

**SECTION -A**

1. Correct arrangement from smallest to largest is

1. *Nucleus < Cell < Tissue < Organ < System < Organism*
2. Cell < Nucleus < Tissue < Organ < System < Organism
3. Nucleus < Cell < Tissue < System < Organ < Organism
4. Organism < System < Organ < Tissue < Cell < Nucleus

2. If complete atmospheric gases are removed than what would be effect on global temperature of earth

1. *It will fall*
2. It will increase
3. No effect
4. Unstable temperature

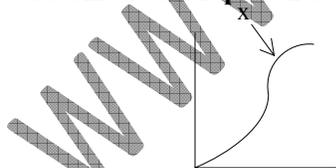
3. Which of the following are not utilized in photosynthesis?

1. *CO<sub>2</sub>, N<sub>2</sub>, Chlorophyll, Sunlight*
2. CO<sub>2</sub>, Chlorophyll, Sunlight
3. CO<sub>2</sub>, Chlorophyll, Sunlight, NADP
4. CO<sub>2</sub>, Chlorophyll, Sunlight, Carbohydrates

4. There are two Ecosystems, A with high species diversity and B with low species diversity. Which statement is not correct for above ecosystems?

1. Ecosystem A would be more stable
2. *Ecosystem B would be more stable*
3. More extinction rate at ecosystem A
4. There will be more competition in ecosystem A

5. The following graph shows population growth curve for rabbit in certain ecosystem. The point x on graph after which population become stable represents

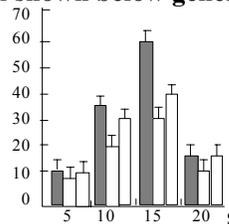


1. *Carrying capacity*
2. More mortality
3. Scarcity of food
4. Natural selection

6. Which of the following is not a function of blood?

1. Provide immunity
2. *Production of hormones like insulin*
3. Repair of damaged parts
4. Gaseous transport

7. The graph shown below generally represents



1. Mean and Standard error
2. *Mean and Standard deviation*
3. Mode and standard error
4. Mean and Mode

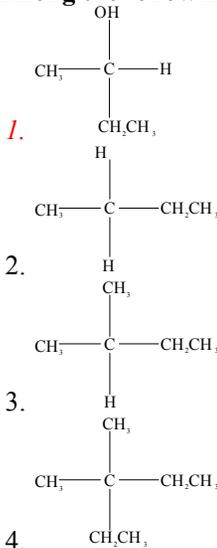
8. Among the following which is biopolymer

1. *Nucleic acid*
2. Polystyrene
3. Latex
4. Nylon

9. Among the following which will be basic in nature

1. Lemon juice
2. *Baking soda in water*
3. Ammonium chloride in water
4. Vinegar in water

10. Among the following which is optically active



11. Which of the following is radioactive substance?

1. BeCl<sub>2</sub>
2. Na<sub>2</sub>SO<sub>3</sub>
3. *Th(SO<sub>4</sub>)<sub>2</sub>*
4. MgSO<sub>4</sub>

12. Some times water droplet is seen falling from automobile combustion exhaust pipe. It indicates

1. *Efficient combustion of fuel*
2. Problem in combustion filters
3. Incomplete combustion of fuel
4. High humidity in environment

13. Which of the following is most electropositive atom?

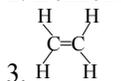
1. *Cs*
2. Fr
3. Na
4. K

14. Which of the following can not be used as abrasive?

1. Diamond
2. Calcite
3. *Granite*
4. Topaz

15. Among the following carbon in sp hybridization is present in

1. C<sub>3</sub>H<sub>8</sub>
2. Benzene



3.  $\begin{array}{c}
 \text{H} \quad \text{H} \quad \text{H} \\
 \diagdown \quad \diagup \quad \diagdown \\
 \text{C} = \text{C} = \text{C} \\
 \diagup \quad \diagdown \quad \diagup \\
 \text{H} \quad \text{H} \quad \text{H}
 \end{array}$
4.  $\begin{array}{c}
 \text{H} \\
 | \\
 \text{C} = \text{C} \\
 | \\
 \text{H}
 \end{array}$

