37. For which one of the following, Bohr model is **not** valid ?

(1) Deuteron atom

(2) Singly ionised neon atom (Ne^+)

(3) Hydrogen atom

(4) Singly ionised helium atom (He^+)

38. A spherical conductor of radius 10 cm has a charge of 3.2×10^{-7} C distributed uniformly. What is the magnitude of electric field at a point 15 cm from the centre of the sphere ?

$\left(\frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ N m}^2/\text{C}^2\right)$

(1) 1.28×10^6 N/C

(2) 1.28×10^7 N/C

(3) 1.28×10^4 N/C

(4) 1.28×10^5 N/C

39. The energy required to break one bond in DNA is 10^{-20} J. This value in eV is nearly :

(1) 0.06

(2) 0.006

(3) 6

(4) 0.6

40. In a certain region of space with volume 0.2 m^3, the electric potential is found to be 5 V throughout. The magnitude of electric field in this region is :

(1) 1 N/C

(2) 5 N/C

(3) zero

(4) 0.5 N/C

41. A long solenoid of 50 cm length having 100 turns carries a current of 2.5 A. The magnetic field at the centre of the solenoid is :

($\mu_0 = 4\pi \times 10^{-7}$ T m A^{-1})

(1) 6.28×10^{-5} T

(2) 3.14×10^{-5} T

(3) 6.28×10^{-4} T

(4) 3.14×10^{-4} T

42. Light of frequency 1.5 times the threshold frequency is incident on a photosensitive material. What will be the photoelectric current if the frequency is halved and intensity is doubled ?

(1) one-fourth

(2) zero

(3) doubled

(4) four times

43. A capillary tube of radius r is immersed in water and water rises in it to a height h. The mass of the water in the capillary is 5 g. Another capillary tube of radius 2r is immersed in water. The mass of water that will rise in this tube is :

(1) 10.0 g

(2) 20.0 g

(3) 2.5 g

(4) 5.0 g

44. A body weighs 72 N on the surface of the earth. What is the gravitational force on it, at a height equal to half the radius of the earth ?

(1) 30 N

(2) 24 N

(3) 48 N

(4) 32 N

45. A series LCR circuit is connected to an ac voltage source. When L is removed from the circuit, the phase difference between current and voltage is $\frac{\pi}{3}$. If instead C is removed from the circuit, the phase difference is again $\frac{\pi}{3}$ between current and voltage. The power factor of the circuit is :

(1) 1.0

(2) -1.0

(3) zero

(4) 0.5

46. The ovary is half inferior in :

(1) Sunflower

(2) Plum

(3) Brinjal

(4) Mustard

47. Identify the **wrong** statement with regard to Restriction Enzymes.

(1) They are useful in genetic engineering.

(2) Sticky ends can be joined by using DNA ligases.

(3) Each restriction enzyme functions by inspecting the length of a DNA sequence.

(4) They cut the strand of DNA at palindromic sites.

48. Identify the **wrong** statement with reference to transport of oxygen.

(1) Higher H^+ conc. in alveoli favours the formation of oxyhaemoglobin.

(2) Low pCO_2 in alveoli favours the formation of oxyhaemoglobin.

(3) Binding of oxygen with haemoglobin is mainly related to partial pressure of O_2.

(4) Partial pressure of CO_2 can interfere with O_2 binding with haemoglobin.

49. In water hyacinth and water lily, pollination takes place by :

(1) wind and water

(2) insects and water

(3) insects or wind

(4) water currents only

50. If the distance between two consecutive base pairs is 0.34 nm and the total number of base pairs of a DNA double helix in a typical mammalian cell is 6.6×10^9 bp, then the length of the DNA is approximately :

(1) 2.2 meters

(2) 2.7 meters

(3) 2.0 meters

(4) 2.5 meters

51. Dissolution of the synaptonemal complex occurs during :

(1) Diplotene

(2) Leptotene

(3) Pachytene

(4) Zygotene

52. Match the following concerning essential elements and their functions in plants :

(a)	Iron	(i)	Photolysis of water
(b)	Zinc	(ii)	Pollen germination
(c)	Boron	(iii)	Required for chlorophyll biosynthesis
(d)	Manganese	(iv)	IAA biosynthesis

Select the **correct** option :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(iv)	(ii)	(i)
(2)	(iv)	(i)	(ii)	(iii)
(3)	(ii)	(i)	(iv)	(iii)
(4)	(iv)	(iii)	(ii)	(i)

53. The body of the ovule is fused within the funicle at :

(1) Nucellus

(2) Chalaza

(3) Hilum

(4) Micropyle

54. In relation to Gross primary productivity and Net primary productivity of an ecosystem, which one of the following statements is **correct** ?

