BIOTECHNOLOGY

1. The term ‘Cell’ is not used to describe the following living system

|  |  |
| --- | --- |
| (A) | Algae  |
| (B) | Bacteria  |
| (C) | Virus  |
| (D) | Fungi  |

2. Developing GM Brinjal in India had the objective of

|  |  |
| --- | --- |
| (A) | Microbial resistance |
| (B) | Salinity resistance  |
| (C) | Insect resistance  |
| (D) | Drought resistance  |

3. For which of the following health conditions was gene therapy tried first?

|  |  |
| --- | --- |
| (A) | Rheumatoid arthritis  |
| (B) | Diabetes mellitus  |
| (C) | Lupus  |
| (D) | ADA deficiency  |

4. The excised part of plant and animal used for *in vitro* culture is called

|  |  |
| --- | --- |
| (A) | Explant  |
| (B) | Embryoid  |
| (C) | Callus  |
| (D) | Teratoma  |

5. The insecticidal protein synthesised by *Bacillus thuringiensis* brings about its action

|  |  |
| --- | --- |
| (A) | Being toxic during insect ingestion  |
| (B) | By creating unfavourable environment  |
| (C) | By binding and destroying midgut epithelial cells in insect  |
| (D) | By triggering enzymatic modifications in insect  |

6. EDTA is used for *in vitro* subculturing of animal cells, since it

|  |  |
| --- | --- |
| (A) | chelates the metal ions that participate in cell adhesion  |
| (B) | destroys cell to cell glycol proteins  |
| (C) | helps in floating the cells  |
| (D) | digests cell membrane associated proteins  |

7. Expression systems available for large-scale recombinant protein production in mammalian systems include

|  |  |
| --- | --- |
| (A) | Baculovirus  |
| (B) | Salmonella  |
| (C) | T4 Phage  |
| (D) | Agrobacterium  |

8. Which type of culture can be used to get virus-free plants?

|  |  |
| --- | --- |
| (A) | Micropropagation  |
| (B) | Meristem culture  |
| (C) | Callus culture  |
| (D) | Haploid culture  |

9. Tritiated antibodies are used in

|  |  |
| --- | --- |
| (A) | Enzyme Linked Immunosorbent Assay  |
| (B) | Radio Immuno Assay (RIA) |
| (C) | Radial Immunodiffusion Assay  |
| (D) | All of the above  |

10. Second line of defense in providing immunity includes

|  |  |
| --- | --- |
| (A) | Macrophages  |
| (B) | Cilia  |
| (C) | Skin  |
| (D) | Stomach acid  |

11. Urea denatures the proteins by

|  |  |
| --- | --- |
| (A) | weakening the intermolecular bonds |
| (B) | changing the hydrodynamics of the solvent |
| (C) | None of the above |
| (D) | Both (A) and (B)  |

12. 5S, 16S and 23S RNA molecules are seen in

|  |  |
| --- | --- |
| (A) | Eukaryotic rRNA |
| (B) | Eukaryotic miRNA |
| (C) | Prokaryotic rRNA |
| (D) | Prokaryotic tRNA |

13. First genetically-engineered model plant was

|  |  |
| --- | --- |
| (A) | Antibiotic resistant tobacco |
| (B) | Insect resistant tobacco |
| (C) | Antibiotic resistant tomato |
| (D) | Insect resistant tomato |

14. The genes coding ‘opine synthesising enzymes’ are present in

|  |  |
| --- | --- |
| (A) | Ti plasmid |
| (B) | R plasmid |
| (C) | Ti and R plasmids |
| (D) | Z plasmid |

15. Klenow fragment of DNA polymerase I retains

|  |  |
| --- | --- |
| (A) | 5' → 3' polymerase activity |
| (B) | 3’ → 5’ polymerase activity |
| (C) | 5' → 3' exonuclease activity |
| (D) | All the three activities |

16. Fermentation system in which fresh medium is delivered at a constant rate and cells and spent medium overflow at that same rate is

|  |  |
| --- | --- |
| (A) | Chemostat |
| (B) | Cryostat |
| (C) | Thermostat |
| (D) | Turbidostat |

17. The key regulatory enzyme of TCA cycle among the following is

|  |  |
| --- | --- |
| (A) | Aconitase |
| (B) | Malate dehydrogenase |
| (C) | Isocitrate dehydrogenase |
| (D) | Aldolase |