16. Which is correct about spectra for H atom and He<sup>+</sup> ion

1. Similar
2. Similar but He<sup>+</sup> ion having one-fourth frequency
3. *Similar but He<sup>+</sup> ion having four times more frequency*
4. Similar but He<sup>+</sup> ion having four times more frequency

17. Mean half life of a radioisotope is  $\left(\frac{1}{0.693}\right)$  second. The time required for decay of 10 mg radioactive substance into 2.5 mg will be

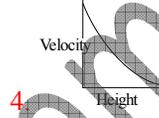
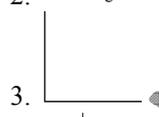
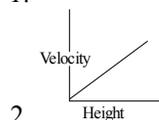
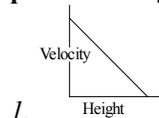
1.  $\left(\frac{1}{0.693}\right)$  sec
2.  $\left(\frac{2}{0.693}\right)$  sec
3. 1 sec
4. *2 sec*

18. Path of a comet entering into our solar system cannot be

1. Circle

2. Parabola
3. Eclipse
4. *Straight line*

19. Correct representation of a graph for a pebble falling from a certain height would be



20. Various rectangles can be drawn in circle of radius 'r'. The rectangle with maximum area will be

1. *2r<sup>2</sup>*
2. 2r<sup>2</sup>
3.  $\sqrt{2}r^2$
4. 2r

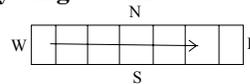
21. A metallic solid sphere is fully charged. The charge on sphere will be

1. *Only at surface*
2. Concentrated at centre
3. Evenly distributed
4. Unevenly distributed

22. Why air is cooler at high altitudes such as mountain than at lowlands

1. *Low density of air at high altitudes*
2. Heat of air is due to reflected radiation from earth
3. Higher pressure at high altitudes
4. Lesser oxygen

23. The undisturbed layers of sedimentary rocks are deposited down from west to east as shown in figure. The order of layers from oldest to youngest will be



1. North to South
2. *East to West*
3. West to East
4. South to North

24. An object is placed 100 cm from a lens of focal length 50 cm. The image is formed at 'x' and magnification is 'm'. The value of x and m will be

- 1. 100, 100
- 2. 50, 100
- 3. 100, 50
- 4. 100, 1

25. Sum of two binary numbers 1101 and 1011 will be

- 1. 10111
- 2. 11001
- 3. 11111
- 4. 10001

26. Time required for downloading a file of 2.4 Mb from a broadband connection having speed of 256 kbps will be

- 1. Lesser than 5 minutes
- 2. 30 minutes
- 3. 3 minutes
- 4. Lesser than 30 seconds

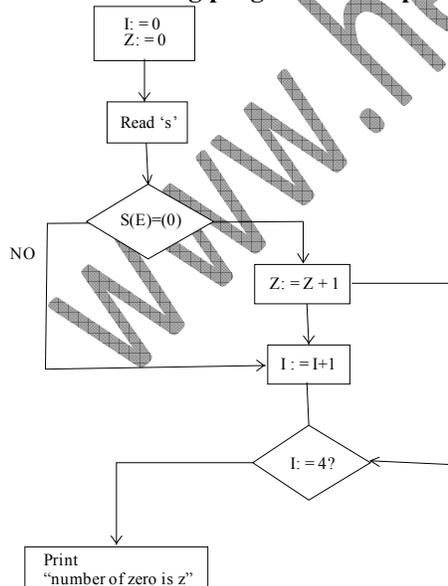
27. The program first to run on starting computer is

- 1. Operating system
- 2. Checking Keyboard
- 3. Checking power on
- 4. Bios booting

