SECTION-A

Question	Answer
1. During a total solar ----------the same location	1
2. A cupboard is filled ---------- pairs of balls?	4
3. Restriction endonuclease cleaves ---------- with this enzyme?	1
4. In Δ ABC, angle A is -------- angle C is	2
5. Living beings get energy ---------- reactants is	3
6. What is the angle θ in ---------- shown below?	1
7. On exposure to desiccation, which ---------- water loss?	4
8. See the following mathematical manipulations.	3
9. Inner planets of the solar system ---------- for this is that	1
10. The variation of solubilities of two ---------- statements is true?	3
11. The number of craters observed due to meteoritic---------- moon because	4
12. Which of the following ---------- atmosphere is true?	1
13. When a magnet is made to fall free in air---------- decreases, because	2
14. For an elastic material, strain is proportional ---------- in that material?	3
15. The conductance of a potassium chloride ---------- galvanometer, is	2
16. Magnesium powder, placed ---------- temperature is approximately	3
17. A bell is rung before ---------- most likely to happen?	2
18. An overweight person runs 4 km ---------- energy expenditure would be	2
19. What is the half-life of the ---------- shown below?	1
20. A solid cube of side Lfloats---------- submerge one cube completely?	1
SECTION-B	
21. A specialist species has a	2
22. Batrachochytrium dendrobatidis, ---------- decline of populations of	2
23. Which of the following is NOT ---------- successional plants?	4
24. Which of the following features is NOT ---------- herbicide?	4
25. Aquatic primary production was ---------- is given as	4

26. Wetlands are conserved ---------- effort called as	4
27. The first living beings ---------- anaerobic because	1
28. To keep them in a totipotent state ---------- supplemented with	2
29. The blastopore regon of amphibian ---------- known as	2
30. The Hutchinsonian concept ---------- niche is based on	2
31. Which of the following ---------- sequence-based phylogeny?	2
32. Which of the following is NOT a ---------- nitrate reductase?	3
33. The peacock's tail is an example of	3
34. Which of the ---------- Drosophila embryo?	2
35. Which of the following acts as ------- and triterpenes?	1
36. Which of the floral ---------- agamous (ag) mutants?	3
37. Which of the following waves ---------- frog ECG?	2
38. Which of the following set of cell ---------- signaling pathway?	1
39. Chloroplast distribution in a ---------- light, the chloroplasts	1
40. During development ---------- are involved in	1
41. The atmosphere in a sealed ---------- contains	2
42. In a normal human eye, ----------provided by the	2
43. Measurement and mapping ---------- is done using	2
44. In this flow diagram name the chemicals A, B, C and D in proper sequence	4
45. A plant of the genotype AaBb is ---------- genotype aabb?	2
46. The base analog 2-aminopurine ---------- is	2
47. One of the methods for finding ---------- regulated genes is	2
48. What kind of aneuploid gametes ---------- number of chromosomes	3
49. Horse shoe ---------- group	2
50. On the molar scale ---------- bio-molecule?	3
51. Which of the following groups of ---------- in India	2
52. The rattans and canes that we use in ---------- belong to	2
53. While replicating DNA, the rate of mis-incorporation ---------- mainly due to	2
54. A sample counted for one minute shows ---------- 1% probable error?	3
55. Michaelis and Menten derived their equation ---------- assumption?	1

56. A single-strand nick in the parental ---------- calamity requires	4
57. Ethylene binding to its receptor, does NOT lead to	3
58. In which form of DNA, the number of base pairs per helical turn is 10.5?	2
59. In transverse sections of a young stem, if vallecular canals and carinal canals are present, then the plant belongs to	4
60. In contrast with plant cells, the most distinctive feature of cell division in animal cells is	4
61. The presence of Salmonella in tap water is indicative of contamination with	2
62. Graft rejection does not involve	1
63. Reverse transcriptase has both ribonuclease and polymerase activities. Ribonuclease activity is required for	2
64. Indirect immunofluorescence involves fluorescently labeled	1
65. The membrane lipid molecules assemble spontaneously into bilayers when placed in water and form a closed spherical structure known as	3
66. α-amanitin inhibits	2
67. Most common type of phospholipids in the cell membrane of nerve cells is	4
68. In gene regulation, Open Reading Frame (ORF) implies	3
69. Amino acid selenocysteine (Sec) is incorporated into polypeptide chain during translation by	4
70. Toxic shock is caused by	2
SECTION-C	
71. Equilibrium constant (K) of noncovalent ---------- change is	2
72. If Vander Waals interaction ---------- relation,	4
73. The pH of blood of a healthy person---------- in the blood is	2
74. The hydrolysis of pyrophosphate to ---------- greater than K_m?	3
75. Denaturation profiles of DNA ---------- arise because	3
76. Biosynthesis of tyrosine is detailed below	1
77. A nerve impulse or action potential is generated---------- directions because	2
78. The erythrocyte membrane cytoskeleton ---------- The patient carries	3
79. In human, protein coding genes are mainly organized as “exons” ---------- which are	4
80. Maturation-promoting factor (MPF) ---------- reformation because	4