18. Among the following, which is used to break the vortex formation in the fermentation vessel

|  |  |
| --- | --- |
| (A) | Baffle |
| (B) | Agitator |
| (C) | Sparger |
| (D) | Jacket |

19. β-oxidation in eukaryotes takes place inside

|  |  |
| --- | --- |
| (A) | Cytosol |
| (B) | Endoplasmic reticulum |
| (C) | Lysosome |
| (D) | Mitochondrion |

20. Prokaryotic translation Initiation requires energy as

|  |  |
| --- | --- |
| (A) | ATP |
| (B) | GTP |
| (C) | CTP |
| (D) | UTP |

21. Hydrophobic component of Electron Transport Chain includes

|  |  |
| --- | --- |
| (A) | Cytochrome |
| (B) | Ferredoxin |
| (C) | Ubiquinone |
| (D) | Cytochrome Oxidase |

22. Rotor which avoids “wall effect” during centrifugation is

|  |  |
| --- | --- |
| (A) | Swinging Bucket |
| (B) | Vertical |
| (C) | Fixed angle |
| (D) | Zonal |

23. The relationship given by Beer-Lambert law is

|  |  |
| --- | --- |
| (A) | Energy absorption and concentration |
| (B) | Energy absorption and reflected radiation |
| (C) | Energy absorption and scattering |
| (D) | Transmittance and reflection |

24. Saks vaccine for polio was manufactured first using

|  |  |
| --- | --- |
| (A) | Microbial cells |
| (B) | HeLa cells |
| (C) | CHO cells |
| (D) | BHK cells |

25. Vesicular-arbuscular mycorrhiza (VAM) is formed by the symbiotic association between

|  |  |
| --- | --- |
| (A) | Fungi and angiosperm roots |
| (B) | Fungi and monocot roots |
| (C) | Bacteria and angiosperm roots |
| (D) | Virus and dicot roots |

26. *Chinchilla* is a species of

|  |  |
| --- | --- |
| (A) | Primate |
| (B) | Rodent |
| (C) | Reptile |
| (D) | Fish |

27. Total number of bones in a neonatal baby is

|  |  |
| --- | --- |
| (A) | 270 |
| (B) | 206 |
| (C) | 300 |
| (D) | 200 |

28. Which organ secrets trypsin?

|  |  |
| --- | --- |
| (A) | Salivary glands |
| (B) | Stomach |
| (C) | Pancreas |
| (D) | Duodenum |

29. Deficiency of protein can lead to

|  |  |
| --- | --- |
| (A) | Beri Beri |
| (B) | Scurvy |
| (C) | Osteoporosis |
| (D) | Kwashiorkor |

30. Which is the antihaemorrhagic vitamin essential for coagulation of blood?

|  |  |
| --- | --- |
| (A) | Vitamin D |
| (B) | Vitamin B |
| (C) | Vitamin E |
| (D) | Vitamin K |

31. The digestive enzyme, Ptyalin is a

|  |  |
| --- | --- |
| (A) | Protease |
| (B) | Lipase |
| (C) | Salivary amylase |
| (D) | Elastase |

32. Exchange of bicarbonate (HCO3−) and chloride (Cl−) across the membrane of red blood cells (RBCs) is

|  |  |
| --- | --- |
| (A) | Chloride Shift |
| (B) | Ammonium Shift |
| (C) | Bicarbonate shift |
| (D) | Haemoglobin shift |

33. Sphygmomanometer is used to measure

|  |  |
| --- | --- |
| (A) | Blood pressure |
| (B) | Blood Glucose level |
| (C) | Blood Calcium level |
| (D) | Heart rate |

34. Tube feet are locomotory organs in

|  |  |
| --- | --- |
| (A) | Aschelminthes |
| (B) | Arthropoda |
| (C) | Echinodermata |
| (D) | Mollusca |

35. Torpedology is the study of

|  |  |
| --- | --- |
| (A) | Birds |
| (B) | Sharks |
| (C) | Amphibians |
| (D) | Insects |

36. The receptors in fishes responding to water currents are

|  |  |
| --- | --- |
| (A) | olfactoreceptors |
| (B) | rheoreceptors |
| (C) | gustoreceptors |
| (D) | chemoreceptors |