28. The function of heat sink in PC is

- 1. To heat up CPU
- 2. To cool CPU
- 3. To cool memory
- 4. To dissipate heat from RAM

29. A string 's' with value 2010 B 80 C is entered in following program the output will be



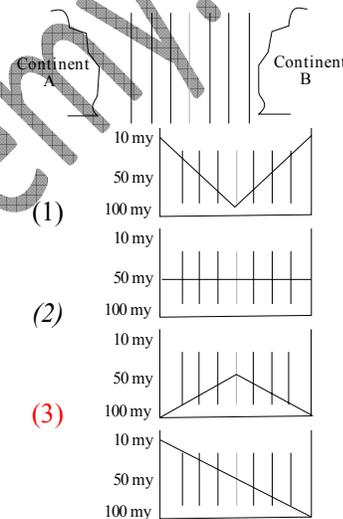
- 1. 4
- 2. 1

- 3. 3
- 4. 0

30. A plane takes a flight 50° down to south from position 80°E and 23°N. Its destination will be

- 1. 80° E and 27° S
- 2. 80°E and 50° N
- 3. 80° E and 96° S
- 4. 80° E and 96° N

31. The figures shows different rock of oceanic floor between two continents and MOR stands for mid oceanic ridge. The correct representation of graph for age of rocks will be



32. Ocean can have many dissolved substances in it. Solubility of substances in sea depends primarily on

- 1. Temperature
- 2. Pressure
- 3. Temperature and Pressure
- 4. Independent of Temperature and Pressure

33. A 10 gram ball is weighed at Ireland, Madrid, Delhi and Chennai (l, m, d, c respectively). The order of weight from maximum to lowest will be

- 1. l < m < d < c
- 2. l > m > d > c
- 3. l = m > d = c
- 4. l < m < d = c

34. Sin<sup>-1</sup> x Cos<sup>-1</sup> x, for limit of x ranging from 0 to 1

- 1. 1/2
- 2. 1/4

3.3/4  
4.1/8

35. Let  $\{x_n\}$  be a sequence of non-zero real numbers. then

1. If  $x_n \rightarrow a$ , then  $a = \sup x_n$ .
2. If  $x_{n+1}/n < V n$ , then  $x_n \rightarrow 0$
3. If  $x_n < nV n$ , then  $\{x_n\}$  diverges
4. If  $n x_n > V n$ , then  $\{x_n\}$  diverges

36. A certain point is at equi-distance from coordinates  $(-1, -1)$  and  $(0, 4)$ . The point is located at

1.  $(0, 0)$
2.  $(0, 2)$
3.  $(2, 0)$
4.  $(-1, +1)$

37. The path of ant travelling on minute arm of clock will be

1. Circle
2. Spiral
3. Parabolic
4. Straight line

38. In herd of cattle there are 4 cows, 3 bulls and 1 calf. What is probability of correct parents of calf if a pair is randomly drawn from herd.

1.  $1/7$
2.  $2/7$
3.  $2/5$
4.  $1/12$

39. The correct statement for  $0 \leq x \leq 1$

1.  $-1 < 0 < 0.75$
2.  $-1 \leq 0 \leq 1$
3.  $1 \leq 0 \leq 1$
4.  $1 < 0 < 1$

40. Figure drawn from equation  $y^2 = ax$  will be

1. parabola
2. circle
3. sphere
4. eclipse

## SECTION -B

41. Vinblastin has been extensively used for treating cancer. This is an example of

1. Radiotherapy
2. Chemotherapy
3. Heat therapy

4. Surgery

42. When tryptophan in excess most of times RNA polymerase dismount after transcription of first 150 nt in trp operon. This is termed as

