha water current are produced by
(a) choanocyto (b) archacocyto (c) pincocytes (d) Theocytes
28. The various forms of a given gene are called
(a) genotype (b) Phenotype (c) gamete (d) alleles
29. Emasculation is achieved by
(a) removal of anthers (b) removal of style
(c) removal of petals (d) removal of sepals
30. The sperm bears a cap like structure called acrosome. It is produced by
(a) Plasma membrane (b) A Golgi body
(c) Endoplasmic reticulum (d) Mitochondria
31. A species inhabiting different geographical areas is known as
(a) Sympatric (b) Allopatric (c) Siblings (d) Biospecies
32. Charles Darwin toward in a ship for 5 yrs
(a) Alexander (b) Philips (c) Dusmania (d) Beagle
33. The theory of evolution is based on
(a) Mutation (b) reproductive isolation
(c) Sexual reproduction (d) All of the above
34. The theory of natural selection failed to explain the
(a) Survival of the fittest (b) arrival of the fittest
(c) over reproduction (b) balance in size of population
35. Darwin in his natural selection theory did not believe in the role of which one of the following in organic evolution
(a) Parasites and predators as natural enemies
(b) survival of the fittest (c) Struggle for existence
(d) inheritance of acquired characters.
36. In paramecium, genetic information is stored in
(a) All the nuclei present (b) mitochondria
(c) Micronucleus (d) Macronucleus
37. Phylum protozoa is classified based on
(a) Size (b) shape (c) number of nuclei (d) locomotory organ

38. Which of these animals lack ventral nerve cord
(a) Pila (b) Earthworm (c) Leech (d) Cockroach
39. Organ of Bojanus in pila is
(a) Respiratory (b) Excretory (c) Digestive (d) Reproductive
40. The terrestrial species of Echinodermata is
(a) Brittle star (b) Star fish (c) Sea lily (d) None of these
41. The echinodermata are related to chordate by their similarity in the development of
(a) Gut (b) Nervous system (c) Heart (d) Coelom
42. Miracidium is a larval stage in the development of
(a) Taenia solium (b) Fasciola hepatica (c) Ascaris (d) Filaria worm
43. Assembly of two sub units 40s & 60s of the ribosome is
(a) 100 s unit (b) 80s unit (c) 70 s unit (d) 90s unit
44. Smooth endoplasmic reticulum is the site of
(a) Protein synthesis (b) Carbohydrate synthesis
(c) amino acid synthesis (d) lipid synthesis
45. Which of the following is associated with the structure of Golgi complex
(a) Cristae (b) Cisternae (c) Annuli (d) Quantosome
46. Which is non-membranous organelle from the following
(a) Ribosome (b) Endoplasmic reticulum
(c) Nucleus (d) Chloroplast
47. Which of the following is not a component of the nucleus?
(a) Chromosome (b) Nucleolus (c) Cytoplasm (d) Nuclear envelope
48. Characteristic features of Echinodermata is
(a) They are triploblastic (b) They have a true coelom
(c) Fertilization is external (d) All of these
49. Sympatric speciation develops reproductive isolation without
(a) geographical barrier (b) barrier to mating
(c) barrier to gene flow (d) genetic change
50. Which is fresh water sponge
(a) Scypha (b) Spongilla (c) Leucosolenia (d) None of these

51. A short length of DNA molecule has 80 thymine and 80 guanine. The total number of nucleotides in the DNA fragment is
(a) 160 (b) 40 (c) 320 (d) 640
52. Cell membrane is made up of carbohydrate fat and protein.
(a) All of three occur in equal proportion
(b) Lipid are in less proportion
(c) Carbohydrates are less proportion
(d) Proteins are in less proportion
53. According to fluid mosaic model, the plasma membrane
(a) has extrinsic and intrinsic protein (b) It is a semifluid structure
(c) Is selective permeable (d) All of the above
54. Z-DNA have a
(a) Double helical nature (b) Zig-Zag appearance
(c) Uracil base (d) Single stranded nature
55. Which of the following help in anchorage and defence of paramecium
(a) nematocyst (b) mucocyst (c) trichocyst (d) Cilia
56. When a cluster of genes show linkage behavior they
(a) do not show a chromosome map
(b) show recombination during meiosis
(c) do not show independent assortment
(d) induce cell division
57. Left handed DNA is
(a) A-DNA (b) B-DNA (c) Z-DNA (d) C-DNA
58. By which process misincorporated base can change into a permanent mutation
(a) Replication (b) Transcription (c) Translation (d) Transposition
59. Point mutation involves
(a) deletion (b) insertion (c) duplication (d) change in single base pair
60. Gene mutation occur at the time of
(a) DNA repair (b) DNA-replication
(c) Cell division (d) RNA transcription