37. Chills and rigors in malaria is caused by

|  |  |
| --- | --- |
| (A) | Haemoglobin |
| (B) | Oxy-haemoglobin |
| (C) | Hemozoin |
| (D) | Haemolysis |

38. Which organelle in amoeba regulates osmotic pressure in the cell?

|  |  |
| --- | --- |
| (A) | Cytosol |
| (B) | Mitochondria |
| (C) | Golgi bodies |
| (D) | Vacuole |

39. Movement of paramecium in an electric field is

|  |  |
| --- | --- |
| (A) | Galvanotaxis |
| (B) | Chemotaxis |
| (C) | Phototaxis |
| (D) | Gravitaxis |

40. Tears are produced from

|  |  |
| --- | --- |
| (A) | Parotid Glands |
| (B) | Penial Glands |
| (C) | Lacrymal Glands |
| (D) | Cornea |

41. Ink glands in Sepia produce

|  |  |
| --- | --- |
| (A) | Melatonin |
| (B) | Melanin |
| (C) | Plasminogen |
| (D) | Serotonin |

42. Galacturonic acid is the building block of

|  |  |
| --- | --- |
| (A) | Cellulose |
| (B) | Hemicellulose |
| (C) | Pectin |
| (D) | Chitin |

43. The water-conducting element in Xylem is

|  |  |
| --- | --- |
| (A) | Tracheids |
| (B) | Companion cells |
| (C) | Bast |
| (D) | Sieve tube |

44. Elements that are responsible for transporting sugars throughout the plant are

|  |  |
| --- | --- |
| (A) | Tracheary elements |
| (B) | Sieve tubes |
| (C) | Vessel elements |
| (D) | Sieve plates |

45. Which plant is mainly used for biodiesel production?

|  |  |
| --- | --- |
| (A) | Jackfruit |
| (B) | Mangifera |
| (C) | Jatropha |
| (D) | Ixora |

46. Which element’s deficiency in soil supports the growth of insectivorous plants?

|  |  |
| --- | --- |
| (A) | Sodium |
| (B) | Carbon |
| (C) | Nitrogen |
| (D) | Calcium |

47. Actively dividing cells found between xylem and phloem tissues in plants is

|  |  |
| --- | --- |
| (A) | Tracheids |
| (B) | Companion cells |
| (C) | Cambium |
| (D) | Pith |

48. The theory, “Active site of an enzyme is precisely shaped to hold the substrate” was proposed by

|  |  |
| --- | --- |
| (A) | Induced-fit hypothesis |
| (B) | Substrate strain theory |
| (C) | Lock and Key theory |
| (D) | All of the above |

49. Oxygen-carrier found in the Nitrogen-fixing root nodules of leguminous plants is

|  |  |
| --- | --- |
| (A) | Chlorophyll |
| (B) | Haemoglobin |
| (C) | Leghaemoglobin |
| (D) | Carotenoids |

50. Heterotrophic plants with no chlorophyll include

|  |  |
| --- | --- |
| (A) | Saprophytes |
| (B) | Epiphytes |
| (C) | Hemiparasites |
| (D) | None of the above |

51. Which is a growth inhibitor?

|  |  |
| --- | --- |
| (A) | Abscisic acid |
| (B) | Auxin |
| (C) | Cytokinins |
| (D) | Gibberellin |

52. L-carnitine occurs in

|  |  |
| --- | --- |
| (A) | Chloroplast |
| (B) | Mitochondria |
| (C) | Ribosomes |
| (D) | Nucleus |

53. Light independent reaction in photosynthesis is responsible for

|  |  |
| --- | --- |
| (A) | Reducing power |
| (B) | Oxygen Evolution |
| (C) | ATP generation |
| (D) | All of the above |

54. First stable compound formed in both C4 and CAM pathways in plants is

|  |  |
| --- | --- |
| (A) | Malate |
| (B) | Oxaloacetate |
| (C) | Phosphoglycerate |
| (D) | Glucose |

55. Amphibians of plant kingdom include

|  |  |
| --- | --- |
| (A) | Bryophytes |
| (B) | Pteridophytes |
| (C) | Gymnosperms |
| (D) | Saprophytes |

56. The plant hormone produced during chilling is

|  |  |
| --- | --- |
| (A) | Auxin |
| (B) | Gibberellin |
| (C) | Kinetin |
| (D) | Vernalin |