1. Antitermination
2. Attenuation
3. Catabolite repression
4. Feed back inhibition

43. Under which phase of bacterial growth bacteria increases in size but do not divide

1. Lag
2. Log
3. Stationary phase
4. Death phase

44. Which of the following can be regarded as programmed cell death?

1. Death induced by toxin
2. Death by inflammation
3. Death of cell during normal development
4. Death due Phagocytosis

45. Which of the following is necessary for transport of m-RNA from nucleus

1. RNA editing
2. 5' - Capping
3. 3' - Polyadenylation
4. Secondary structure

46. Among the following which is not a function of hydrogen peroxide release during plant stress response

1. Crosslinking glycans in cell wall
2. Lignin deposition
3. Production of ethylene and salicylic acid
4. Production of jasmonic acid

47. Promoters for RNA polymerase III are located at

1. +1 to +10
2. -35 to -10
3. Within transcribed sequence
4. downstream after termination

48. Transport of ions across membrane depends on

1. Concentration gradient
2. Membrane potential
3. Concentration gradient and membrane potential both
4. Independent of both

49. Among the following which amino acid does not absorb wavelength of 250-300 nm

1. Cystine
2. Phenyl alanine
3. Tryptophan
4. Histidine

50. The efficient conversion of Fructose to Fructose-6 Phosphate occurs in

1. Liver
2. Muscles
3. Adipose
4. Intestine

51. Which statement is not true about E.coli DNA ligase

1. Do not link single stranded DNA
2. Links double stranded blunt ends
3. NAD is source of AMP as cofactor
4. Requires ATP as energy source

52. Which statement is correct regarding edge effect

1. They are poor in diversity
2. They are rich in diversity
3. Low competition
4. High predation pressure

53. In Sickle cell anemia the RBC are sickle shaped due to

1. Change in shape of hemoglobin before binding of oxygen
2. Change in shape of hemoglobin after binding with oxygen
3. Loss of spectrin cytoskeleton protein
4. Plasma membrane of RBC is sickle shaped

54. If organism is at very high risk of extinction according to IUCN, then it is kept in category of

1. Critically endangered
2. Endangered
3. Rare
4. Vulnerable

55. Activity of single channel on neuron can be studied using

1. Patch clamp technique
2. Single neuron recording
3. ECG
4. EFG

56. Which of the following is not an extracellular matrix protein

1. Albumin
2. Lamin
3. Collagen
4. Fibronectin

57. Among the following highest assimilation efficiency is observed in

1. Herbivores
2. Carnivores
3. Microbivores
4. Omnivores

58. To focus image the accommodation in lens of eye is mainly at

1. Due to change in surface of front of lens
2. Due to change in surface of back of lens

3. Due to sphincter muscles which vary the curvature the both surface of lens

4. Due to type of ciliary muscles and fibres

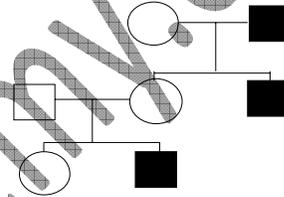
59. Cell with rigid lignified cell wall and dead protoplasm is

1. Collenchyma
2. Sclerenchyma
3. Chlorenchyma
4. Companion cells

60. Which of the following is not a Co-dominant marker

1. RAPD
2. RFLP
3. SNP
4. SMPLs

61. The following pedigree represent the inheritance of a rare disorder.



Based on the above pedigree, what is the most likely mode of inheritance?