61. Head, foot and visceral mass this combination of characters is diagnostic of
(a) Echinodermata (b) Arthropoda (c) Mollusca (d) Annelida
62. Devil fish is the common name of
(a) Sepia (b) Aurelia (c) Octopus (d) Silver fish
63. Which among following having open circulatory system
(a) Arthropoda (b) Mollusca (c) Annelida (d) Coelentrata
64. In earthworm clitellum occurs between
(a) Segment 14-15-16 (b) Segment 13-14-15
(c) Segments 15-16-17 (d) Segments 12-13-14
65. The excretory units of annelids are
(a) Uriniferous tubule (b) Nephridia
(c) Flame cell (d) Nephrostome
66. The mode of respiration in earthworm is
(a) pulmonary (b) Sub-cutaneous (c) gills (d) Cutaneous
67. Redia larva is of
(a) Taenia solium (b) Fasciola hepatica (c) Planaria (d) Ascaris
68. In the life cycle of liver fluke the sheep get infection when they ingest
(a) Metacercaria (b) Miracidia (c) Sporocyst (d) redia
69. Which one of the following is filter feeder
(a) Amoeba (b) Trypanosoma (c) Monocystis (d) Paramecium
70. In Prawn, Statocyst is present in
(a) antennules (b) antenna (c) mandible (d) rostrum
71. The image formed in the compound eye in bright light is
(a) Superposition (b) mosaic image
(c) inverted image (d) distorted image
72. Body wall of Ascaris lacks
(a) muscle (b) longitudinal muscle (c) circular muscle (d) both b and c
73. The first larva formed in liver fluke is
(a) redia (b) sporocyst (c) miracidium (d) cercaria
74. According to law of segregation in monohybrid cross the genotypic ratio in F₂ generation is
(a) 1:2 :1 (b) 3 : 1 (c) 1:3 (d) 2:1:3

75. An isolated gene is attached to a plasmid with the help of enzyme
 (a) Polymerase (b) Endonuclease (c) Ligase (d) Transferase
76. The enzyme endonuclease is used for
 (a) Gene isolation (b) Gene recombination
 (c) Gene synthesis (d) Protein synthesis
77. Which of the following correctly represent central dogma
 (a) DNA → RNA → Protein (b) RNA → DNA → Protein
 (c) DNA ⇌ RNA → Protein (d) Protein → DNA → RNA
78. i- gene is
 (a) Regulatory gene (b) Operator gene
 (c) Repressor gene (d) Structural gene
79. When a cross is made between normal male and carrier female
 (a) All boys will be coloured blind (b) All girls will be coloured blind
 (c) 50% boys will be coloured blind (d) 50% girls will be coloured blind
80. Crossing over occurs
 (a) At chiasmata between sister chromatids
 (b) At chiasmata between non-sister chromatia
 (c) At any where between non-sister chromatia
 (d) At anywhere between sister chromatids
81. Golgi body is produced by
 (a) cisternae (b) Vacuoles (c) Vesicles (d) Nuclear Membrane
82. Which of the following does not participated in protein synthesis
 (a) Rough surface endoplasmic reticulum
 (b) Smooth surface endoplasmic reticulum
 (c) RNA (d) DNA
83. Apple snail is common name of
 (a) Sepia (b) Unio (c) Pila (d) Octopus
84. Ospharadium is to test the purity of water in
 (a) Pila (b) Starfish (c) Housefly (d) Leech
85. The type of sugar in DNA is
 (a) triose (b) tetrose (c) Pentose (d) Herose
86. According to Charles Darwin evolution is
 (a) descent with modification (b) Natural selection
 (c) Survial of fittest (d) irreversible change

87. The cell involved in large amount of lipid synthesis do not posses this organelle on endophasmic reticulum
(a) Mitochondrion (b) Ribosome (c) Golgi apparatus (d) Lysosome
88. In human which cell lack nucleus
(a) Lysosome (b) RBC (c) Monocytes (d) Neutrophil
89. Who proposed that new cells arise only from the pre-existing cell
(a) Mohl (b) Virchow (c) Brown (d) Haeckel
90. The smallest living cells with cell wall are
(a) Viroids (b) Algae (c) Bacteria (d) Mycoplasma
91. The cells organelle is responsible for extracting energy from carbolydrate to form energy ATP is
(a) Lysosome (b) Ribosome (c) Chloroplast (d) Mitochondrion
92. Pick the incorrect statement
(a) Mycoplasma is a wall less microorganism
(b) Pill and fimbriae are mainly involved in motality of bacterial cells
(c) The bacterial cell wall is made up of peptidoglycan
(d) Cyanobacteria lack flagellated cell
93. As per fluid mosac model plasma membrane is composed of
(a) Phospholipids and integral proteins
(b) Phospholipids extrinsic and intrinsic protein
(c) Phospholipids and hemicelluloses
(d) Phospholipids and Oligosaccharids
94. Pick the correct statement regarding plams membrane
(a) Lipids are arranged in a bilayer with polar heads
(b) Na⁺ and K⁺ ions more across cell membrane by passive transports
(c) Fluid mosaie model was proposed by singer and Nicolson
(d) Proteins make up 60-70% of cell membrane
95. This structure between two adjacent cells is an effective transport pathway
(a) Plasmalemma (b) Plasmodesmata (c) Plastiquinone (d) ER
96. The tendency of an offspring to resemble its parent is known as
(a) Variation (b) Heridity (c) Resemblance (d) Inheritance
97. Who is known as the "Father of Geneties"