(1) Gross primary productivity and Net primary productivity are one and same.

(2) There is no relationship between Gross primary productivity and Net primary productivity.

(3) Gross primary productivity is always less than net primary productivity.

(4) Gross primary productivity is always more than net primary productivity.

55. Which of the following refer to **correct** example(s) of organisms which have evolved due to changes in environment brought about by anthropogenic action ?

(a) Darwin's Finches of Galapagos islands.

(b) Herbicide resistant weeds.

(c) Drug resistant eukaryotes.

(d) Man-created breeds of domesticated animals like dogs.

(1) (b), (c) and (d)

(2) only (d)

(3) only (a)

(4) (a) and (c)

56. Identify the **correct** statement with reference to human digestive system.

(1) Ileum is a highly coiled part.

(2) Vermiform appendix arises from duodenum.

(3) Ileum opens into small intestine.

(4) Serosa is the innermost layer of the alimentary canal.

57. The product(s) of reaction catalyzed by nitrogenase in root nodules of leguminous plants is/are :

(1) Ammonia and oxygen

(2) Ammonia and hydrogen

(3) Ammonia alone

(4) Nitrate alone

58. The transverse section of a plant shows following anatomical features :

(a) Large number of scattered vascular bundles surrounded by bundle sheath.

(b) Large conspicuous parenchymatous ground tissue.

(c) Vascular bundles conjoint and closed.

(d) Phloem parenchyma absent.

Identify the category of plant and its part :

(1) Dicotyledonous stem

(2) Dicotyledonous root

(3) Monocotyledonous stem

(4) Monocotyledonous root

59. Bilaterally symmetrical and acoelomate animals are exemplified by :

(1) Aschelminthes

(2) Annelida

(3) Ctenophora

(4) Platyhelminthes

60. Goblet cells of alimentary canal are modified from :

(1) Chondrocytes

(2) Compound epithelial cells

(3) Squamous epithelial cells

(4) Columnar epithelial cells

61. Which of the following is **not** an attribute of a population ?

(1) Mortality

(2) Species interaction

(3) Sex ratio

(4) Natality

62. Embryological support for evolution was disapproved by :

(1) Charles Darwin

(2) Oparin

(3) Karl Ernst von Baer

(4) Alfred Wallace

63. Which one of the following is the most abundant protein in the animals ?

(1) Lectin

(2) Insulin

(3) Haemoglobin

(4) Collagen

64. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Eosinophils	(i)	Immune response
(b)	Basophils	(ii)	Phagocytosis
(c)	Neutrophils	(iii)	Release histaminase, destructive enzymes
(d)	Lymphocytes	(iv)	Release granules containing histamine

	(a)	**(b)**	**(c)**	**(d)**
(1)	(i)	(ii)	(iv)	(iii)
(2)	(ii)	(i)	(iii)	(iv)
(3)	(iii)	(iv)	(ii)	(i)
(4)	(iv)	(i)	(ii)	(iii)

65. Which of the following hormone levels will cause release of ovum (ovulation) from the graffian follicle ?

(1) Low concentration of LH

(2) Low concentration of FSH

(3) High concentration of Estrogen

(4) High concentration of Progesterone

66. The sequence that controls the copy number of the linked DNA in the vector, is termed :

(1) Palindromic sequence

(2) Recognition site

(3) Selectable marker

(4) Ori site

67. The plant parts which consist of two generations - one within the other :

(a) Pollen grains inside the anther

(b) Germinated pollen grain with two male gametes

(c) Seed inside the fruit

(d) Embryo sac inside the ovule

(1) (c) and (d)

