AIPMT - 2009

Question Paper with Solution

BIOLOGY

51. Which one of the following is **correct** pairing of a body part and the kind of muscle tissue that moves it ?

(1) Biceps of upper arm – Smooth muscle fibres

(2) Abdominal wall – Smooth muscle

(3) Iris – Involuntary smooth muscle

(4) Heart wall – Involuntary unstriated muscle

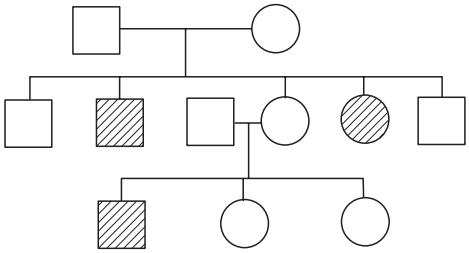
∴ **Correct choice : (2)**

52. The epithelial tissue present on the inner surface of bronchioles and fallopian tubes is:

(1) Glandular **(2)** Ciliated **(3)** Squamous **(4)** Cuboidal

∴ **Correct choice : (2)**

53. Study the pedigree chart given below:



What does it show ?

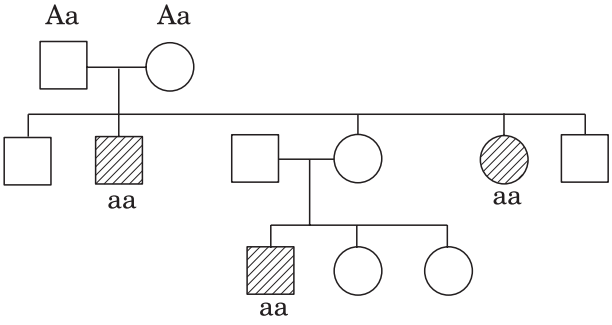
(1) Inheritance of a condition like phenylketonuria as an autosomal recessive trait

(2) The pedigree chart is wrong as this is not possible

(3) Inheritance of a recessive sex-linked disease like haemophilia

(4) Inheritance of a sex-linked inborn error of metabolism like phenylketonuria

Sol:



Parents needs to be heterozygous as two of their children are known to be sufferer of the disease. It cannot be recessive sex-linked inheritance because then the male parent would also be sufferer.

∴ **Correct choice : (1)**

54. Manganese is required in:

(1) Plant cell wall formation

(2) Photolysis of water during photosynthesis

(3) Chlorophyll synthesis

(4) Nucleic acid synthesis

∴ **Correct choice : (2)**

55. Polyethylene glycol method is used for:

(1) Biodiesel production **(2)** Seedless fruit production

(3) Energy production from sewage **(4)** Gene transfer without a vector

∴ **Correct choice : (4)**

56. The floral formula $\oplus$ ⚥ $K_{(5)}\,\overset{\frown}{C_{(5)}\,A_5}\,\underline{G(2)}$ is that of:

(1) Soybean **(2)** Sunnhemp **(3)** Tobacco **(4)** Tulip

Sol: Soyabean and Sunnhemp have monocarpellary pistil and tulip has trimerous flower and perianth.

∴ **Correct choice : (3)**

57. Which one of the following groups of animals is bilaterally symmetrical **and** triploblastic ?

(1) Aschelminthes (round worms) **(2)** Ctenophores

(3) Sponges **(4)** Coelenterates (Cnidarians)

∴ **Correct choice : (1)**

58. Which one of the following is commonly used in transfer of foreign DNA into crop plants ?

(1) Meloidogyne incognita **(2) Agrobacterium tumefaciens**

(3) Penicillium expansum **(4) Trichoderma harzianum**

∴ **Correct choice : (2)**

59. Which one of the following is the **correct** matching of the events occurring during menstrual cycle ?

(1) Proliferative phase : Rapid regeneration of myometrium and maturation of Graafian follicle.

(2) Development of corpus luteum : Secretory phase and increased secretion of progesterone.

(3) **Menstruation** : breakdown of myometrium and ovum not fertilised.

(4) **Ovulation** : LH and FSH attain peak level and sharp fall in the secretion of progesterone.

∴ **Correct choice : (2)**

60. Which one is the wrong pairing for the disease and its causal organism ?

(1) Black rust of wheat – **Puccinia graminis**

(2) Loose smut of wheat – **Ustilago nuda**

(3) Root-knot of vegetables – **Meloidogyne sp**

(4) Late blight of potato – **Alternaria solani**

∴ **Correct choice : (4)**

61. Global agreement in specific control strategies to reduce the release of ozone depleting substances, was adopted by:

(1) The Montreal Protocol (2) The Koyoto Protocol

(3) The Vienna Convention (4) Rio de Janeiro Conference

∴ **Correct choice : (1)**

62. What is **true** about Bt toxin ?

(1) Bt protein exists as active toxin in the **Bacillus**.