- (a) Morgan (b) Mendel (c) Watson (d) Bateson
98. The alternate form of a gene is
(a) Alternate type (b) Recessive character
(c) Dominant Character (d) Allele
99. The genotypic ratio of a monohybrid cross is
(a) 1 : 2 : 1 (b) 3:1 (c) 2:1:1 (d) 9:3:3:1
100. The crossing of F1 to either of the parents is known as
(a) Test cross (b) Back cross (c) F1 cross (d) All of the above
101. Which of the following statements is true regarding the law of segregation?"
(a) Law of segregation is the law of purity of genes
(b) Alleles separate from each other during gametogenesis
(c) Segregation of factor is due to the segregation of chromosomes during meiosis
(d) All of the above
102. Homozygosity and heterozygosity of an individual can be determined by
(a) back cross (b) self-fertilization (c) Test cross (d) All of the above
103. An exception to Mendel's law is
(a) Independent assortment (b) Linkage
(c) Dominance (d) Purity of gametes
104. Pea plants were used in Mendel's experiments because
(a) They were cheap (b) They had contrasting characters
(c) They were available easily (d) All of the above
105. The smallest unit of genetic material which produces a phenotypic effect on mutation is
(a) Muton (b) Gene (c) Recon (d) Nucleic acid
106. Mendel's findings were rediscovered by
(a) correns (b) De vries (c) TS Chermark (d) All of the above
107. Alleles are
(a) Alternate forms of genes (b) Linked genes
(c) Chromosomes that have crossed over (d) Homologous chromosomes

108. When the activity of one gene is suppressed by the activity of a non-allelic gene it is known as
- (a) Pseudo-dominance (b) Hypostasis
(c) Epistasis (d) Incomplete dominance
109. Cystic fibrosis is
- (a) Sex-linked recessive disorder
(b) Autosomal dominant disorders
(c) Autosomal recessive disorder
(d) Sex-linked dominant disorder
110. 9:7 ratio is the F₂ generation represents
- (a) Incomplete dominance (b) Co-dominance
(c) Epistasis (d) Complementary interaction
111. A small amount of lethal mutation is always present in the population due to
- (a) Positive selection (b) Negative selection
(c) Frequency - dependent selection (d) Mutation-selection balance
112. If a plant with genotype AaBb is self fertilized, the probability of getting AABB genotype will be (A and B are not linked)
- (a) 1/2 (b) 1/4 (c) 1/8 (d) 1/16
113. How many phenotypes can occur in the human blood group ABO with Alleles |A |B₁ ?
- (a) 2 (b) 3 (c) 4 (d) 1
114. The geometrical device that helps to find out all the possible combinations of male and female gametes is known as
- (a) Bateson square (b) Mendel square
(c) Punnett square (d) Mendel's cube square
115. Which term represents a pair of contrasting characters?
- (a) Heterozygous (b) Homozygous
(c) Codominant genes (d) Allelomorphs
116. Which one is used for knowing whether or not a population is evolved
- (a) Degree of evolution (b) Genetic drift
(c) Proportion between acquired variation
(d) Hardy Weinberg equation

117. According to De Varies theory, evolution is
(a) Jerky (b) discontinuous
(c) Continuous and smooth (d) both a and b
118. Mutation may be described as
(a) Continuous genetic variation (b) Phenotypic change
(c) Discontinuous genetic variation (d) Change due to hybridization
119. The theory of use and disuse was given by
(a) Stebbins (b) Lamarck (c) Aristotle (d) Darwin
120. The evolution of a species is based upon the sumtotal of adaptive changes preserved by
(a) natural selection (b) isolation (c) speciation (d) human conservation
121. Genetic drift is on account of
(a) Variation (b) Mutation
(c) increases in population (d) decrease in population
122. According to Neo-Darwinism, natural selection operates through
(a) Fighting between organisms (b) Variations
(c) Killing weaker organism (d) Differential reproduction
123. Sympatric speciation develops reproductive isolation without
(a) Geographic barrier (b) Barrier to mating
(c) Barrier to gene flow (d) Genetic change
124. Quick change in phenotypes in a small based of colonizer is called
(a) Founder effect (b) Genetic bottleneck (c) Genetic drift (d) Gene flow
125. Genetic drift is found in
(a) Small population with or without mutated genes
(b) Large population with random mating
(c) Plant population (d) Animal population
126. Which as related to reproduction isolation
(a) genetic isolation (b) temporal isolation
(c) behavioural isolation (d) All of these
127. In which condition gene ratio remain constant in a species
(a) Gene flow (b) mutation (c) random mating (d) sexual selection

128. Lamarck theory of organic evolution is usually known as
(a) Natural selection (b) Inheritance of acquired characters
(c) Descent with charge (d) Continuity of germ plasm
129. A species inhabiting different geographical area is known as
(a) Sympatric (b) allopatric (c) Sibling (d) biospecies
130. Balancing selection is concerned with the successful reproduction of
(a) Homozygous recessive (b) Homozygous individual
(c) Heterozygous individual (d) All of the above
131. The earthworm is placed under the group
(a) Polychaeta (b) Hirudinea (c) Oligochaeta (d) Crustacea
132. The typhlosole in earthworm is related to
(a) respiration (b) excretion (c) absorption (d) reproduction
133. The most effective organ for food digestion in earthworm
(a) mouth (b) Buccal cavity (c) Pharynx (d) Stomach
134. What is present on the 5th to 9th segments of the earthworm body
(a) Clitellum (b) Peristomium
(c) Female genital pore (d) Spermathecal aperture
135. Which is the female genital pore present in earthworm
(a) 16th segment (b) 18th segment
(c) 14th segment (d) 9th segment
136. In arthropods, the coelom is reduced to the
(a) Cavities (b) gonads (c) limbs (d) joints
137. In arthropods the growth is accompanied by the process of
(a) moulting only (b) ecdysis only (c) mitosis (d) moulting and ecdysis
138. Crayfish, lobsters and shrimps are included under subphylum
(a) annelids (b) Arachnida (c) crustacean (d) Fishes
139. Flagellated cells which line the spongocoel in porifera is known as
(a) Oxtia (b) meseuchymal cells (c) Choanocytes. (d) Oscula
140. Which of the following is not a characteristics of the phylum Arthropoda
(a) Metameric segmentation (b) Jointed appendages
(c) Chitinous exoskeleton (d) Parapodia