(2) (a) and (d)

(3) (a) only

(4) (a), (b) and (c)

68. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	*Clostridium butylicum*	(i)	Cyclosporin-A
(b)	*Trichoderma polysporum*	(ii)	Butyric Acid
(c)	*Monascus purpureus*	(iii)	Citric Acid
(d)	*Aspergillus niger*	(iv)	Blood cholesterol lowering agent

	(a)	**(b)**	**(c)**	**(d)**
(1)	(i)	(ii)	(iv)	(iii)
(2)	(iv)	(iii)	(ii)	(i)
(3)	(iii)	(iv)	(ii)	(i)
(4)	(ii)	(i)	(iv)	(iii)

69. The roots that originate from the base of the stem are :

(1) Prop roots

(2) Lateral roots

(3) Fibrous roots

(4) Primary roots

70. Identify the **wrong** statement with reference to the gene 'I' that controls ABO blood groups.

(1) When I^A and I^B are present together, they express same type of sugar.

(2) Allele 'i' does not produce any sugar.

(3) The gene (I) has three alleles.

(4) A person will have only two of the three alleles.

71. Which of the following would help in prevention of diuresis ?

(1) Atrial natriuretic factor causes vasoconstriction

(2) Decrease in secretion of renin by JG cells

(3) More water reabsorption due to undersecretion of ADH

(4) Reabsorption of Na^+ and water from renal tubules due to aldosterone

72. Montreal protocol was signed in 1987 for control of :

(1) Release of Green House gases

(2) Disposal of e-wastes

(3) Transport of Genetically modified organisms from one country to another

(4) Emission of ozone depleting substances

73. Meiotic division of the secondary oocyte is completed :

(1) After zygote formation

(2) At the time of fusion of a sperm with an ovum

(3) Prior to ovulation

(4) At the time of copulation

74. By which method was a new breed 'Hisardale' of sheep formed by using Bikaneri ewes and Marino rams ?

(1) Cross breeding

(2) Inbreeding

(3) Out crossing

(4) Mutational breeding

75. If the head of cockroach is removed, it may live for few days because :

(1) the head holds a small proportion of a nervous system while the rest is situated along the ventral part of its body.

(2) the head holds a 1/3rd of a nervous system while the rest is situated along the dorsal part of its body.

(3) the supra-oesophageal ganglia of the cockroach are situated in ventral part of abdomen.

(4) the cockroach does not have nervous system.

76. Identify the **incorrect** statement.

(1) Sapwood is the innermost secondary xylem and is lighter in colour.

(2) Due to deposition of tannins, resins, oils etc., heart wood is dark in colour.

(3) Heart wood does not conduct water but gives mechanical support.

(4) Sapwood is involved in conduction of water and minerals from root to leaf.

77. Select the option including all sexually transmitted diseases.

(1) AIDS, Malaria, Filaria

(2) Cancer, AIDS, Syphilis

(3) Gonorrhoea, Syphilis, Genital herpes

(4) Gonorrhoea, Malaria, Genital herpes

78. Identify the **wrong** statement with reference to immunity.

(1) Active immunity is quick and gives full response.

(2) Foetus receives some antibodies from mother, it is an example for passive immunity.

(3) When exposed to antigen (living or dead) antibodies are produced in the host's body. It is called "Active immunity".

(4) When ready-made antibodies are directly given, it is called "Passive immunity".

79. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Bt cotton	(i)	Gene therapy
(b)	Adenosine deaminase deficiency	(ii)	Cellular defence
(c)	RNAi	(iii)	Detection of HIV infection
(d)	PCR	(iv)	*Bacillus thuringiensis*

	(a)	**(b)**	**(c)**	**(d)**
(1)	(ii)	(iii)	(iv)	(i)
(2)	(i)	(ii)	(iii)	(iv)
(3)	(iv)	(i)	(ii)	(iii)
(4)	(iii)	(ii)	(i)	(iv)

80. Which of the following statements is **correct** ?

(1) Adenine pairs with thymine through three H-bonds.

(2) Adenine does not pair with thymine.