(2) The activated toxin enters the ovaries of the pest to sterilise it and thus prevent its multiplication.

(3) The concerned **Bacillus** has antitoxins.

(4) The inactive protoxin gets converted into active form in the insect gut.

∴ **Correct choice : (4)**

63. **Peripatus** is a connecting link between:

(1) Mollusca and Echinodermata (2) Annelida and Arthropoda

(3) Coelenterata and Porifera (4) Ctenophora and Platyhelminthis

∴ **Correct choice : (2)**

64. T.O. Diener discovered a:

(1) Free infectious DNA (2) Infectious protein

(3) Bacteriophage (4) Free infectious RNA

Sol: T.O. Diener discovered viroid which is free infectious RNA.

∴ **Correct choice : (4)**

65. Seminal plasma in humans is rich in:

(1) fructose and calcium but has no enzymes

(2) glucose and certain enzymes but has no calcium

(3) fructose and certain enzymes but poor in calcium

(4) fructose, calcium and certain enzymes

∴ **Correct choice : (3)**

66. A fruit developed from hypanthodium inflorescence is called:

(1) Sorosis **(2)** Syconus **(3)** Caryopsis **(4)** Hesperidium

∴ **Correct choice : (2)**

67. The cell junctions called tight, adhering and gap junctions are found in:

(1) Connective tissue **(2)** Epithelial tissue

(3) Neural tissue **(4)** Muscular tissue

∴ **Correct choice : (2)**

68. What will happen if the stretch receptors of the urinary bladder wall are totally removed ?

(1) Micturition will continue

(2) Urine will continue to collect normally in the bladder

(3) There will be no micturition

(4) Urine will not collect in the bladder

Sol: Micturition is same as urination. Urination is the act of passing urine which is a reflex phenomenon. As urine accumulates in bladder the stretch receptors are activated that pass the stimulus to the spinal cord. In the absence of stretch receptors the urine would get collected and probably overflow.

∴ **Correct choice : (3)**

69. If a live earthworm is pricked with a needle on its outer surface without damaging its gut, the fluid that comes out is:

(1) coelomic fluid **(2)** haemolymph **(3)** slimy mucus **(4)** excretory fluid

∴ **Correct choice : (1)**

70. The most popularly known blood grouping is the ABO grouping. It is named ABO and not ABC, because "O" in it refers to having:

(1) overdominance of this type on the genes for A and B types

(2) one antibody only – either anti-A or anti-B on the RBCs

(3) no antigens A and B on RBCs

(4) other antigens besides A and B on RBCs

∴ **Correct choice : (3)**

71. One of the synthetic auxin is:

(1) IAA **(2)** GA **(3)** IBA **(4)** NAA

∴ **Correct choice : (4)**

72. A person likely to develop tetanus is immunised by administering:

(1) Preformed antibodies **(2)** Wide spectrum antibiotics

(3) Weakened germs **(4)** Dead germs

Sol: Tetanus toxoid is a vaccine consisting of growth products of **Clostridium tetani** treated with formaladehyde serving as an active immunising agent. Hence is is weakened germs.

∴ **Correct choice : (3)**

73. Alzheimer disease in humans is associated with the deficiency of:

(1) glutamic acid

(2) acetylcholine

(3) gamma aminobutyric acid (GABA)

(4) dopamine

∴ **Correct choice : (2)**

74. Biochemical Oxygen Demand (BOD) in a river water:

(1) has no relationship with concentration of oxygen in the water.

(2) gives a measure of **salmonella** in the water.

(3) increases when sewage gets mixed with river water.

(4) remains unchanged when algal bloom occurs.

∴ **Correct choice : (3)**

75. The genetic defect – adenosine deaminase (ADA) deficiency may be cured **permanently** by:

(1) administering adenosine deaminase activators.

(2) introducing bone marrow cells producing ADA into cells at early embryonic stages.

(3) enzyme replacement therapy.

(4) periodic infusion of genetically engineered lymphocytes having functional ADA cDNA.