141. This is an example of belaterally symmetrical and triplobalstic animal
(a) Cnidaria (b) Sponges (c) ctenophore (d) Round worm
142. Phylum Annelida is not characterized by
(a) Segmentation (b) closed circulatory system
(c) Ventral nerve cord (d) Pseudocoelom
143. Which contain notochord in the embryonic stage?
(a) Non-chordate (b) Vertebrates
(c) All chordates (d) Some of the chordate
144. A characteristic features, which is present only in the phylum coelenterate is
(a) nematocyst (b) Flame cells (c) hermaphrodite (d) spicules
145. Cnidaria which exhibit only polypstage
(a) Cubozoa (b) Scyphozoa (c) Anthozoa (d) Hydrozoa
146. In Flatworm, excretion is performed by
(a) Protonephridia (b) Flame cells (c) Green Gland (d) Malpighian tubule
147. The group of mollusks which posses eyes similar to vertebrates
(a) bivalvia (b) gastropoda (c) Cephalopoda (d) Pelecypoda
148. Tube feet are found in
(a) Cuttle fish (b) Cray fish (c) Star fish (d) Jelly fish
149. In Ascaris
(a) Male tail is curved (b) Female tail is curve
(c) Both male and female tail is curved (d) None of these
150. When a fresh water protozoa kept in marine water
(a) It will die (b) contractile vacuole disappear
(c) There is no change (d) None of these
151. The number of contractile vacuole in paranecilum is
(a) 1 (b) 2 (c) 3 (d) 4
152. The term gene was coined by
(a) Mc Clintock (b) Morgan (c) Johnsen (d) De Duve
153. Functional unit of gene that specifies synthesis of one polypeptide is
(a) Codon (b) Cistron (c) Recon (d) Muton
154. Smallest gene affected by mutation is
(a) Muton (b) Cistron (c) Recon (d) Exon

155. Intron is part of DNA which
(a) Codes for protein synthesis (b) Helps in joining pieces of DNA
(c) Does not code for protein synthesis (d) initiates transcription
156. In split gene, the coding sequences are called
(a) Introns (b) Operons (c) Exons (d) Cistrons
157. Gene capable of moving from one chromosomes to another?
(a) cosmid (b) Exonic gene (c) Transposon (d) Mutagene
158. DNA elements, which can switch their position, are called
(a) Exons (b) Introns (c) Cistrons (d) Transposons
159. A distinct mechanism that usually involves a short segment of DNA with remarkable capacity to move from one location in a chromosome to another, this is called
(a) DNA replication (b) DNA transposition
(c) DNA hybridization (d) DNA recombination
160. Transformation experiment was first performed on which of the following bacteria?
(a) E.Coli (b) Salmonella (c) Pasteurella (d) Diplococcus pneumonia
161. DNA is mainly found in
(a) Nucleus only (b) Nucleus and cytoplasm
(c) Cytoplasm only (d) Nucleus and cell wall
162. In DNA helix, cytosine is paired with guanine by
(a) Covalent bond (b) phosphate bond
(c) Two hydrogen bonds (d) Three hydrogen bonds
163. Select the specific base pairs of DNA
(a) Adenine and cytosine (b) Adenine and thymine
(c) Guanine and adenine (d) Guanine and uracil
164. The number of hydrogen bonds between adenine and thymine in a DNA molecule are
(a) Two (b) Three (c) Four (d) Eight
165. DNA synthesis can be specially measured by estimating the incorporation of radio labeled
(a) Uracil (b) Adenine (c) Thymidine (d) Deoxyribose sugar

166. In DNA, when AG-CT occur, their associate is as per which of the following pair?
(a) AG-CT (b) AC-GT (c) AT-GC (d) AGC-GCT
167. Genes are made up of
(a) Histones (b) Lipoprotein (c) Hydrocarbons (d) Polynucleotides
168. Nucleoside is
(a) Sugar + Phosphate (b) Purine/pyrimidine + sugar
(c) Purine/pyrimidine (d) Purine/pyrimidine+sugar+phosphate
169. A Nucleotide is
(a) Base + Sugar (b) Base + Phosphate
(c) Sugar + Phosphate (d) Base + Sugar + Phosphate
170. In a polynucleotide strand of DNA nucleotides are attached by
(a) Hydrogen bonds (b) Covalent bonds
(c) Vander Waal force (d) Electrovalent bond
171. Which of the following statement regarding a double helical molecule of DNA is true?
(a) Each strand is identical (b) Each strand replicates itself
(c) Bases are perpendicular to the axis
(d) All hydroxyl groups are involved in linkage
172. If the sequence of based in DNA is ATTCGATG then the sequence of bases in its transcript will be
(a) CAUGGAAU (b) UAAGCUAC (c) GUAGCUUA (d) AUUCGAUG
173. How many base pairs are present in one turn of DNA
(a) 10 (b) 9 (c) 11 (d) 12
174. The usual method of DNA replication is
(a) Replication (b) Dispersive (c) Transcription (d) Semi-Conservative
175. Which of the following is true for DNA helicases?
(a) DNA helicase hydrolyse ATP
(b) DNA helicases are ATP dependent unwinding enzymes
(c) Promote separation of two parental strand and establish replication focks
(d) All of these