57. Germination of a seed below the ground is termed

|  |  |
| --- | --- |
| (A) | Hypogeal |
| (B) | Epigeal |
| (C) | Exogeal |
| (D) | None of the above |

58. Plant variety produced by selective breeding is

|  |  |
| --- | --- |
| (A) | Cultivar |
| (B) | Hybrid |
| (C) | Mutant |
| (D) | Pure line |

59. Algal bloom leads to

|  |  |
| --- | --- |
| (A) | Oxygen depletion from the aquatic ecosystem |
| (B) | Secreting toxins in the aquatic ecosystem |
| (C) | Both (A) and (B) |
| (D) | None of the above |

60. Anaerobic digestion of organic waste generates

|  |  |
| --- | --- |
| (A) | Methane |
| (B) | Ethane |
| (C) | Acetone |
| (D) | Acetic acid |

61. “No two electrons can have all the four quantum numbers to be the same”, is the basis of

|  |  |
| --- | --- |
| (A) | Dalton’s Atomic theory |
| (B) | Bohr’s Atomic theory |
| (C) | Pauli’s exclusion principle |
| (D) | Hund’s rule of maximum multiplicity |

62. Penetrating power and ionisation capacity of α, β and γ rays are

|  |  |
| --- | --- |
| (A) | α > β > γ and α < β < γ respectively |
| (B) | α < β < γ and α > β > γ respectively |
| (C) | α < β < γ and α ≥ β > γ respectively |
| (D) | α < β ≤ γ and α > β > γ respectively |

63. How long will it take for a 40 gram I131 (half-life = 8.040 days) to decay to 1/100 its original mass?

|  |  |
| --- | --- |
| (A) | 5.34 days |
| (B) | 56.2 days |
| (C) | 53.4 days |
| (D) | 50.6 days |

64. Fluid’s internal resistance and friction is described by

|  |  |
| --- | --- |
| (A) | Viscosity |
| (B) | Surface tension |
| (C) | Osmotic pressure |
| (D) | Permeability |

65. “Tears of Wine” phenomenon is due to

|  |  |
| --- | --- |
| (A) | similar surface tensions of water and ethanol |
| (B) | differing viscosity of water and ethanol |
| (C) | differing surface tensions of water and ethanol |
| (D) | similar viscosity of water and ethanol |

66. Electronegativity of an atom can be measured by

|  |  |
| --- | --- |
| (A) | AFM |
| (B) | SEM |
| (C) | Both (A) and (B) |
| (D) | None of the above |

67. What is the molarity of 5.00 g of NaOH in 750.0 mL of solution?

|  |  |
| --- | --- |
| (A) | 150 M |
| (B) | 15 M |
| (C) | 0.167 M |
| (D) | 1.67 M |

68. How many enolic forms can arise by tautomerism in the below ketone?



|  |  |
| --- | --- |
| (A) | 1 |
| (B) | 0 |
| (C) | 3 |
| (D) | 2 |

69. Degree of polarisation depends on

|  |  |
| --- | --- |
| (A) | Charge Density of cations |
| (B) | Charge Density of anions |
| (C) | Number of electrons |
| (D) | None of the above |

70. Deep sea dives use oxygen with added helium, why?

|  |  |
| --- | --- |
| (A) | To reduce acute oxygen toxicity in deep water |
| (B) | To reduce nitrogen necrosis |
| (C) | To reduce decompression sickness |
| (D) | All of the above |

71. Cis-trans Isomerism is exhibited by

|  |  |
| --- | --- |
| (A) | α-Ketoglutaric acid and Glutamic acid |
| (B) | Maleic acid and Fumaric acid |
| (C) | Maleic acid and Succinic acid |
| (D) | Aspartic acid and Glutamic acid |

72. Hydronium ion is

|  |  |
| --- | --- |
| (A) | a hydrated proton |
| (B) | dissociation product of water in solution |
| (C) | with a structure H3O**+** |
| (D) | All of the above |

73. Pharmacokinetics and pharmacodynamics are the effects of

|  |  |
| --- | --- |
| (A) | Drug on the body; body on drug respectively |
| (B) | Drug on a drug; body on drug respectively |
| (C) | Drug on the body; drug on drug respectively |
| (D) | Body on drug; body on drug respectively |

74. “DNA from any cell of any organism should have 1:1 ratio of pyrimidine and purine bases” is the basis of

|  |  |
| --- | --- |
| (A) | Wobble hypothesis |
| (B) | Chargaff’s rule |
| (C) | Semiconservative replication |
| (D) | Hayflick Limit |