(3) Adenine pairs with thymine through two H-bonds.

(4) Adenine pairs with thymine through one H-bond.

81. According to Robert May, the global species diversity is about :

(1) 50 million

(2) 7 million

(3) 1.5 million

(4) 20 million

82. Secondary metabolites such as nicotine, strychnine and caffeine are produced by plants for their :

(1) Defence action

(2) Effect on reproduction

(3) Nutritive value

(4) Growth response

83. Which of the following pairs is of unicellular algae ?

(1) *Anabaena* and *Volvox*

(2) *Chlorella* and *Spirulina*

(3) *Laminaria* and *Sargassum*

(4) *Gelidium* and *Gracilaria*

84. The enzyme enterokinase helps in conversion of :

(1) caseinogen into casein

(2) pepsinogen into pepsin

(3) protein into polypeptides

(4) trypsinogen into trypsin

85. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	6 - 15 pairs of gill slits	(i)	*Trygon*
(b)	Heterocercal caudal fin	(ii)	Cyclostomes
(c)	Air Bladder	(iii)	Chondrichthyes
(d)	Poison sting	(iv)	Osteichthyes

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iv)	(ii)	(iii)	(i)
(2)	(i)	(iv)	(iii)	(ii)
(3)	(ii)	(iii)	(iv)	(i)
(4)	(iii)	(iv)	(i)	(ii)

86. The process responsible for facilitating loss of water in liquid form from the tip of grass blades at night and in early morning is :

(1) Imbibition

(2) Plasmolysis

(3) Transpiration

(4) Root pressure

87. Which of the following is put into Anaerobic sludge digester for further sewage treatment ?

(1) Effluents of primary treatment

(2) Activated sludge

(3) Primary sludge

(4) Floating debris

88. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Floating Ribs	(i)	Located between second and seventh ribs
(b)	Acromion	(ii)	Head of the Humerus
(c)	Scapula	(iii)	Clavicle
(d)	Glenoid cavity	(iv)	Do not connect with the sternum

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(ii)	(iv)	(i)
(2)	(iv)	(iii)	(i)	(ii)
(3)	(ii)	(iv)	(i)	(iii)
(4)	(i)	(iii)	(ii)	(iv)

89. Select the **correct** statement.

(1) Insulin acts on pancreatic cells and adipocytes.

(2) Insulin is associated with hyperglycemia.

(3) Glucocorticoids stimulate gluconeogenesis.

(4) Glucagon is associated with hypoglycemia.

90. Presence of which of the following conditions in urine are indicative of Diabetes Mellitus ?

(1) Ketonuria and Glycosuria

(2) Renal calculi and Hyperglycaemia

(3) Uremia and Ketonuria

(4) Uremia and Renal Calculi

91. Which of the following is **correct** about viroids ?

(1) They have DNA with protein coat.

(2) They have free DNA without protein coat.

(3) They have RNA with protein coat.

(4) They have free RNA without protein coat.

92. How many true breeding pea plant varieties did Mendel select as pairs, which were similar except in one character with contrasting traits ?

(1) 14
(2) 8
(3) 4
(4) 2

93. Which of the following regions of the globe exhibits highest species diversity ?

(1) Himalayas
(2) Amazon forests
(3) Western Ghats of India
(4) Madagascar

94. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Placenta	(i)	Androgens
(b)	Zona pellucida	(ii)	Human Chorionic Gonadotropin (hCG)
(c)	Bulbo-urethral glands	(iii)	Layer of the ovum
(d)	Leydig cells	(iv)	Lubrication of the Penis

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(ii)	(iv)	(i)
(2)	(ii)	(iii)	(iv)	(i)
(3)	(iv)	(iii)	(i)	(ii)
(4)	(i)	(iv)	(ii)	(iii)

95. Match the trophic levels with their **correct** species examples in grassland ecosystem.

(a)	Fourth trophic level	(i)	Crow
(b)	Second trophic level	(ii)	Vulture
(c)	First trophic level	(iii)	Rabbit
(d)	Third trophic level	(iv)	Grass