176. Which of the following enzymes is used to join bits of DNA?
(a) Ligase (b) Primase (c) Endonuclease (d) DNA polymerase
177. Which purine base is found in RNA?
(a) Cytosine (b) Guanine (c) Thymine (d) Uracil
178. HIV has a protein coat and a genetic material which is
(a) s-s DNA (b) s-s RNA (c) d-s DNA (d) d-S RNA
179. RNA retroviruses have a special enzymes that
(a) Translates host DNA (b) Disintegrates host DNA
(c) Polymerises host DNA (d) Transcribes viral RNA to cDNA
180. In Rous sarcoma virus information flow in
(a) DNA →Protein →RNA (b) DNA →RNA →Protein
(c) RNA →DNA →Protein (d) RNA →DNA →RNA →protein
181. Genes connected with cancers are
(a) cancer genes (b) carcinoma genes
(c) oncogenes (d) sex linked genes
182. Which of the following step of translation does not consume a high energy phosphate bond?
(a) Translocation (b) Amino acid activation
(c) Peptidyl transfer reaction (d) Aminoacyl + RNA binding to A-site
183. Jacob and Monod studied lactose metabolism in E.coli and proposed operon concept.
(a) Prokaryotes (b) Eukaryotes (c) Protozoans (d) All of these
184. Genes that are involved in turning on or off the transcription of a set of structural genes are called
(a) operators genes (b) Redundant genes
(c) Regulatory genes (d) Polymorphic genes
185. The lac operon is an example of
(a) Drabinose operon (b) Inducible operon
(c) Represible operon (d) Overlapping genes
186. In operon model Regulator gene functions as
(a) Represser (b) Regulator (c) Inhibitor (d) All of these

187. In E.coli, during lactose metabolism repressor binds to
(a) Regulator gene (b) promoter gene
(c) operator gene (d) structural gene
188. A gene which synthesizes a repressor protein is
(a) operator gene (b) structural gene (c) promoter gene (d) Regulator gene
189. In E.Coli, lac operon is induced by
(a) Lactose (b) Promoter gene (c) β -glucosidase (d) I-gene
190. The second messenger inside a cell is
(a) ATP (b) ADP (c) NADP (d) Cyclic AMP
191. Exon part of MRNA, has code for
(a) Protein (b) Lipid (c) Phospholipid (d) Carbohydrate
192. Which of the following is a termination codon for the biosynthesis of protein?
(a) UAA (b) UAG (c) UGA (d) All of these
193. Out of 64 codons, 61 codons code for 20 types of amino acid, It is called
(a) Wobbling of codon (b) Overlapping of genes
(c) Universality (d) Degeneracy
194. The codon causing chain termination are
(a) TAG, TAA, TGA (b) GAT, AAT, AGT
(c) AGT, TAG, UGA (d) UAG, UGA, UAA
195. Which of the following serves as terminal codon?
(a) AUG (b) GCG (c) UAG (d) AGA
196. The genes are responsible for the growth and differentiation in an organism through the regulation of
(a) Translocation (b) Transformation
(c) Transduction and translation (d) Translation and transcription
197. Transcription takes place in
(a) Matrix (b) Cytosol (c) Nucleus (d) Cytoplasm
198. Transcription is a process in which
(a) RNA Synthesize (b) Protein Synthesize
(c) Assembly of ribosomes and Golgi bodies
(d) MRNA is formed from DNA

199. mRNA is synthesized on DNA template in which direction?
(a) 2'-4' (b) 3'-5' (c) 5'-3' (d) 7'-9'
200. Fertilization in scypha is
(a) External (b) Internal (c) Bisexual (d) Holoblastic
201. Phasmid are term associated with
(a) Taenia (b) Filaria worm (c) Ascaris (d) None of these
202. Green gland is found in
(a) Protein (b) Cockroach (c) Butterfly (d) Scorpion
203. Life originated in the past period of about
(a) 2.5 - 2.8 billion years (b) 4 - 5 billion years
(c) 3.3 - 3.5 billion years (d) 2.5 - 3.2 billion years
204. Theory of spontaneous generation was first reported experimentally by
(a) Sapllanzani (b) Von Helmont (c) Redi (d) Pasteur
205. Which scientist decisively proved that life on present earth can originate only from pre-existing life
(a) Louis Pasteur (b) Charles Darwin (c) Weismann (d) Boxmann
206. Chemical theory for origin of life was given by
(a) Stanley Miller (b) Oparin and Haldane
(c) Spallanzani (d) Louis Pasteur
207. Russian scientist who proposed the theory of origin of life
(a) Oparin (b) Haldane (c) Miller (d) Fox
208. Planet nearest to sun is
(a) Earth (b) Moon (c) Mercury (d) Mars
209. Earth originate in the past period of about
(a) 4.5 billion years (b) 8 billion years
(c) 3 billion years (d) 1 billion years
210. Gaseous mixture used by miller for synthesis of amino acid through heat and electric discharge included
(a) Methane, ammonia, hydrogen and water vapours
(b) Methane, ammonia, nitrogen and water vapours
(c) Methane, nitrogen, hydrogen and water vapours
(d) Ammonia, carbon, dioxide, nitrogen and water vapours