75. Which of the following is the cofactor for Succinate Dehydrogenase?

|  |  |
| --- | --- |
| (A) | NADP  |
| (B) | NAD  |
| (C) | FAD  |
| (D) | FMN  |

76. Prokaryotic and Eucaryotic flagella are driven by

|  |  |
| --- | --- |
| (A) | ATP  |
| (B) | Proton  |
| (C) | Proton and ATP respectively  |
| (D) | ATP and Proton respectively  |

77. Bacterial genome is protected from its own endonucleases by

|  |  |
| --- | --- |
| (A) | Methylation at restriction sites |
| (B) | Immune mechanism |
| (C) | Nuclease resistant genome |
| (D) | not much effective on bacterial genome |

78. The most striking example of an unique point mutation is found in the disease

|  |  |
| --- | --- |
| (A) | Night blindness |
| (B) | Thalassemia |
| (C) | Down syndrome |
| (D) | Sickle-cell anaemia |

79. Proteins absorb UV radiation at 280 nm maximally due to the presence of

|  |  |
| --- | --- |
| (A) | Tryptophan |
| (B) | Tyrosine |
| (C) | Phenylalanine |
| (D) | All of the above |

80. Which one of the following does not have coenzyme activity?

|  |  |
| --- | --- |
| (A) | Vitamin E |
| (B) | Thiamine |
| (C) | Biotin |
| (D) | Riboflavin |

81. Active transport

|  |  |
| --- | --- |
| (A) | releases energy |
| (B) | requires energy |
| (C) | produces energy |
| (D) | produces toxic material |

82. The general name for an enzyme that transfers phosphate groups from ATP to a protein is

|  |  |
| --- | --- |
| (A) | Protein kinase |
| (B) | Phosphorylase |
| (C) | Phosphatase |
| (D) | ATPase |

83. TATA boxes and Pribnow boxes are components of

|  |  |
| --- | --- |
| (A) | Operators |
| (B) | Promoters |
| (C) | Enhancers |
| (D) | Activators |

84. Which of these molecules or complexes has a greater oxidizing potential than oxygen?

|  |  |
| --- | --- |
| (A) | Photosystem I (P700+) |
| (B) | Photosystem II (P680+) |
| (C) | NADP+ |
| (D) | Plastiquinone |

85. The relationship between legumes and *Rhizobium* is

|  |  |
| --- | --- |
| (A) | Mutualistic |
| (B) | Parasitic |
| (C) | Competitive |
| (D) | Commensalism |

86. A biological cycle with a period of about 24 hours is called

|  |  |
| --- | --- |
| (A) | Thigmotropism |
| (B) | Circadian rhythm |
| (C) | Photoperiod |
| (D) | Abscission |

87. Both photosynthesis and respiration require

|  |  |
| --- | --- |
| (A) | chloroplasts |
| (B) | sunlight |
| (C) | mitochondria |
| (D) | cytochrome |

88. Ribozyme is made up of

|  |  |
| --- | --- |
| (A) | RNA |
| (B) | Oligosaccharides  |
| (C) | Phospholipids |
| (D) | Monosaccharides  |

89. The stage of meiosis where cells become haploid

|  |  |
| --- | --- |
| (A) | Prophase I |
| (B) | Prophase II |
| (C) | Anaphase I |
| (D) | Anaphase II |

90. The excreta of lizards is rich in

|  |  |
| --- | --- |
| (A) | urea |
| (B) | uric acid |
| (C) | guanidine |
| (D) | alantoin |

91. Who demonstrated that genes are located on chromosomes?

|  |  |
| --- | --- |
| (A) | Morgan |
| (B) | Meselson and Stahl |
| (C) | Chargaff |
| (D) | Franklin |

92. Genetically engineered male sterile crop plants have been produced by inserting

|  |  |
| --- | --- |
| (A) | Viral coat protein gene |
| (B) | Chitinase gene |
| (C) | Barnase gene |
| (D) | Opaque Z-gene |

93. An open reading frame is one that has

|  |  |
| --- | --- |
| (A) | No start and stop codon |
| (B) | A start and stop codon |
| (C) | No start but stop codon |
| (D) | A start but no stop codon |