1. Autosomal recessive
2. X-linked recessive
3. Autosomal dominant
4. Y-linked

62. The best technique for analyzing total m-RNA

1. Northern analysis
2. Southern analysis
3. DNA hybridization
4. RNA in Situ Hybridization

63. Among the following which radioisotope is not a -emitter

1. C<sup>14</sup>
2. I<sup>125</sup>
3. p<sup>32</sup>
4. H<sup>3</sup>

64. In sandwich ELISA the molecule captured is

1. Antibody
2. Antigen
3. Enzyme
4. Antigen- Antibody complex

65. 'Taq' enzyme utilized in PCR is a

1. RNA polymerase
2. Reverse transcriptase
3. DNA polymerase
4. Ligase

66. Maximum diversity of reptiles was during

1. Cretaceous
2. Jurassic
3. Ordovician
4. Triassic

67. Among the following which is not an assumption of Hardy-Weinberg rule
1. *Small population size*
  2. Random mating
  3. No natural selection
  4. No mutation
68. Wings of insects and birds have become flat, large and stream lined. This is an example of
1. *Convergent evolution*
  2. Parallel evolution
  3. Divergent evolution
  4. Co-evolution
69. The correct expression of Hamilton rule for the evaluation of altruism is [C = the cost of a behavioral act to the act, b = the benefit of that act to a beneficiary, and r = the genetic relatedness between the actor and the beneficiary] where C is 0.5 and r = 0.5
1.  *$c < b.r$*
  2.  $C > r.b$
  3. C must be more than 0.5 and r lesser than 0.5
  4. Benefits must be more than genetic relationship
70. Phenetic classification is based on
1. *Over all similarity of characters and gaps between variations*
  2. Phylogenetic relationship
  3. Genetic relationship
  4. Anatomical and embryological characters
71. Among the following which group of animal do not belongs to deuterostomes
1. *Nematodes*
  2. Echinodermates
  3. Brachypoda
  4. Chordates
72. Which of the following molecule can be utilized for establishing early evolutionary process
1. *Ribosomal RNA*
  2. Mitochondrial DNA
  3. Chloroplast DNA
  4. Nuclear DNA
73. The family Diptero carpae occurs in
1. *Tropical rain forest*
  2. Temperature deciduous forests
  3. Tropical deciduous forest
  4. Semi-arid forest
74. Certain species of birds shows variation in beak size only when they are sympatric. This is example of
1. *Character displacement*
  2. Natural Selection
  3. Ecological variations
  4. Mutations
75. Maximum growth rate is observed in logistic equation when the organisms are at
1. N excess than K
  2.  *$K/2$*
  3.  $N = K$
  4. N is greater than K
76. Which of the following are abiotic factors?
1. Temperature, rainfall, pH, parasites
  2. *Temperature, rainfall, pH, soil*
  3. Temperature, rainfall, Pathogens
  4. Temperature, rainfall, pH, viruses
77. During the process of succession arrival of late successional stage depends on environment modified by earlier successional stage. The process is referred as
1. Co-evolution
  2. *Facilitation*
  3. Tolerance
  4. Inhibition
78. The ecosystem having longest energy transfer time is
1. *Tropical rain forest*
  2. Open Ocean
  3. Desert
  4. Temperate Deciduous forest
79. The term used for bubble like structure generated during early process of origin of life by Oparin is
1. *Protobionts*
  2. Probiotic
  3. Micelles
  4. Coacervates
80. Which gas was absent during pre-biotic environment
1.  $CO_2$
  2.  $CH_4$
  3.  *$O_2$*
  4.  $SO_2$
81. Toll like receptors are a type of pattern recognition receptor (PRR) and recognize molecules that are broadly shared by pathogens but distinguishable from host molecules, collectively referred to as pathogen-associated molecular patterns. They are
1. Present only in mouse
  2. Present on membrane of ER
  3. *Are transmembrane protein*
  4. Present on cytosolic face of plasma membrane
82. Function of CD4+ T-lymphocyte is
1. *Secretion of cytokines*
  2. Secretion of complement proteins
  3. Production of antibodies
  4. Destroys antigen