211. Miller and urey's experiment in its created atmosphere employed.
(a) Oxygen, ammonia, methane and water
(b) Hydrogen, ammonia, ethane and water
(c) Hydrogen, oxygen, nitrogen and water
(d) Hydrogen, ammonia, methane and water
212. The spark-discharge experiment to test chemical evolution of life was designed by
(a) Oparin and Haldane (b) Urey and Miller
(c) Jacob and Monad (d) Dixon and Jolley
213. The most primitive cell like chemical aggregates capable of growth and division were
(a) Chemoautotrophs (b) Eobionts
(c) Procaryotes (d) Microspheres
214. First organisms to evolve on the earth were
(a) Saprotrophs (b) Chemoheterotrophs
(c) Phtoautotrophs (d) Chemo autotrophs
215. Life originated/origin of life took place in
(a) Life (b) Soil (c) mountains (d) water
216. Lamarck's theory of evolution is also called
(a) Theory of special creation (b) Inheritance of acquired characters
(c) Survival of the fittest (d) Theory of spontaneous generation
217. Basis of Lamarckism
(a) Origin of species (b) Inheritance of acquired characters
(c) Population dynamics (d) Struggle for existence
218. Homologous organs are
(a) Similar in behaviour (b) Similar in origin
(c) Similar in function (d) Similar in development
219. An important evidence of the organic evolution is occurrence of
(a) Analgous organs only (b) Analogous and vestigid organs
(c) Homologous and Analogous (d) Homologous and vestigial organs
220. Which of the following are homologous organs
(a) Wings of bat and wings of cockroach
(b) Wings of bird and wings of insect
(c) Wings of bird and hand of man
(d) Nails of human being and claws in animals
221. Which of the following exhibit homology?

- (a) Paddles of whale and hands of man
 - (b) Wings of pigeon and wings of bat
 - (c) Wings of birds and wings of butterfly
 - (d) None
222. Wings of pigeon, mosquito and bat show
- (a) Atavism (b) Mutation (c) Divergent evolution (d) Convergent evolution
223. Vestigial organs can be explained as
- (a) Helpful in location (b) Characteristics of birds
 - (c) Not of much use today (d) Common in many groups
224. Which of the following is the correct group of vestigial organs in man?
- (a) Appendix, coccyx, ear muscles and elbow joint
 - (b) Wisdom teeth, coccyx, body hair and ear muscles
 - (c) Nictitating membrane, ear muscles, eyelids and coccyx
 - (d) Wisdom tooth, body hairs, nictitating membrane and vermiform appendix
225. Which of the following set includes all vestigial structure of man
- (a) coccyx, appendix, ear muscle
 - (b) vermiform appendix, body hair, cochlea
 - (c) coccyx, wisdom teeth, patella
 - (d) Ear muscles, atlas, body hair
226. Which of the following is not vestigial in human
- (a) coccyx (b) Nail (c) Third molar (d) Abdomen
227. Archaeopteryx is called a connecting link, why?
- (a) It showed combined characters of reptiles and birds
 - (b) It showed combined characters of birds and mammals
 - (c) It showed combined characters of chordates and non-chordates
 - (d) None of these
228. In general in the development history of mammalian heart, it is observed that it passes through a two chambered fish-like heart, three chambered frog-like heart and finally four chambered stage. To which hypothesis can the above cited statement be approximated
- (a) Mendelian principle (b) Hardy - weinberg law
 - (c) Lamarck's principle (d) Biogenetic law
229. "Ontogeny repeats phylogeny" this is expressed by
- (a) Natural selection theory (b) Recapitulation theory

- (c) Mutation theory (d) Theory of inheritance of acquired characters
230. Which of the following eras, in geological time-scale, corresponds to the period when life had not originated upon the earth?
(a) Azoic (b) Mesozoic (c) Palaeozoic (d) Archaeozoic
231. Which of the following is the age of fishes
(a) Silurian (b) Ordovician (c) Devonian (d) Cambrian
232. Ancestral amphibians were tetrapods that evolved during
(a) Jurassic period (b) Cretaceous period
(c) Devonian period (d) Carboniferous period
233. In which of the following era, reptiles were the dominant species/regarded as age of reptiles?
(a) Coenozoic era (b) Archaeozoic era
(c) Palaeozoic era (d) Mesozoic era
234. Dinosaurs became extinct in
(a) Triassic period (b) Permian period
(c) Cretaceous period (d) Jurassic period
235. The geological era extending from present to 65 million years ago is called
(a) Proterozoic era (b) Palaeozoic era
(c) Coenozoic era (d) Mesozoic era
236. Mammals are supported to have evolved about how many years ago
(a) 1 million (b) 75 million (c) 220 million (d) 375 million
237. According to geological time scale, Homo sapiens evolved during
(a) Eocene (b) Pliocene (c) Pleistocene (d) Oligocene
238. The earliest fossil form, in the phylogeny of horse is
(a) Eohippus (b) Merychippus (c) Equus (d) Meshippus
239. Darwin finches are related to which of the following evidences?
(a) Fossil (b) Embryology (c) Anatomy (d) Geographical distribution
240. Which theory was proposed by Lamarck?
(a) Germ plasm theory (b) Acquired chromosomes are inherited
(c) Acquired characters are inherited (d) Continuity of life
241. Who prepared Germ plasm theory against Lamarck's principle of use and disuse?
(a) Darwin (b) Nuttall (c) Weismann (d) de Vries