Select the **correct** option :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iv)	(iii)	(ii)	(i)
(2)	(i)	(ii)	(iii)	(iv)
(3)	(ii)	(iii)	(iv)	(i)
(4)	(iii)	(ii)	(i)	(iv)

96. Flippers of Penguins and Dolphins are examples of :

(1) Industrial melanism
(2) Natural selection
(3) Adaptive radiation
(4) Convergent evolution

97. The number of substrate level phosphorylations in one turn of citric acid cycle is :

(1) Two
(2) Three
(3) Zero
(4) One

98. Which of the following statements is **not correct** ?

(1) The functional insulin has A and B chains linked together by hydrogen bonds.
(2) Genetically engineered insulin is produced in *E-Coli*.
(3) In man insulin is synthesised as a proinsulin.
(4) The proinsulin has an extra peptide called C-peptide.

99. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Organ of Corti	(i)	Connects middle ear and pharynx
(b)	Cochlea	(ii)	Coiled part of the labyrinth
(c)	Eustachian tube	(iii)	Attached to the oval window
(d)	Stapes	(iv)	Located on the basilar membrane

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iv)	(ii)	(i)	(iii)
(2)	(i)	(ii)	(iv)	(iii)
(3)	(ii)	(iii)	(i)	(iv)
(4)	(iii)	(i)	(iv)	(ii)

100. Some dividing cells exit the cell cycle and enter vegetative inactive stage. This is called quiescent stage (G_0). This process occurs at the end of :

(1) S phase

(2) G_2 phase

(3) M phase

(4) G_1 phase

101. The process of growth is maximum during :

(1) Senescence

(2) Dormancy

(3) Log phase

(4) Lag phase

102. The QRS complex in a standard ECG represents :

(1) Depolarisation of ventricles

(2) Repolarisation of ventricles

(3) Repolarisation of auricles

(4) Depolarisation of auricles

103. Bt cotton variety that was developed by the introduction of toxin gene of *Bacillus thuringiensis* (Bt) is resistant to :

(1) Plant nematodes

(2) Insect predators

(3) Insect pests

(4) Fungal diseases

104. In which of the following techniques, the embryos are transferred to assist those females who cannot conceive ?

(1) ICSI and ZIFT

(2) GIFT and ICSI

(3) ZIFT and IUT

(4) GIFT and ZIFT

105. Floridean starch has structure similar to :

(1) Mannitol and algin

(2) Laminarin and cellulose

(3) Starch and cellulose

(4) Amylopectin and glycogen

106. Name the plant growth regulator which upon spraying on sugarcane crop, increases the length of stem, thus increasing the yield of sugarcane crop.

(1) Ethylene

(2) Abscisic acid

(3) Cytokinin

(4) Gibberellin

107. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Gregarious, polyphagous pest	(i)	*Asterias*
(b)	Adult with radial symmetry and larva with bilateral symmetry	(ii)	Scorpion
(c)	Book lungs	(iii)	*Ctenoplana*
(d)	Bioluminescence	(iv)	*Locusta*

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(ii)	(i)	(iv)
(2)	(ii)	(i)	(iii)	(iv)
(3)	(i)	(iii)	(ii)	(iv)
(4)	(iv)	(i)	(ii)	(iii)

108. Which of the following statements are **true** for the phylum-Chordata ?

(a) In Urochordata notochord extends from head to tail and it is present throughout their life.

(b) In Vertebrata notochord is present during the embryonic period only.

(c) Central nervous system is dorsal and hollow.

(d) Chordata is divided into 3 subphyla : Hemichordata, Tunicata and Cephalochordata.

(1) (a) and (b)

(2) (b) and (c)

(3) (d) and (c)

(4) (c) and (a)

109. The first phase of translation is :

(1) Aminoacylation of tRNA

(2) Recognition of an anti-codon

(3) Binding of mRNA to ribosome

(4) Recognition of DNA molecule

110. Identify the basic amino acid from the following.

(1) Lysine

(2) Valine

(3) Tyrosine

(4) Glutamic Acid

111. The infectious stage of *Plasmodium* that enters the human body is :

(1) Female gametocytes

(2) Male gametocytes

(3) Trophozoites

(4) Sporozoites

112. Identify the **correct** statement with regard to G_1 phase (Gap 1) of interphase.

(1) Cell is metabolically active, grows but does not replicate its DNA.