94. Which of the following restriction enzymes produces blunt end DNA fragments?

|  |  |
| --- | --- |
| (A) | EcoR I |
| (B) | EcoR II |
| (C) | Bam H1 |
| (D) | EcoR V |

95. A high BOD value in an aquatic environment is indicative of

|  |  |
| --- | --- |
| (A) | a pollution free system |
| (B) | a highly polluted system due to excess of nutrients |
| (C) | a highly polluted system due to abundant heterotrophs |
| (D) | a highly pure water with abundance of autotrophs |

96. ‘Green house’ gases absorb the light of wavelength

|  |  |
| --- | --- |
| (A) | 200 nm |
| (B) | 300 nm |
| (C) | 350 nm |
| (D) | 450 nm |

97. Western blotting is a technique for hybridization of

|  |  |
| --- | --- |
| (A) | Antigen-Antibody |
| (B) | DNA-cDNA |
| (C) | Polyamines |
| (D) | Monosaccharides |

98. Female gametophyte develops within

|  |  |
| --- | --- |
| (A) | Ovule |
| (B) | Seed |
| (C) | Stamen |
| (D) | Anther |

99. Cyclins are proteins involved in the regulation of

|  |  |
| --- | --- |
| (A) | Membrane circulation via exocytosis and endocytosis cell-cycle protein kinases |
| (B) | Mircadian rhythms |
| (C) | Synthesis of cAMP |
| (D) | Cell-cycle protein kinases |

100. The major site of attack by HIV on immune system is

|  |  |
| --- | --- |
| (A) | MHC |
| (B) | B- Lymphocytes |
| (C) | T- Lymphocytes |
| (D) | Macrophages |

101. Photochemical smog always contains

|  |  |
| --- | --- |
| (A) | Ozone |
| (B) | Methane |
| (C) | CO |
| (D) | None of the above |

102. Development of fruit without fertilization is

|  |  |
| --- | --- |
| (A) | Parthenocarpy |
| (B) | Pathenogenesis |
| (C) | Sporogamy |
| (D) | Autogamy |

103. Which among the following is a sterilizing agent?

|  |  |
| --- | --- |
| (A) | Ethylene oxide |
| (B) | Oxygen |
| (C) | Nitrogen |
| (D) | Carbon tetrachloride |

104. ‘Shine-Dalgarno sequence’ in bacterial mRNA is near

|  |  |
| --- | --- |
| (A) | AUG codon |
| (B) | UAA codon |
| (C) | UAG codon |
| (D) | UGA codon |

105. Which among the following is not a universal stop codon?

|  |  |
| --- | --- |
| (A) | UAA |
| (B) | UGA |
| (C) | UAC |
| (D) | UAG |

106. The condition ‘albinism’ in man is linked to deficiency of the enzyme

|  |  |
| --- | --- |
| (A) | Glucose-6-phosphate dehydrogenase |
| (B) | Arginase |
| (C) | Tyrosinase |
| (D) | Xanthin oxidase |

107. Which of the following anti-tumor agents acts by impairing *de novo* purine synthesis?

|  |  |
| --- | --- |
| (A) | Cytosine arabinoside |
| (B) | 5-flurouracil |
| (C) | Methotrexate |
| (D) | Hydroxyurea |

108. rRNA originates from

|  |  |
| --- | --- |
| (A) | Nucleus |
| (B) | Nucleolus |
| (C) | Cytoplasm |
| (D) | ER |

109. All of the following are proteins within the core nucleosome particle, EXCEPT

|  |  |
| --- | --- |
| (A) | H1 |
| (B) | H2A |
| (C) | H2B |
| (D) | H3 |

110. Which of the following chromosomal alterations would you expect to have the most drastic consequences?

|  |  |
| --- | --- |
| (A) | Inversion  |
| (B) | Duplication |
| (C) | Translocation |
| (D) | Deletion |

111. Holiday Junction is observed during

|  |  |
| --- | --- |
| (A) | Mitosis |
| (B) | Interphase |
| (C) | Recombination |
| (D) | DNA Repair |

112. Huntington’s disease is an example of a genetic disorder caused by

|  |  |
| --- | --- |
| (A) | A late acting lethal dominant allele |
| (B) | A non-lethal dominant allele |
| (C) | A late acting recessive allele |
| (D) | Homozygous recessive alleles |