242. Who was the scientist, who cut the tails of mice for several generations and yet found that the characteristics of taillessness was not inherited?
(a) Darwin (b) Bateron (c) Lamarck (d) Weismann
243. What is the basis of Darwin's natural selection?
(a) Use and disuse of organs (b) Inheritance of acquired characters
(c) variations (d) Prodigality, struggle for existence, survival of the fittest
244. Which of the following theories was not given by Darwin?
(a) struggle for existence (b) Natural selection
(c) survival of the fittest (d) Genetic drift
245. The idea of "survival of the fittest" was proposed by
(a) Wallace (b) Darwin (c) Haeckel (d) Herbert spencer
246. Pangenesis hypothesis was propounded by
(a) Weismann (b) Gatton (c) Wagner (d) Darwin
247. Which of these was the contribution of de varies?
(a) Theory of mutation (b) Law of dominance
(c) Theory of natural selection (d) Law of segregation
248. de varies pioneered theory of mutations to explain mechanism of evolution. Material on which he had experimented was
(a) Fruit fly (b) Garden pea
(c) Evening prime rose (oenothera lamarckiana) (d) China rose
249. Which of the following is the main category of mutation?
(a) Genetic mutation (b) Zygote mutation
(c) Somatic mutation (d) All of these
250. Phenomenon of 'Industrial Melanism' demonstrates
(a) Natural selection (b) Induced mutation
(c) Geographical selection (d) Reproduction isolation
251. H.J.Muller was awarded Nobel prize for his
(a) Discovery that ionizing radiations can induce gene mutation
(b) work on gene mapping in Drosophila
(c) Efforts to prevent the use of nuclear weapons
(c) Discovery that chemicals can induce gene mutation
252. Discontinuous variations are
(a) Mutations (b) Acquired characters
(c) Essential features (d) Non-essential feature

253. Which of the following term is not concerned with genetic recombination in bacteria?
(a) Translation (b) Transduction (c) Transformation (d) Conjugation
254. Genetic drift is
(a) Random change in gene frequencies
(b) Not common with inbreeding
(c) Orderly change in gene frequencies
(d) Produces great fluctuations in large populations
255. Genetic drift operates in
(a) Small isolated population (b) Large isolated population
(c) Slow reproduction population (d) Fast reproductive population
256. Genetic drift operates only in
(a) Island populations (b) Smaller populations
(c) Large populations (d) Mendelian population
257. Most striking example of point mutation is found in disease called
(a) Thalassaemia (b) Night blindness
(c) Down's syndrome (d) Sickle cell anaemia
258. The age of the fossil of Dryopithecus on the Geological time scale is
(a) 75×10^6 years back (b) 50×10^6 years back
(c) 25×10^6 years back (d) 20×10^6 years back
259. Ape and hominids evolved from
(a) Australopithecus (b) Dryopithecus (c) Homo habilis (d) Homo erectus
260. Which fossil man has been known from Siwalic hill in India?
(a) Pithecanthropus (b) Ramapithecus
(c) Sinanthropus (d) Zinjanthropus
261. Which of the following was the transitional stage between ape and humans?
(a) Homo habilis (b) Homo erectus
(c) Australopithecus ramidus (d) Both (b) and (c)
262. Evgene Dubois discovered fossil of man from
(a) Java (b) Africa (c) China (d) France
263. Maximum fossils of prehistoric man have been recovered from which continent?

- (a) Asia (b) America (c) Africa (d) Europe
264. The correct sequence of stages in the evolution of modern man (Homo sapiens) is
- (a) Neanderthal man, Australopithecus, cro-magnon man, Homo erectus, Modern Man
- (b) Australopithecus, Homo erectus, Neanderthal Man, Modern Man
- (c) Homo erectos, Australopithecus, Neaderthal man, cro-magnon man modern man
- (d) Australopithecus, Nean derthal man, Go-magnon man, Homo erectus, modern man
265. Neanderthal man had brain volume of
- (a) 1650 cc (b) 1450 cc (c) 1050cc (d) 950 cc
266. The cranial capacity was largest among the
- (a) peking man (b) African man
- (c) Java ape man (d) Neanderthal man
267. Cranial capacity of which primitive man resembles with modern man
- (a) Homo erectus (b) Java man
- (c) Homo nean derthalensis (d) Peking man
268. The correct statement for evolution of man is
- (a) Homo erectos was preceded by Homo habiles
- (b) Au stralopithecus lived in Australia
- (c) Neanderthal man and cro-magnon man lived at the same time also
- (d) All of them
269. Which of the following order is the correct order of evolutionary history of man?
- (a) Peking man, heidel berg man, neandertha, cro-magnon
- (b) Peking, man, Homo sapiens, cro-magnon, neanderthal
- (c) Peking man, Neanderthal, Homo sapiens, hei delberg
- (d) Peking man, cro-magnon, Homo sapiens, neanderthal
270. In which pre-historic man's period was proper burial of dead bodies started?
- (a) Java man (b) Peking man