(2) Nuclear Division takes place.

(3) DNA synthesis or replication takes place.

(4) Reorganisation of all cell components takes place.

113. In light reaction, plastoquinone facilitates the transfer of electrons from :

(1) PS-I to $NADP^+$

(2) PS-I to ATP synthase

(3) PS-II to $Cytb_6f$ complex

(4) $Cytb_6f$ complex to PS-I

114. The oxygenation activity of RuBisCo enzyme in photorespiration leads to the formation of :

(1) 1 molecule of 6-C compound

(2) 1 molecule of 4-C compound and 1 molecule of 2-C compound

(3) 2 molecules of 3-C compound

(4) 1 molecule of 3-C compound

115. Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells ?

(1) Golgi bodies

(2) Polysomes

(3) Endoplasmic reticulum

(4) Peroxisomes

116. Match the following :

(a)	Inhibitor of catalytic activity	(i)	Ricin
(b)	Possess peptide bonds	(ii)	Malonate
(c)	Cell wall material in fungi	(iii)	Chitin
(d)	Secondary metabolite	(iv)	Collagen

Choose the **correct** option from the following :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(iv)	(i)	(ii)
(2)	(ii)	(iii)	(i)	(iv)
(3)	(ii)	(iv)	(iii)	(i)
(4)	(iii)	(i)	(iv)	(ii)

117. Identify the substances having glycosidic bond and peptide bond, respectively in their structure :

(1) Cellulose, lecithin

(2) Inulin, insulin

(3) Chitin, cholesterol

(4) Glycerol, trypsin

118. Experimental verification of the chromosomal theory of inheritance was done by :

(1) Boveri

(2) Morgan

(3) Mendel

(4) Sutton

119. The specific palindromic sequence which is recognized by EcoRI is :

(1) 5' - CTTAAG - 3'
3' - GAATTC - 5'

(2) 5' - GGATCC - 3'
3' - CCTAGG - 5'

(3) 5' - GAATTC - 3'
3' - CTTAAG - 5'

(4) 5' - GGAACC - 3'
3' - CCTTGG - 5'

120. Name the enzyme that facilitates opening of DNA helix during transcription.

(1) DNA polymerase

(2) RNA polymerase

(3) DNA ligase

(4) DNA helicase

121. Select the **correct** match.

(1) Sickle cell anaemia - Autosomal recessive trait, chromosome-11

(2) Thalassemia - X linked

(3) Haemophilia - Y linked

(4) Phenylketonuria - Autosomal dominant trait

122. From his experiments, S.L. Miller produced amino acids by mixing the following in a closed flask :

(1) CH_4, H_2, NH_3 and water vapor at 600°C

(2) CH_3, H_2, NH_3 and water vapor at 600°C

(3) CH_4, H_2, NH_3 and water vapor at 800°C

(4) CH_3, H_2, NH_4 and water vapor at 800°C

123. Match the following columns and select the **correct** option.

	Column - I		**Column - II**
(a)	Pituitary gland	(i)	Grave's disease
(b)	Thyroid gland	(ii)	Diabetes mellitus
(c)	Adrenal gland	(iii)	Diabetes insipidus
(d)	Pancreas	(iv)	Addison's disease

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(i)	(iv)	(ii)
(2)	(ii)	(i)	(iv)	(iii)
(3)	(iv)	(iii)	(i)	(ii)
(4)	(iii)	(ii)	(i)	(iv)

124. Cuboidal epithelium with brush border of microvilli is found in :

(1) proximal convoluted tubule of nephron

(2) eustachian tube

(3) lining of intestine

(4) ducts of salivary glands

125. Strobili or cones are found in :

(1) *Marchantia*

(2) *Equisetum*

(3) *Salvinia*

(4) *Pteris*

126. Snow-blindness in Antarctic region is due to :

(1) High reflection of light from snow

(2) Damage to retina caused by infra-red rays

(3) Freezing of fluids in the eye by low temperature

(4) Inflammation of cornea due to high dose of UV-B radiation

127. Match the following diseases with the causative organism and select the **correct** option.

	Column - I		**Column - II**
(a)	Typhoid	(i)	*Wuchereria*
(b)	Pneumonia	(ii)	*Plasmodium*
(c)	Filariasis	(iii)	*Salmonella*
(d)	Malaria	(iv)	*Haemophilus*