113. In a Sephadex gel filteration column, a mixture of albumin, lysozyme and thymidine was loaded; In what sequence these will be eluted from the column

|  |  |
| --- | --- |
| (A) | Albumin > Lysozyme > Thymidine |
| (B) | Lysozyme > Thymidine > Albumin |
| (C) | Thymidine > Albumin > Lysozyme |
| (D) | Thymidine > Lysozyme > Albumin |

114. The consensus sequence of 5 ' and 3 ' splice junctions in eukaryotic mRNA contains

|  |  |
| --- | --- |
| (A) | GU-GA  |
| (B) | GU-AG |
| (C) | AG-GU  |
| (D) | CG-AG |

115. If total concentration of A = T is 56%, what will be the percentage concentration of Cytosine in the genome?

|  |  |
| --- | --- |
| (A) | 56 |
| (B) | 23 |
| (C) | 44 |
| (D) | 22 |

116. The difference between the molecular weight of sucrose and that of the sum of the molecular weights of its constituents (glucose and fructose) is

|  |  |
| --- | --- |
| (A) | 0 |
| (B) | 1 |
| (C) | 16 |
| (D) | 18 |

117. Hybridomas are employed for

|  |  |
| --- | --- |
| (A) | Synthesis of antibiotics  |
| (B) | Killing cancer cells |
| (C) | Synthesis of monoclonal antibodies  |
| (D) | Production of somatic hybrids |

118. Which of the following plant hormones hastens apple ripening?

|  |  |
| --- | --- |
| (A) | Auxins |
| (B) | Gibberellin |
| (C) | Abscisic acid |
| (D) | Ethylene |

119. In Bioinformatics, BLAST stands for

|  |  |
| --- | --- |
| (A) | Basic Local Alignment Search Tool |
| (B) | Bioinformatics Local Alignment Search Test |
| (C) | Biological Logarithmic Alignment Search Tool |
| (D) | Basic Local Alignment Software Throughput |

120. Which one of the following pairs is not correctly matched?

|  |  |
| --- | --- |
| (A) | Vitamin B12 - Pernicious anaemia |
| (B) | Vitamin B6 - Loss of appetite |
| (C) | Vitamin B1 - Beri-beri |
| (D) | Vitamin B2 - Pellagra |

121. Mitochondrion and chloroplast carry out oxidative phosphorylation and photo-phosphorylation, respectively, by means of

|  |  |
| --- | --- |
| (A) | Conformational coupling |
| (B) | Chemiosmotic coupling |
| (C) | High energy intermediate coupling |
| (D) | Sliding filaments |

122. The first antibody synthesized by the foetus is

|  |  |
| --- | --- |
| (A) | IgG |
| (B) | IgA |
| (C) | IgM |
| (D) | IgE |

123. When CO2 concentration in blood increases, breathing becomes

|  |  |
| --- | --- |
| (A) | shallower and slow |
| (B) | there is no effect on breathing |
| (C) | slow and deep |
| (D) | faster and deeper |

124. ‘The Ramachandran Plot’ is relevant in the study of

|  |  |
| --- | --- |
| (A) | DNA structures |
| (B) | RNA structures |
| (C) | Protein structures |
| (D) | Carbohydrate structures |

125. Which of the following compounds is an end product of beta-oxidation?

|  |  |
| --- | --- |
| (A) | Pyruvic acid |
| (B) | Acetyl CoA |
| (C) | Oxaloacetate |
| (D) | Alanine |

126. One of the following is an example for an inter-specific hybrid

|  |  |
| --- | --- |
| (A) | Donkey |
| (B) | Horse |
| (C) | Mule |
| (D) | Hare |

127. Conversion of a floral organ to leaf-like structure is known as

|  |  |
| --- | --- |
| (A) | Phyllody |
| (B) | Petalody |
| (C) | Emody |
| (D) | Staminody |

128. An agent that causes phyllody is

|  |  |
| --- | --- |
| (A) | Bacteria |
| (B) | Fungi |
| (C) | Virus |
| (D) | Phytoplasma |

129. The scientist who won Nobel Prize for the discovery of an Enzyme is

|  |  |
| --- | --- |
| (A) | T.H. Morgan |
| (B) | E. Buchner |
| (C) | Venkata Ramakrishnan |
| (D) | K. Landsteiner |

130. Opines are small molecules that serve as food for

|  |  |
| --- | --- |
| (A) | *Agrobacterium* sp. |
| (B) | *Bacillus* sp. |
| (C) | *Pseudomonos* sp. |
| (D) | *Staphylococcus* sp. |

