



10. The region of DNA with inverted repeats of base sequence having two fold symmetry over two strands of DNA  
A) Hoogsteen pairing      B) Palindrome sequence      *Ans. B*  
C) Non-palindrome sequence      D) None of these
11. Left handed DNA  
A) H DNA      B) B DNA      *Ans. D*  
C) A DNA      D) Z DNA
12. Organizer theory was proposed by  
A) Child      B) William Raux      *Ans. C*  
C) Spemann      D) Wolf
13. Organisms that directly or indirectly control the availability of resources to other species by causing changes in the physical state of their environment  
A) Keystone species      B) Engineer organisms      *Ans. B*  
C) Parasitic organisms      D) Critical link species
14. Shallow pool of water exposed to sunlight is  
A) Solar pond      B) Normal pond  
C) Extreme pond      D) Cyclic pond      *Ans. A*
15. Which of the following is the correct sequence of stages in evolution of modern horse?  
A) Eohippus, Merychippus, Mesohippus, Phiohippus, Equus  
B) Eohippus, Merychippus, Phiohippus Mesohippus, , Equus  
C) Eohippus, Mesohippus, Merychippus, Phiohippus, Equus  
D) Eohippus, Phiohippus Mesohippus, Merychippus, , Equus      *Ans. C*
16. Which of the following is an example of polymorphism in human population  
i. Sickle cell gene in human      ii. Albinism in human  
iii. ABO Blood group in human      iv. Melanism in human  
A) i & ii      B) ii & iv  
C) i & iii      D) iii & iv      *Ans. C*
17. Darwin finches in Galapagos island is an example of  
A) Ecological equivalence      B) Ecological Guild  
C) Ecological dominance      D) None of the above      *Ans. B*
18. “The birds in colder regions will have narrow wings while those in warmer areas will have broader wings” is stated by  
A) Allan’s rule      B) Rench rule  
C) Bermen’s rule      D) Gloger’s rule      *Ans. B*



30. 4D Syndrome is associated with the deficiency of  
A) Riboflavin    B) Biotin    C) Tocopherol    D) Niacin  
**Ans. D**
31. World Animal Day is on  
A) October 3    B) August 29  
C) September 16    D) December 2  
**Ans. A**
32. Example of an allosteric inhibitor  
A) Malonite    B) Cyanide  
C) Glucose-6-phosphate    D) None of these  
**Ans. C**
33. Holandric genes are present in  
A) Autosomes    B) X Chromosomes  
C) Y Chromosomes    D) X and Y Chromosomes  
**Ans. C**
34. Heterosis is  
A) Hybrid vigour    B) Hybrid sterility  
C) Hybrid incompatibility    D) Structural hybridity  
**Ans. A**
35. 'Black Water Disease' is caused by which species of plasmodium?  
A) *P. vivax*    B) *P. ovale*  
C) *P. falciparum*    D) *P. malariae*  
**Ans. C**
36. The phenotypic ratio in supplementary gene interaction is  
A) 9:7    B) 9:3:4    C) 9:6:1    D) 13:3  
**Ans. B**
37. Down's syndrome is an example of  
A) Aneuploidy    B) Polyteny  
C) Polyploidy    D) Monoploidy  
**Ans. A**
38. If a marriage is made between a universal donor mother and a universal recipient father, what will be the possible % of blood group of children?  
A) 100% O    B) 75% AB and 25% O  
C) 50% A and 50% B    D) 100% AB  
**Ans. C**
39. Cross sectional image of internal body structure can be obtained by using this medical technique  
A) EEG    B) PET    C) CAT    D) NMR
40. Crypt of Liberkuhn is an example for  
A) Simple tubular gland    B) Compound tubular gland  
C) Coiled tubular gland    D) Simple alveolar gland  
**Ans. C**
41. Liver and pancreas are derived from  
A) Embryonic foregut    B) Embryonic midgut  
C) Embryonic hindgut    D) Embryonic mesoderm  
**Ans. A**
- Ans. B**