	(a)	**(b)**	**(c)**	**(d)**
(1)	(ii)	(i)	(iii)	(iv)
(2)	(iv)	(i)	(ii)	(iii)
(3)	(i)	(iii)	(ii)	(iv)
(4)	(iii)	(iv)	(i)	(ii)

128. Choose the **correct** pair from the following :

(1) Nucleases - Separate the two strands of DNA

(2) Exonucleases - Make cuts at specific positions within DNA

(3) Ligases - Join the two DNA molecules

(4) Polymerases - Break the DNA into fragments

129. Which of the following statements about inclusion bodies is **incorrect** ?

(1) They lie free in the cytoplasm.

(2) These represent reserve material in cytoplasm.

(3) They are not bound by any membrane.

(4) These are involved in ingestion of food particles.

130. Select the **correct** events that occur during inspiration.

(a) Contraction of diaphragm

(b) Contraction of external inter-costal muscles

(c) Pulmonary volume decreases

(d) Intra pulmonary pressure increases

(1) (a), (b) and (d)

(2) only (d)

(3) (a) and (b)

(4) (c) and (d)

131. Ray florets have :

(1) Hypogynous ovary

(2) Half inferior ovary

(3) Inferior ovary

(4) Superior ovary

132. Match the organism with its use in biotechnology.

(a)	*Bacillus thuringiensis*	(i)	Cloning vector
(b)	*Thermus aquaticus*	(ii)	Construction of first rDNA molecule
(c)	*Agrobacterium tumefaciens*	(iii)	DNA polymerase
(d)	*Salmonella typhimurium*	(iv)	Cry proteins

Select the **correct** option from the following :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(ii)	(iv)	(i)
(2)	(iii)	(iv)	(i)	(ii)
(3)	(ii)	(iv)	(iii)	(i)
(4)	(iv)	(iii)	(i)	(ii)

133. Which of the following is **not** an inhibitory substance governing seed dormancy ?

(1) Phenolic acid

(2) Para-ascorbic acid

(3) Gibberellic acid

(4) Abscisic acid

134. Match the following with respect to meiosis :

(a)	Zygotene	(i)	Terminalization
(b)	Pachytene	(ii)	Chiasmata
(c)	Diplotene	(iii)	Crossing over
(d)	Diakinesis	(iv)	Synapsis

Select the **correct** option from the following :

	(a)	**(b)**	**(c)**	**(d)**
(1)	(i)	(ii)	(iv)	(iii)
(2)	(ii)	(iv)	(iii)	(i)
(3)	(iii)	(iv)	(i)	(ii)
(4)	(iv)	(iii)	(ii)	(i)

135. In gel electrophoresis, separated DNA fragments can be visualized with the help of :

(1) Acetocarmine in UV radiation

(2) Ethidium bromide in infrared radiation

(3) Acetocarmine in bright blue light

(4) Ethidium bromide in UV radiation

136. Which of the following is a natural polymer ?

(1) polybutadiene

(2) poly (Butadiene-acrylonitrile)

(3) *cis*-1,4-polyisoprene

(4) poly (Butadiene-styrene)

137. On electrolysis of dil.sulphuric acid using Platinum (Pt) electrode, the product obtained at anode will be :

(1) H_2S gas

(2) SO_2 gas

(3) Hydrogen gas

(4) Oxygen gas

138. An element has a body centered cubic (bcc) structure with a cell edge of 288 pm. The atomic radius is :

(1) $\frac{4}{\sqrt{3}} \times 288$ pm

(2) $\frac{4}{\sqrt{2}} \times 288$ pm

(3) $\frac{\sqrt{3}}{4} \times 288$ pm

(4) $\frac{\sqrt{2}}{4} \times 288$ pm