83. In regulative development, the prospective potency of cells
1. Equal to prospective fate
  2. *More than prospective fate*
  3. Lesser than prospective fate
  4. Not determined
84. For translation process besides eIF2, Met-t-RNA eukaryotic 80-S ribosome also requires
1. *GTP*
  2. ATP
  3. CTP
  4. UTP
85. T<sub>4</sub> bacteriophage after infecting E. coli generally hacks host machinery for transcription of its own genes. It is done by
1. Degrading host RNA Polymerase
  2. *Modifying host RNA polymerase*
  3. Synthesis of own RNA polymerase
  4. Degradation of host genome
86. Influenza virus enters host cell by
1. Cell fusion
  2. *Endocytosis*
  3. Exocytosis
  4. Transcytosis
87. The vector responsible for Japanese Encephalitis is
1. *Culex tritaeniorhynchus*
  2. *C. jenseni*
  3. *C. pipiens*
  4. *C. pusillus*
88. Which lipid is found exclusively on one face of membrane
1. Cholesterol
  2. *Phosphatidyl choline*
  3. Phosphatidyl Inositol
  4. Phosphatidylethanolamine
89. Chaperons (Hsp70) are absent in
1. Mitochondria
  2. Chloroplast
  3. Endoplasmic reticulum
  4. *Golgi bodies*
90. Prolamellar body are present in
1. *Endoplasm*
  2. Leucoplast
  3. Chloroplast
  4. Chromoplast
91. Uptake of mineral like zinc, magnesium and iron across membrane in plant is by
1. ABC transporter
  2. H<sup>+</sup> - co-transporter
  3. *ZIP transporter*
  4. ATP dependent transporter
92. During development homing of cell is mediated by
1. *Integrin*
  2. Laminin
  3. Cadherin
  4. Selectin
93. Which of the following vaccine will not pose any problems in immune-compromised person
1. Measles
  2. Mumps
  3. BCG
  4. *Pneumococcal*
94. Morphogenesis can be defined as
1. *Reinitiation of cell division in existing cells, followed by repatterning of those cells*
  2. Production of lost organ by division in remaining cell
  3. Production of complete organism by single cell
  4. Movement of organism toward stimulus
95. The grafting of the dorsal lip of the blastopore from an early Xenopus gastrula onto the ectopic ventral side of an early embryo will result in two complete embryos. This dorsal can be designated as
1. *Primary organizer*
  2. Cytoplasmic determinant
  3. Morphogen
  4. Primitive
96. Three classes of genes A, B and C regulate the development of flower in Arabidopsis. If a loss-of-function mutation occurs in the B-type genes, what will be the composition of the flower whorls?
1. sepals-petals-stamens-carpels
  2. sepals-sepals-stamens-carpels
  3. *sepals-sepals-carpels-carpels*
  4. petals-petals-stamens-stamens
97. Plants dissipate excess excitation energy as heat so as to protect from photo-oxidative damage. The mechanism is known as
1. Photo chemical quenching
  2. *Non-Photochemical quenching*
  3. Photoinhibition
  4. Mervin effect
98. Major transport of nitrogen in xylem sap is in form of
1. Glutamate
  2. *Allantoin*
  3. Glutamine
  4. Ammonia
99. According to the polymer trap hypothesis small sugars such as sucrose are converted to raffinose and other larger oligosaccharides is loaded in phloem. Major site of synthesis of raffinose is
1. Sieve tube
  2. Companion cells
  3. *Intermediary cells*
  4. Transfer cells

100. *E. coli* based Humulin is a

1. *Insulin*
2. Interferon
3. Growth factor
4. Disaccharide

101. *Agrobacterium tumefaciens* causes crown gall diseases in dicot plants. Which phytohormone genes are present in T-DNA

1. *Auxin and cytokinin*
2. Auxin only
3. Cytokinin only
4. Cytokinin and brassicosteroids

102. In formaldehyde the pure orbitals involved in bonding between C and O is

1. Only C
2. *Both C & O*
3. Only O
4. H, C and O

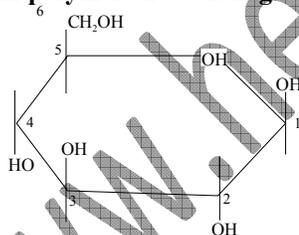
103. Retinoblastoma is one of the important proteins involved in cancer. The function of Rb is to hold the protein involved in