42. Gaucher's disease is associated with  
A) Abnormal protein metabolism  
B) Abnormal carbohydrate metabolism  
C) Abnormal fat metabolism  
D) Vitamin deficiency *Ans. A*
43. Eunuchoidism is due to the lack of  
A) Secretin  
B) GH  
C) Pancreozymine  
D) Sex corticoid hormone *Ans. D*
44. Food can be preserved at freezing temperature whereby  
A) Making the enzymes of microbes inactive  
B) Making the enzymes inactive  
C) Causing modulation to enzymes  
D) Both A and B *Ans. A*
45. Sulpha drugs generally act as  
A) Competitive inhibitors  
B) Non competitive inhibitors  
C) Allosteric inhibitors  
D) Modulators *Ans. A*
46. In heavy smokers, the alveoli of the lungs are enlarged and damaged, which reduces the surface area for the exchange of respiratory gases. This condition is called  
A) Asthma  
B) Emphysema  
C) Anosmia  
D) Bronchitis *Ans. B*
47. In which of these would you find white fibrous tissue in abundance?  
A) Cartilage  
B) Ligament  
C) Bone  
D) Tendon *Ans. D*
48. Radioisotope used in PET scanning?  
A)  $P^{32}$   
B)  $C^{11}$   
C)  $Ca^{45}$   
D)  $I^{131}$  *Ans. B*
49. The foetus developing in the uterus of the mother is considered as  
A) Heterograft  
B) Allograft  
C) Autograft  
D) Xenograft *Ans. B*
50. When a lost limb of a Newt is regenerated, it is  
A) Epimorphosis  
B) Morphollaxis  
C) Allometric growth  
D) None of these *Ans. A*
51. Cerebrospinal fluid flows from lateral ventricle into the third ventricle through  
A) Foramen magnum  
B) Foramen monro  
C) Foramen panizza  
D) Foramen ovale *Ans. B*

52. If loop of Henle were absent from an individual's nephron, which one of the following is to be expected?  
A) The urine will be more dilute  
B) The urine will be more concentrated  
C) There will be no urine formation  
D) There will hardly be any change in the quality and quantity of urine formed  
*Ans. A*
53. Hassall's corpuscles are found in  
A) Pineal gland  
B) Kidney  
C) Liver  
D) Thymus gland  
*Ans. D*
54. Chordates first came in which of the following period/era?  
A) Precambrian  
B) Ordovician  
C) Silurian  
D) None of these  
*Ans. B*
55. According to the World Health Organisation (WHO), the diseases which are designated as "Neglected Tropical Diseases" (NTP)  
i. Rabies  
ii. Malaria  
iii. Snake bite  
iv. Tuberculosis  
A) i & ii  
B) ii & iv  
C) i & iii  
D) iii & iv  
*Ans. C*
56. Endoscopy, a technique used to explore the stomach or other inner parts of the body is based on the phenomenon of  
A) Total internal reflection  
B) Interference  
C) Diffraction  
D) Polarization  
*Ans. A*
57. The sequencing of the entire genome (the totality of all genes) of an organism was completed in 1996. The organism was:  
A) Yeast  
B) Albino mouse  
C) Human being  
D) Plasmodium vivax  
*Ans. D*
58. Hoverflies, of the family Syrphidae, which are striped black and yellow to resemble stinging bees and wasp is an example of  
A) Aposematic coloration  
B) Polymorphism  
C) Batesian mimicry  
D) Camouflage  
*Ans. C*
59. A short length of double stranded DNA molecule contains 120 adenine and 120 cytosine bases. The total number of nucleotides in this DNA fragments is  
A) 120  
B) 480  
C) 240  
D) 60  
*Ans. B*
60. pH of  $10^{-8}$  M HCl  
A) 7.1  
B) 8.1  
C) 5.9  
D) 6.9  
*Ans. D*

61. In a closed vessel of 2L capacity at equilibrium, 40% of  $\text{PCl}_5$  dissociated into  $\text{PCl}_3$  and  $\text{Cl}_2$ , what is the value of equilibrium constant? ( 2mols of  $\text{PCl}_5$  was heated)  
A) 0.267                      B) 0.8                      C) 1.2                      D) 0.96
62. SWISS-PORT is related to  
A) Portable data                      B) Swiss Bank data  
C) Sequence data bank                      D) Swiss sequence data
63. Secondary binding is an association between  
A) Inner acrosomal membrane and ZP2  
B) Inner acrosomal membrane and ZP3  
C) Galactosyl transferase1 and ZP3  
D) Outer sperm plasma membrane and ZP2
64. Mass spectrometry does not differentiate between  
A) Tautomers                      B) Functional isomers  
C) Constitutional isomers                      D) Optical isomers
65. Which of the following is not involved in siRNA gene silencing pathway?  
A) Binding of a stable protein heterodimer to the double stranded RNA  
B) Involves the assembly of guide strand to siRISC and not passenger strand  
C) Export of processed siRNA to the cytoplasm by Exportin-5 for maturation by DCR1  
D) RNA hydrolysis by Argonaute protein in siRISC
66. The subunits at the active center of RNA Polymerase holoenzymes in *E.coli* is made up of  
A)  $\alpha_2$  subunits                      B)  $\beta$  and  $\beta'$  subunits  
C)  $\beta$  and  $\sigma$  subunits                      D)  $\alpha$ -CTD subunits
67. Sneak synthesis is  
A) Basal level enzyme production  
B) Protein production during amino acid starvation  
C) Glucogenesis  
D) None of these
68. Which among the following is a pheromone gland present in Honey bee?  
A) Nasonov's gland                      B) Dufour's gland  
C) Pavan's gland                      D) Poison gland
69. Genes of different species but possessing a clear sequence and functional relationship to each other are called  
A) Paralogs                      B) Comparative genes  
C) Synteny                      D) Orthologs