∴ **Correct choice : (2)**

76. Compared to blood our lymph has:

(1) plasma without proteins **(2)** more WBCs and no RBCs

(3) more RBCs and less WBCs **(4)** no plasma

∴ **Correct choice : (2)**

77. Sickle cell anemia is:

(1) caused by substitution of valine by glutamic acid in the beta globin chain of haemoglobin

(2) caused by a change in a single base pair of DNA

(3) characterized by elongated sickle like RBCs with a nucleus

(4) an autosomal linked dominant trait

∴ **Correct choice : (2)**

78. Which of the following plant species you would select for the production of bioethanol ?

(1) Zea mays **(2) Pongamia** **(3) Jatropha** **(4) Brassica**

∴ **Correct choice : (3)**

79. When breast feeding is replaced by less nutritive food low in proteins and calories; the infants below the age of one year are likely to suffer from:

(1) Rickets **(2)** Kwashiorkor **(3)** Pellagra **(4)** Marasmus

∴ **Correct choice : (2)**

80. A young infant may be feeding entirely on mother's milk which is white in colour but the stools which the infant passes out is quite yellowish. What is this yellow colour due to ?

(1) Bile pigments passed through bile juice

(2) Undigested milk protein casein

(3) Pancreatic juice poured into duodenum

(4) Intestinal juice

∴ **Correct choice : (1)**

81. Which one of the following has maximum genetic diversity in India?

(1) Mango **(2)** Wheat **(3)** Tea **(4)** Teak

∴ **Correct choice : (2)**

82. Oxygenic photosynthesis occurs in:

(1) Oscillatoria **(2) Rhodospirillum**

(3) Chlorobium **(4) Chromatium**

∴ **Correct choice : (1)**

83. There is no DNA in:

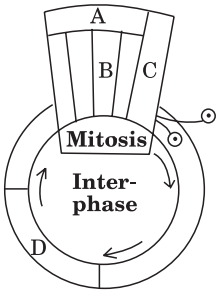
(1) Mature RBCs **(2)** A mature spermatozoan

(3) Hair root **(4)** An enucleated ovum

Sol: An enucleated ovum has DNA in mitochondria.

∴ **Correct choice : (1)**

84. Given below is a schematic break-up of the phases / stages of cell cycle:



Which one of the following is the **correct** indication of the stage/phase in the cell cycle ?

(1) C-Karyokinesis **(2)** D-Synthetic phase

(3) A-Cytokinesis **(4)** B-Metaphase

∴ **Correct choice : (2)**

85. Tiger is **not** a resident in which one of the following national park ?

(1) Sunderbans **(2)** Gir

(3) Jim Corbett **(4)** Ranthambhor

∴ **Correct choice : (2)**

86. Which one of the following statements is **true** regarding digestion and absorption of food in humans ?

(1) Fructose and amino acids are absorbed through intestinal mucosa with the help of carrier ions like Na^+.

(2) Chylomicrons are small lipoprotein particles that are transported from intestine into blood capillaries.

(3) About 60% of starch is hydrolysed by salivary amylase in our mouth.

(4) Oxyntic cells in our stomach secrete the proenzyme pepsinogen.

∴ **Correct choice : (1)**

87. Synapsis occurs between:

(1) mRNA and ribosomes **(2)** spindle fibres and centromere

(3) two homologous chromosomes **(4)** a male and a female gamete

∴ **Correct choice : (3)**

88. Given below is a diagrammatic sketch of a portion of human male reproductive system. Select the correct set of the names of the parts labelled A, B, C, D.

	A	B	C	D
(1)	vas deferens	seminal vesicle	prostate	bulbourethral gland
(2)	vas deferens	seminal vesicle	bulbourethral gland	prostate
(3)	ureter	seminal vesicle	prostate	bulbourethral gland
(4)	ureter	prostate	seminal vesicle	bulbourethral gland