- (c) Cro-magnon man (d) Neanderthal man
271. Which of the following statements is correct?
- (a) Homo erectus is the ancestor of man
 - (b) Cro-magnon man's fossil has been found in Ethiopia
 - (c) Australopithecus is the real ancestor of Homo sapiens
 - (d) Neanderthal man is the direct ancestor of Homo sapiens
272. Homo sapiens evolved from
- (a) Neanderthal man (b) Java Man
 - (c) Cro-magnon man (d) Peking man
273. How do sponges feed?
- (a) Filter microorganisms from water brought in through pores
 - (b) Use nematocysts to capture small prey
 - (c) Extract decaying plant material from sediment
 - (d) Absorb hydrogen sulphide directly from the water
274. Which of the following are constraints imposed by the blind sac plan?
- (a) Only occurs in asexual organism
 - (b) Restricted to small size organism
 - (c) No separation of consumption and excretion
 - (d) b & c
275. Which one of the following has radial symmetry
- (a) Arthropoda (insects, spider, crustaceus)
 - (b) Cnidaria (Jelly fish, anemones & corals)
 - (c) Mollusca (clams, squid, octopus and sepia)
 - (d) None of these
276. What is coelom
- (a) A body cavity partially lined with mesoderm
 - (b) A body cavity lined with endoderm
 - (c) The body cavity of Jelly fish
 - (d) A body cavity completely lined with mesoderm
277. Which of the following phyla thought to be evolved first?
- (a) Arthropoda
 - (b) Cnidaria
 - (c) Mollusca
 - (d) Echinodermata
278. Which of the following are sensory abilities that are found among invertebrates?
- (a) Contact chemosensation
 - (b) Colour vision

- (c) Gravitational sensation (d) All of these
279. Which of the following is not a mechanism of asexual reproduction
(a) Hermaphordism (b) Budding (c) Parthenogenesis (d) Fission
280. Which of the following is not an advantage of the exoskeleton in arthropods and molluscks?
(a) Provides protection from predators
(b) Enhances sensory perception
(c) Provides rigid places for muscles to insert and against which can they do work.
(d) Permit greater jange of movement that body plans without a rigid skeletal structure.
281. Why it is impossible to have a single celled organism or an organism with only two tissue layers the size of an elephant?
(a) Not impossible, just by chance such an animal has never evolved
(b) locomotion would be difficult
(c) Not enough material could be moved across cell membranes quickly enough to meet nutritional and energetic requirement
(d) None of these
282. Which of the following phyla do not have blind-sac plan?
(a) Annelida (b) platyhelminthes (c) Ctenophora (d) Cnidarie
283. Which of the following is not a major factor in the success of Arthropoda
(a) Paired appendages (b) A chitinous exoskeleton
(c) Body segmentation (d) Radical symmetry
284. Which of the following phyla are not consumed for food by human
(a) Cnidaria (b) Arthropoda (c) Echidermata (d) Playhelminthes
285. Which of the following are not trends observed in the evolution of the central nervous system in invertebrate
(a) Increasing size of cerebral ganglia formation of a brain
(b) Reduction in the number of nerve chord
(c) Replacement of nerve chords by nerve nets
(d) Dominance of the ventral pair of nerve chords
286. Mitochondria is a organelle of which process?
(a) Krebs cycle (b) Glycolysis (c) Clavin cycle (d) A & b both
287. Tongue worm is name of

- (a) Devil fish (b) Limulus (c) Balanoglossus (d) Polychaeta
288. Bipinaria larva is found in
 (a) Balanoglossus (b) Star fish (c) Unio (d) Scolopendra
289. The power of regeneration occurs in
 (a) Coelentrata (b) Porifera (c) Echinodermata (d) All of these
290. Larva of Balanoglossus is
 (a) Tornia larva (b) Bipinaria Larva
 (c) Trochophor larva (d) Glochidium Larva
291. Testes sacs in earthworm is located in which segment
 (a) 13 & 14 (b) 9 & 10 (c) 11 & 12 (d) 10 & 11
292. Earthworm has no special structure for
 (a) Locomotion (b) nutrition
 (c) Respiration (d) circulation
293. Coenosarc is a
 (a) Living (b) Non-living (c) Inner, tubular, living (d) Non-cellular
294. Obelia belong to class
 (a) Scyphozoa (b) Anthozoa (c) Hydrozoa (d) None of these
295. A protozoa feeds on protozoa
 (a) Paramecium (b) Amoeba
 (c) Trypanosoma (d) Plasmodium
296. Which of the following statement about Darwin is true?
 (a) He failed to convince the majority of biologists and other educated people in the late 19th century that life evolves.
 (b) He thought that the biggest and strongest animals are always at an advantage in natural selection
 (c) His book on the origin of species did not sell well and the biologists in his time did not take much notice of it.
 (d) None of these
297. Medusa stage of cnidarians is advanced to polyp stage because
 (a) It has great power of contractility

- (b) It has marginal sense organ
 - (c) It is motile
 - (d) All of these
298. The stolon of obelia colony is known as
- (a) Hydranth
 - (b) Hydrorhiza
 - (c) Hyporhiza
 - (d) Root
299. The primary host of fasciola
- (a) Human
 - (b) Pig
 - (c) Sheep
 - (d) Dog
300. Mitochondria consist of circular DNA which works
- (a) Independently
 - (b) Under the control of nuclear DNA
 - (c) Under the control of RNA
 - (d) Under the Control of F_1 particle