Ans. A

Ans. C

Ans. A

Ans.D

Ans. C

Ans. B

Ans. A

Ans. A

Ans. D

70. Name the compound released from plant cells, which is detected by *Agrobacterium tumifaciens* that enables *vir* gene expression on Ti plasmid  
A) Indolacetate B) Nopaline  
C) Zeatin D) Acetosyringone **Ans. D**
71. Which of the following is the function of polynucleotide kinase, the enzyme used in DNA recombinant technology?  
A) Add a phosphate to the 3'-OH end of the polynucleotide to label it or permit ligation  
B) Add phosphate tails to the 3'-OH ends of a linear duplex  
C) Add phosphate tails to the 5'-OH ends of a linear duplex  
D) None of the above **Ans. D**
72. Number of overturn of duplex axis of a double stranded DNA around the supercoiling axis is called  
A) Twist B) Writh  
C) Linking number D) Superhelical density **Ans. B**
73. The PCR used to generate single stranded copies of a DNA sequencing or can be used as probes or even as primers  
A) Asymmetric PCR B) Inverse PCR  
C) RT PCR D) Real Time PCR **Ans. A**
74. Eukaryotic DNA polymerase  $\gamma$  is involved in  
A) DNA repair  
B) Primer synthesis in the leading strand  
C) Mitochondrial DNA replication  
D) Elongation of leading strand **Ans. C**
75. Which of the following is the cleavage point of chymotrypsin of bovine pancreas?  
A) Phe, Trp, Tyr (C) B) Phe, Trp, Tyr (N)  
C) Asp, Glu (C) D) Asp, Glu (N) **Ans. A**
76. The autoimmune disease mediated by stimulating or blocking auto-antibodies  
A) Grave's disease B) Insulin dependant diabetes mellitus  
C) Good Pasture's syndrome D) Hashimoto's Thyroiditis **Ans. A**
77. Glucose transporter expressed in muscles  
A) GLUT 2 B) GLUT 4 C) GLUT 5 D) GLUT 6 **Ans. B**
78. The potent and specific inhibitor of  $\text{Na}^+ \text{K}^+$  ATPase  
A) Ouabain B) Thapsigargin  
C) Vanadate D) Vinblastine **Ans. A**
79. ABC transporters are  
A) ATP dependant transporters  
B) Responsible for antitumor drug resistance  
C) Present in plasma membrane  
D) All of the above **Ans.**

80. Converting toxin to toxoid  
 A) Makes the toxin more immunogenic  
 B) Enhances binding with antitoxin  
 C) Reduces the pharmacologic activity of the toxin  
 D) Induces only immunity *Ans. A*
81. Normal human blood has the lowest percentage of  
 A) Monocyte  
 B) Eosinophil  
 C) Basophil  
 D) Neutrophil *Ans. C*
82.  $\alpha$ -amanitin inhibits  
 A) Only RNA polymerase I  
 B) Only RNA polymerase II  
 C) Only RNA polymerase III  
 D) All RNA polymerase *Ans. B*
83. The proteins which play substantial role in linking together sister chromatids immediately after replication and keeping them together as the chromosome contents to metaphase  
 A) SMC proteins  
 B) Cohesin  
 C) Histones  
 D) Condensins *Ans. B*
84. Rieske – center, the iron-sulfur protein center, is found in which of the following electro carrying complex of respiratory chain?  
 A) Complex I  
 B) Complex II  
 C) Complex III  
 D) Complex IV *C*
85. Effective population size ( $N_E$ ), density of population is given by N in ecology  
 A)  $N_E = \frac{N_m N_f \times 4}{N_m + N_f}$   
 B)  $N_E = \frac{N_m N_f \times 2}{N_m + N_f}$   
 C)  $N_E = \frac{N_m N_f}{N_m + N_f \times 4}$   
 D)  $N_E = \frac{N_m N_f}{N_m + N_f \times 2}$  *Ans. A*
86. Ultraviolet light exposure in DNA causes  
 A) Pyrimidine dimer  
 B) Single strand break  
 C) Base deletions  
 D) Purine dimer *Ans. A*
87. The chemical transmitter between sympathetic post ganglionic fibers and effector organ is  
 A) Acetyl choline  
 B) Adrenaline  
 C) Epinephrine  
 D) Nor-epinephrine *Ans. D*