∴ **Correct choice : (1)**

89. What is **not** true for genetic code?

(1) It is nearly universal

(2) It is degenerate

(3) It is unambiguous

(4) A codon in mRNA is read in a non-contiguous fashion

∴ **Correct choice : (4)**

90. Which one of the following plants is monoecious?

(1) Pinus **(2) Cycas** **(3)** Papaya **(4) Marchantia**

∴ **Correct choice : (1)**

91. Cyclic photophosphorylation results in the formation of

(1) ATP and NADPH **(2)** ATP, NADPH and O_2

(3) ATP **(4)** NADPH

∴ **Correct choice : (3)**

92. The letter T in T-lymphocyte refers to:

(1) Thalamus **(2)** Tonsil **(3)** Thymus **(4)** Thyroid

∴ **Correct choice : (3)**

93. Foetal ejection reflex in human female is induced by:

(1) release of oxytocin from pituitary

(2) fully developed foetus and placenta

(3) differentiation of mammary glands

(4) pressure exerted by amniotic fluid

∴ **Correct choice : (2)**

94. Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by

(1) Absence of secondary phloem **(2)** Presence of cortex

(3) Position of protoxylem **(4)** Absence of secondary xylem

∴ **Correct choice : (3)**

95. Plasmodesmata are :

(1) Locomotary structures

(2) Membranes connecting the nucleus with plasmalemma

(3) Connections between adjacent cells

(4) Lignified cemented layers between cells

∴ **Correct choice : (3)**

96. Removal of introns and joining the exons in a defined order in a transcription unit is called:

(1) Tailing **(2)** Transformation **(3)** Capping **(4)** Splicing

∴ **Correct choice : (4)**

97. Phylogenetic system of classification is based on :

(1) Morphological features **(2)** Chemical constituents

(3) Floral characters **(4)** Evolutionary relationships

∴ **Correct choice : (4)**

98. Which part of human brain is concerned with the regulation of body temperature?

(1) Cerebellum **(2)** Cerebrum

(3) Hypothalamus **(4)** Medulla Oblongata

∴ **Correct choice : (3)**

99. Semiconservative replication of DNA was first demonstrated in:

(1) Escherichia coli **(2) Streptococcus pneumoniae**

(3) Salmonella typhimurium **(4) Drosophila melanogaster**

∴ **Correct choice : (1)**

100. Which one of the following pairs of animals comprises 'jawless fishes'?

(1) Mackerals and Rohu **(2)** Lampreys and hag fishes

(3) Guppies and hag fishes **(4)** Lampreys and eels

∴ **Correct choice : (2)**

101. Which of the following is a pair of viral diseases ?

(1) Common Cold, AIDS **(2)** Dysentery, Common Cold

(3) Typhoid, Tuberculosis **(4)** Ringworm, AIDS

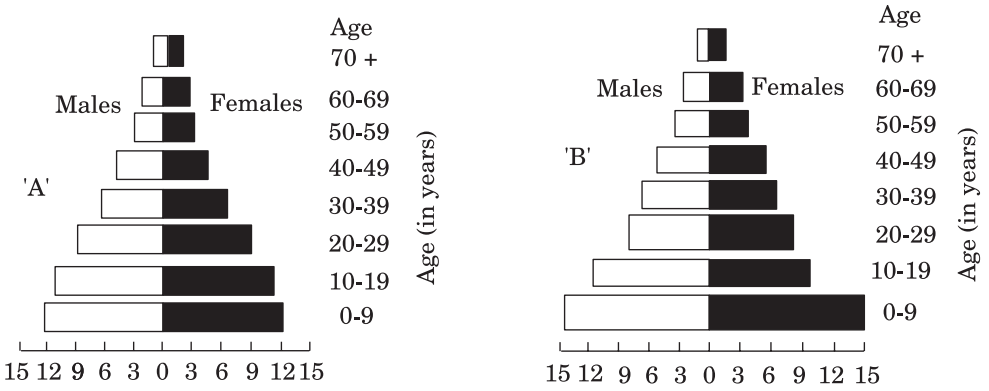
∴ **Correct choice : (1)**

102. Aerobic respiratory pathway is **appropriately** termed:

(1) Parabolic **(2)** Amphibolic **(3)** Anabolic **(4)** Catabolic

∴ **Correct choice : (2)**

103. A country with a high rate of population growth took measures to reduce it. The **Figure** below shows age-sex pyramids of populations A and B twenty years apart. Select the **correct** interpretation about them:



Interpretations:

(1) "B" is earlier pyramid and shows stabilised growth rate.

(2) "B" is more recent showing that population is very young.

(3) "A" is the earlier pyramid and no change has occurred in the growth rate.

(4) "A" is more recent and shows slight reduction in the growth rate.

∴ **Correct choice : (4)**

104. Cytoskeleton is made up of:

(1) Callose deposits **(2)** Cellulosic microfibrils

(3) Proteinaceous filaments **(4)** Calcium carbonate granules

Sol: Cytoskeleton is made up of microfilaments and microtubules whose major constituents are actin and tubulin respectively.