1. G1 arrest
2. G<sub>2</sub> arrest
3. DNA repair
4. *Replication initiation*

104. The major function of type-III secretion by pathogenic bacteria is

1. Efflux of drugs
2. Release signal for quorum sensing
3. *Release virulence factors*
4. Release of competence factors

105. The structure of carbohydrate is shown as below. In polymer the bonding will be



1. 1, 2
2. *1, 4*
3. 4, 6
4. 2, 4

106. Under what condition reaction will always occur

1.  $\Delta H < 0$  and  $\Delta S < 0$
2.  *$\Delta H < 0$  and  $\Delta S > 0$*
3.  $\Delta H > 0$  and  $\Delta S > 0$
4.  $\Delta H > 0$  and  $\Delta S < 0$

107. Which thermodynamics property cannot be directly measured in cell

1. *Free energy*
2. Enthalpy
3. Entropy
4. Temperature

108. An enzyme has Glu<sub>76</sub> and Asp<sub>52</sub> at active site.

The pI for Glu is 5.6 and for Asp is 4.5. The enzyme function when Glu is in protonated form and Asp in deprotonated form. The pH where enzyme will show maximum activity will be

1. 4.5
2. *5.2*
3. 10.1
4. 5.05

109. Which statement is correct for globular proteins

1. *Always contain  $\alpha$  helix*
2. Contain  $\beta$  sheets
3. Contains  $\beta$  pleated sheet
4. Turns

110. Which organelle have characteristic galactolipids in its membrane

1. Mitochondria
2. *Chloroplast*
3. Endoplasmic Reticulum
4. Golgi body

111. If cell is not dividing (arrested in cell cycle) which repair mechanism will not occur

1. *Recombination repair mechanism*
2. Excision repair mechanism
3. Transcriptional coupled repair mechanism
4. DNA synthesis annealing repair

112. The virus inserted in genome can be recognised by

1. *FISH*
2. Microarray
3. Northern blot
4. Southern blot

113. Different strains of virus can be identified by

1. Fluorescence Microscopy
2. Electron microscopy
3. *PCR*
4. Observing symptoms of disease in patient

114. Bacterial two component system includes

1. *Sensory kinase and response regulator*
2. Sensory kinase and Phosphotransferase
3. Signal and receptor
4. Stimulus and response

115. Which of the following represents the gametophyte generation in plants

1. Ovule
2. Megaspore
3. *Embryo sac*
4. Egg

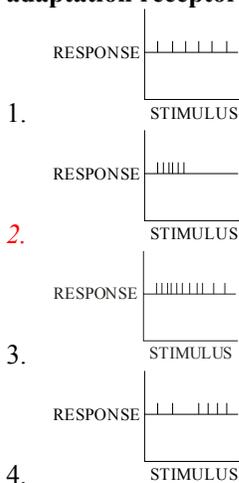
116. Which statement is correct for capacitation

1. *Is the maturation of mammalian spermatozoa after entering into oviduct of female*