88. Proteins that connect gap junction are  
A) Connexins B) Aquaporin C) Selectin D) Separin  
*Ans. A*
89. Acrosome of spermatids is formed by  
A) Nucleolus B) Centriole  
C) Mitochondria D) Golgi body  
*Ans. D*
90. What are MCM proteins?  
A) Kinase B) Helicase  
C) Inhibitor molecules D) Nucleases  
*Ans. B*
91. Bony fishes are  
A) Ammonitelic B) Ureotelic  
C) Urecotelic D) Both A & C  
*Ans. A*
92. Which of the following activates the enzymes HMG CoA reductase and favours cholesterol synthesis?  
A) Glucagon B) Cholesterol  
C) ACAT D) Insulin  
*Ans. D*
93. Lesch-Nyhan syndrome is due to genetic lack of activity of  
A) Adenosinephosphoribosyl transferase  
B) Adenosine deaminase  
C) Hypoxanthine guanine phosphoribosyl transferase  
D) Thymidylate synthase  
*Ans. C*
94. Which of the following is called an uncoupling protein?  
A) Thermogenin B) Leptin C) Ghrelin D) Insulin  
*Ans. A*
95. Which one of the following is not a synthetic organic insecticide?  
A) Dieldrin B) Toxaphene C) BHC D) Quassia  
*Ans. D*
96. Which of the following set includes bacterial disease?  
A) Malaria, mumps, poliomyelitis  
B) Diphtheria, leprosy, plague  
C) Cholera, typhoid, mumps  
D) Tetanus, tuberculosis, measles  
*Ans. B*
97. Life cycle of plasmodium in human blood is called  
A) Syngamy B) Sporogony  
C) Erythrocytic schizogony D) None of these  
*Ans. C*
98. Stuart Power factor of blood clotting is  
A) Factor III B) Factor IX  
C) Factor X D) Factor XIII  
*Ans. C*



109. Type of dentition in grazing mammals  
A) Lophodont B) Secodont  
C) Bunodont D) Selenodont **Ans. D**
110. ABO blood group is determined by allele located on  
A) Chromosome No 12 B) Chromosome No 6  
C) Chromosome No 9 D) Chromosome No 3 **Ans. C**
111. In smooth muscles,  $\text{Ca}^{2+}$  combines with a protein in the cytoplasm called calmodulin. Each calmodulin can bind with  
A)  $1 \text{ Ca}^{2+}$  B)  $2 \text{ Ca}^{2+}$  C)  $3 \text{ Ca}^{2+}$  D)  $4 \text{ Ca}^{2+}$   
**Ans. D**
112. Accumulated lactic acid from muscles is carried to the liver via blood and converted to glucose by a process  
A) Kerb cycle B) Cori cycle  
C) Glycosylate cycle D) None of these **Ans. B**
113. The anticoagulant found in uterine wall which prevent clotting of menstrual blood inside the uterus  
A) Warfarin B) Heparin  
C) Citrate salt D) Plasmin **Ans. D**
114. Which reptilian species was included in the latest "Red List" of threatened species?  
A) Cecaelian B) *Rana cartipus*  
C) *Ophiophagus Hannah* D) *Echis carinatus*  
**Ans. C**
115. Number of linkage group in an organism is always equal to  
A) Number of X chromosome B) Number of Y chromosome  
C) Number of barr bodies D) Haploid number of chromosomes  
**Ans. D**
116. Discoblastula is the chareteristic of  
A) Fishes B) Reptiles  
C) Birds D) All of these  
**Ans. D**
117. SA Node of pacemaker is kept on the  
A) Right auricle B) Left auricle  
C) Right ventricle D) Left ventricle **Ans. A**
118. Cowper's gland is associated with  
A) Circulatory system B) Reproductive system  
C) Nervous system D) Muscular system **Ans. B**
119. Hemoglobin is formed of  
A)  $2 \alpha$  and  $2 \beta$  subunits B)  $3 \alpha$  and  $1 \beta$  subunits  
C)  $1 \alpha$  and  $3 \beta$  subunits D) Only  $\alpha$  subunits  
**Ans. A**
120. Duct of Rivinus is in  
A) Parotid gland B) Sub-maxilliary gland  
C) Sub-lingual gland D) None of these  
**Ans. C**