131. Which one of the following is a natural auxin?

|  |  |
| --- | --- |
| (A) | Gibberellin |
| (B) | Ethylene |
| (C) | Indole acetic acid |
| (D) | Zeatin |

132. Insulin is secreted by

|  |  |
| --- | --- |
| (A) | Pituitary gland |
| (B) | Hypothalamus |
| (C) | Pancreas |
| (D) | Thymus |

133. Mycelium refers to the vegetative body of a/an

|  |  |
| --- | --- |
| (A) | fungus |
| (B) | alga |
| (C) | bacterium |
| (D) | zoospore |

134. Pasteur effect refers to slowing down of the rate of glucose metabolism in *Saccharomyces cerevisiae* cells in the presence of

|  |  |
| --- | --- |
| (A) | Carbon dioxide |
| (B) | Nitrogen |
| (C) | Argon |
| (D) | Oxygen |

135. The evolutionary process by which an organism becomes better suited to its habitat is known as

|  |  |
| --- | --- |
| (A) | Homeostasis |
| (B) | Stability |
| (C) | Adaptation |
| (D) | Reproduction |

136. The element essential for the functioning of thyroxin is

|  |  |
| --- | --- |
| (A) | Copper |
| (B) | Iodine |
| (C) | Zinc |
| (D) | Molybdinum |

137. Gram stain is used to distinguish different types of

|  |  |
| --- | --- |
| (A) | Bacteria |
| (B) | Fungi |
| (C) | Yeast |
| (D) | Mycoplasma |

138. Which one is an epimer of D-glucose?

|  |  |
| --- | --- |
| (A) | D-Galactose |
| (B) | D-Fructose |
| (C) | D-Ribose |
| (D) | D-Xylose |

139. The instrument used to make thin sections of processed tissue sample for microscopic study is

|  |  |
| --- | --- |
| (A) | Microtome |
| (B) | Centrifuge |
| (C) | Vacuum dryer |
| (D) | Kitchen knife |

140. Prion is a

|  |  |
| --- | --- |
| (A) | DNA |
| (B) | RNA |
| (C) | Fatty acid |
| (D) | Protein |

141. Dengue is caused by

|  |  |
| --- | --- |
| (A) | Bacteria |
| (B) | Fungus |
| (C) | Viruses |
| (D) | Amoeba |

142. Watson and Crick are associated with

|  |  |
| --- | --- |
| (A) | Protoplasm theory |
| (B) | Cell theory |
| (C) | DNA double-helix |
| (D) | Fluid Mosaic Model |

143. Pyridoxine is otherwise known as

|  |  |
| --- | --- |
| (A) | Vitamin B1 |
| (B) | Vitamin B6 |
| (C) | Vitamin B9 |
| (D) | Vitamin B12 |

144. Photorespiration is a process in which RuBisco fixes

|  |  |
| --- | --- |
| (A) | Carbon dioxide |
| (B) | Oxygen |
| (C) | Nitrogen |
| (D) | Sulphur |

145. Ornithine is a

|  |  |
| --- | --- |
| (A) | Non-protein amino acid |
| (B) | Non-protein carbohydrate |
| (C) | Non-protein fatty acid |
| (D) | Non-protein nucleotide |

146. Enzyme that transcribes RNA into DNA is known as

|  |  |
| --- | --- |
| (A) | ligase |
| (B) | endonuclease |
| (C) | kinase |
| (D) | reverse transcriptase |

147. Which one of the following crops has its centre of origin in India?

|  |  |
| --- | --- |
| (A) | Wheat |
| (B) | Potato |
| (C) | Brinjal |
| (D) | Sunflower |

148. The high energy molecule produced by substrate level phosphorylation in TCA cycle is

|  |  |
| --- | --- |
| (A) | ADP |
| (B) | TTP |
| (C) | GTP |
| (D) | CTP |

149. The radiation used to find bone density is

|  |  |
| --- | --- |
| (A) | Gamma ray |
| (B) | UV ray |
| (C) | X-ray |
| (D) | Radio wave |

150. The suicidal bag of a cell is

|  |  |
| --- | --- |
| (A) | Golgi complex |
| (B) | Mitochondrion |
| (C) | Nucleoli |
| (D) | Lysosome |