2. Meiotic division in egg after penetration of sperm
  3. Maturation of egg in oviduct after fertilization
  4. Maturation of spermatozoa in male body
117. The major function of cortical granules in cytoplasm of egg is to
1. *Fast block to polyspermy*
  2. Slow block to polyspermy
  3. Allowing meiosis to complete
  4. Helping in reorganization of sperm
118. Bending of coleoptiles tip of oat toward source of unilateral light wavelength 454 nm is due to
1. *Lateral distribution of auxin toward shaded area*
  2. Polar transport of auxin
  3. Degradation of auxin toward light
  4. Synthesis of auxin in shaded area
119. Among the following which is terpene
1. Chlorophyll
  2. *Lycopene*
  3. Xanthophyll
  4. Coumarin
120. Among the following which plant removes heavy metal from water
1. *Eichornia crassipes*
  2. *Nympha visin*
  3. *Pistia stratiotes*
  4. *Salvia officinalis*
121. Transport of oxygen and CO<sub>2</sub> in blood is
1. *O<sub>2</sub> in bound form and CO<sub>2</sub> in dissolved form*
  2. CO<sub>2</sub> in bound form and O<sub>2</sub> in dissolved form
  3. Both in dissolved form
  4. Both in bound form
122. Unsynchronized signals in EFG are generated during
1. Deep sleep
  2. REM sleep
  3. Slow wave but quite sleep
  4. *Active and non-quiet*
123. If neurons are like electrical wire. Then the function of myelin sheath would be like
1. wire
  2. Fuse
  3. *Insulator*
  4. Conductor
124. Among the following which groups of organisms are not uricotellic
1. *Mammals*
  2. Birds
  3. Reptiles
  4. Insects
125. If plant with genotype AaBb is self pollinated Where the A and B are not linked, then the probability of getting AABB genotype will be
1. 1/2
  2. 1/8
  3. *1/16*
  4. 1/4
126. During gamete formation alleles which do not undergo recombination segregates during
1. Meiosis-I
  2. *Meiosis-II*
  3. Mitosis
  4. Cleavage
127. Two different mutant of drosophila gives a black body colour. When these mutants are crossed all progeny have wild type colour. It means mutation are
1. Co-dominant
  2. Allelic
  3. *Non allelic*
  4. Epistatic
128. Polygenic traits in crops can be identified by
1. *QTL mapping*
  2. Cluster analysis
  3. Tandem array analysis
  4. Gene mapping
129. A *Neurospora* strain have start and stop growth behavior. The mutated gene was found to be on mitochondria. If female *Neurospora* having stp mutation is crossed with wild type male *Neurospora*. Phenotype of progenies will be
1. *All start and stop mutant*
  2. All wild type
  3. Majority of Start and stop mutant
  4. Majority of wild type
130. Under which condition recombination between genes will occur during conjugation
1. *F<sup>-</sup> × Hfr*
  2. F<sup>+</sup> × Hfr
  3. F<sup>'</sup> × Hfr
  4. F<sup>-</sup> × F<sup>-</sup>
131. Inversion is termed as crossover suppressor because
1. *Crossing over within an inversion loop, when it does occur, leads to deleted and duplicated crossover chromosomes and mortality of zygotes carrying them*
  2. No crossing over in the inversion loop
  3. Crossing over lead to formation of all acentric chromosomes
  4. Segregation of chromosomes in not normal
132. Unique character of family caryophyllaceae is presence of
1. *Saponins*
  2. Glycosides
  3. Terpenes
  4. Alkaloids
133. Which of the following is not a core angiosperm

1. Amborellales
2. Nymphaeales
3. Austrobaileyales
4. *Magnoliales*

134. Which graph correctly represents fast adaptation receptors



135. Functional response of predators means

1. Killing of prey population
2. Regulation of predator population by availability of prey
3. *In response to prey, the killing strategy developed by predator*
4. Choosing prey depending on density of prey

136. Which of the following organism have been extensively used in generation of transgenic plants

1. *Agrobacterium tumefaciens*
2. *Bacillus thuringiensis*
3. Baculo viruses
4. E. coli

137. For making transgenic animals in fertilized egg the best place to insert trans-gene is in

1. Female pronuclei
2. *Male pronuclei*
3. Cytoplasm
4. Cleavage cells

138. To determine variation in wing length of butterfly from five different places which would be best statistical test?

1. Chi-square
2. Student t-test
3. *F-test*
4. Regression analysis

139. Protective mechanism in which organism have colour which blend with surrounding is termed as

1. Blending
2. *Camouflaging*
3. Mimicry
4. Aposematic coloration

140. Among the following which amino acid has two buffering zone

1. Glycine
2. Alanine
3. Cysteine
4. *Glutamine*

*Note: Paper is being prepared by Helix Academy with help of students of Helix on their memory basis.*

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Date and Time of the Commencement of Orientation Class for June Exam:

6<sup>th</sup> Jan., 2010 at 2:00 pm

20<sup>th</sup> Jan, 2010 at 10.00 am

Fast Track Crash Course For GATE-2010.

2<sup>nd</sup> Jan.- 2010 (Saturday) at 2.00 pm

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