81. Many cancers carry mutant ---------- normal p53 genes could	1
82. A fixed smear of a bacterial culture is subjected to the following -------- appeared red	2
83. In an in vitro experiment using ---------- correct observations?	2
84. Synthesis of normal hemoglobin ---------- Which of the following combinations is correct?	1
85. Pre-mRNAs are rapidly bound by snRNPs ---------- Which of the following combinations is correct?	1
86. For continuation of protein synthesis ---------- Which of the following sets is correct?	1
87. Insulin and other growth factors stimulate ---------- Which of the following sets is correct?	2
88. Bacteriophage λ has two modes in its ---------- The correct statements are	4
89. Survival of intracellular pathogens depends ---------- Which of the following observations is true?	2
90. The bacterial flagellar motor is a multi-protein complex ---------- These could have	3
91. A bacterial response regulator turns on gene A ---------- This is most likely due to	3
92. Intracellular transport and cytoskeletal ---------- HeLa cells?	3
93. You are given a group of four mice. ---------- It was	3
94. Tumor cells were isolated from a breast cancer patient. ---------- would be minimum?	2
95. When the prospective neurons from an early gastrula ---------- Which of the conclusions drawn above are correct?	2
96. AP1 (APETLA 1) is one of the ---------- suggest that AP1 is	3
97. In case of morphallactic regeneration:	1
98. The decision to become either a trophoblast ---------- molecules, 1-4, sequentially	2
99. With respect to the extra embryonic ---------- Which of the above statements are correct?	1
100. The figure above represents a late ---------- Which of the above statements are true?	1
101. Following are some of the statements regarding the effect of CO2----------Which one of the following combination of above statements is correct?	3
102. The quantum yield of photosynthetic ---------- Which one of the following combination of above statements is correct?	2
103. Following are some statements regarding plant growth hormones ---------- Which one of the following combination of above statements is correct?	1

104. Following are some statements for synthesis of jasmonic acid in plants ------- Which one of the following combination of above statements is correct?	4
105. Following are some statements about low temperature stress in plants ---- Which one of the following combination of above statements is correct?	2
106. An isolated carotid sinus ---------- Which one of the following is correct?	1
107. For a normal heart, ---------- equations is correct?	1
108. During the Spanish conquest ---------- Which of the following combinations is logically correct?	1
109. A monkey undergoes cerebellectomy. ---------- Which one of the following is correct?	2
110. A 1 meter tall object was placed 10 meter in front of a normal eye. ---------- lens and retina = 1.7 cms).	2
111. The graph represents relative plasma concentration of hormones (A and B) during reproductive cycle in a normal female. Which of the following combinations is correct?	3
112. The following figure depicts the relationship between a genetic map for four genes (A, B, C and D) and their corresponding physical map: ---------Which statements are correct?	2
113. Consider the following crosses involving grey (wild-type) and yellow body colour true-breeding Drosophila: ----- outcome is expectd?	3
114. The ABO blood type in human is under the control of autosomal ---------- O blood group?	3
115. In E.coli four Hfr strains donate the following genetic markers in the order shown below: ----- four Hfr strains?	2
116. The following is a schematic representation of region ---------- polytene chromosomes?	3
117. Assuming a 1 : 1 sex ratio, what is ---------- two daughters and one son?	1
118. Chlorophyll pigment composition and carbohydrate ---------- for the given groups.	1
119. Identify the synapomorphies in the following cladogram:	2
120. From among the five animals listed below, match the two attributes – amniotic egg and endothermy, with the correct animal(s):	4
121. During afield study, three insects with the following characteristics were observed: ---- They can be identified to their respective orders as:	1
122. Several distinct time periods and different routes might explain the entrance of marsupials into	4

Australia. ----- Which of the following is the correct combination?	
123. Which of the following is NOT true for a critically endangered species?	1
124. Ecological compression differs from character displacement in that it operates on a	1
125. Autotrophs in the aquatic ecosystem, unlike their counterparts in the terrestrial ecosystem,	4
126. Which of the following graphs illustrates the current consensus on the role of disturbance on the species richness of a community?	4
127. In the global nitrogen cycle, the following microbial organisms are involved in three important process – denitrification, nitrification and nitrogen fixation. ---- Which of the following is the correctly matched pair of process and its causative species?	2
128. Suppose you discovered a new species about which you know only two facts: it is small-sized (<10 cm) and short-lived (<20d). Which of the following reproductive strategies is most likely to be true for this species?	3
129. The genetic relatedness (r) of an individual to his nephew is 0.25. The alleles that cause uncles to care for nephews will spread, according to Hamilton's Rule, only if the fitness benefit is:	4
130. The frequencies of two alleles p and q for a gene locus in a population at Hardy-Weinberg equilibrium are 0.3 and 0.7, respectively. After a few generations of inbreeding, the heterozygote frequency was found to be 0.28. The inbreeding coefficient in this case is:	3
131. Which of the following behavioural changes are expected in a rat when its nucleus accumbens is experimentally ablated?	4
132. Number of trials required for rats to learn a task when they were exposed to various conditions were as follows:	4
133. Assume a male sparrow (species X) is hatched and reared in isolation and allowed --------- species X show?	4
134. Enzymes are nowadays used extensively in bioprocessing industries. ---------- Identify Enzymes 1 and 2:	3
135. In order to prevent tetanus in neonates, one of the following treatments can be adopted. ------- The correct combination is:	4
136. Genomic DNA of transgenic plants (P1, P2 and P3) . ---------- Based on the above, which of the following interpretations is correct:	3
137. The following are statements about molecular markers in the context of plant breeding. -------	4

Which of the above statements are TRUE?	
138. In 'TaqMan' assay for detection of base substitutions (DNA variant), probes (oligonucleotides) with fluorescent dyes	2
139. Stem cell therapies are being used in regenerative medicine like forming new adult bone,	1
140. Cre/loxP system is used by phage PI to remove terminally redundant	3
141. Figures A and B respectively represent the dideoxy sequencing gels obtained for	3
142. T cell proliferation in vivo is to be analyzed. The cells are labeled with CFSE (a fluorescent probe)	4
143. The most important property of any microscope is its power of resolution, which is numerically equivalent to D,	1
144. In an animal experiment; (i) Electrical stimulation of an area in the brain (A) increased a function (F) which was prevented by systemic injection of andrenergic antagonistic, prazosin.	2
145. In the following statement taken from a research paper, what does p in the parenthesis stand for	4