∴ **Correct choice : (3)**

105. An example of axile placentation is:

(1) Dianthus **(2)** Lemon **(3)** Marigold **(4) Argemone**

∴ **Correct choice : (2)**

106. Which one of the following has haplontic life cycle ?

(1) Polytrichum **(2) Ustilago**

(3) Wheat **(4) Funaria**

∴ **Correct choice : (2)**

107. Steps taken by the Government of India to control air pollution include:

(1) compulsory PUC (Pollution Under Control) certification of petrol driven vehicles which tests for carbon monoxide and hydrocarbons.

(2) permission to use only pure diesel with a maximum of 500 ppm sulphur as fuel for vehicles.

(3) use of non-polluting Compressed Natural Gas (CNG) only as fuel by all buses and trucks.

(4) compulsory mixing of 20% ethyl alcohol with petrol and 20% biodiesel with diesel.

∴ **Correct choice : (1)**

108. Which one of the following is considered important in the development of seed habit?

(1) Heterospory **(2)** Haplontic life cycle

(3) Free-living gametophyte **(4)** Dependent sporophyte

∴ **Correct choice : (1)**

109. The annular and spirally thickened conducting elements generally develop in the protoxylem when the root or stem is:

(1) elongating **(2)** widening **(3)** differentiating **(4)** maturing

∴ **Correct choice : (4)**

110. The **correct** sequence of plants in a hydrosere is:

(1) **Volvox** ⟶ **Hydrilla** ⟶ **Pistia** ⟶ **Scirpus** ⟶ **Lantana** ⟶ Oak

(2) **Pistia** ⟶ **Volvox** ⟶ **Scirpus** ⟶ **Hydrilla** ⟶ Oak ⟶ **Lantana**

(3) Oak ⟶ **Lantana** ⟶ **Volvox** ⟶ **Hydrilla** ⟶ **Pistia** ⟶ **Scirpus**

(4) Oak ⟶ **Lantana** ⟶ **Scirpus** ⟶ **Pistia** ⟶ **Hydrilla** ⟶ **Volvox**

∴ **Correct choice : (1)**

111. Stroma in the chloroplasts of higher plant contains:

(1) Light-dependent reaction enzymes

(2) Ribosomes

(3) Chlorophyll

(4) Light-independent reaction enzymes

∴ **Correct choice : (4)**

112. A health disorder that results from the deficiency of thyroxine in adults and characterised by (i) a low metabolic rate, (ii) increase in body weight and (iii) tendency to retain water in tissues is:

(1) simple goitre **(2)** myxoedema **(3)** cretinism **(4)** hypothyroidism

Sol: Deficiency of thyroxine in **adults** is specifically called **Myxoedema** characterised by low metabolic rate, increase in body weight and tendency to retain water in tissues.

∴ **Correct choice : (2)**

113. Mannitol is the stored food in:

(1) Porphyra **(2) Fucus** **(3) Gracillaria** **(4) Chara**

∴ **Correct choice : (2)**

114. Which one of the following pairs is **wrongly** matched ?

(1) Alcohol – nitrogenase **(2)** Fruit juice – pectinase

(3) Textile – amylase **(4)** Detergents – lipase

∴ **Correct choice : (1)**

115. Which of the following is **not** used as a biopesticide ?

(1) Trichoderma harzianum **(2)** Nuclear Polyhedrosis Virus (NPV)

(3) Xanthomonas campestris **(4) Bacillus thuringiensis**

∴ **Correct choice : (3)**

116. Which one of the following is a vascular cryptogam?

(1) Ginkgo **(2) Marchantia** **(3) Cedrus** **(4) Equisetum**

∴ **Correct choice : (4)**

117. In a standard ECG which one of the following alphabets is the **correct** representation of the respective activity of the human heart?

(1) S – start of systole **(2)** T – end of diastole

(3) P – depolarisation of the atria **(4)** R – repolarisation of ventricles

∴ **Correct choice : (3)**

118. Uric acid is the chief nitrogenous component of the excretory products of:

(1) Earthworm **(2)** Cockroach **(3)** Frog **(4)** Man

∴ **Correct choice : (2)**

119. Guard cells help in:

(1) Transpiration **(2)** Guttation

(3) Fighting against infection **(4)** Protection against grazing

∴ **Correct choice : (1)**

120. Montreal Protocol aims at:

(1) Biodiversity conservation

(2) Control of water pollution

(3) Control of CO_2 emission

(4) Reduction of ozone depleting substances

∴ **Correct choice : (4)**

121. DDT residues are rapidly passed through food chain causing biomagnification because DDT is:

(1) moderately toxic **(2)** non-toxic to aquatic animals

(3) water soluble **(4)** lipo soluble

∴ **Correct choice : (4)**

122. Vegetative propagation in mint occurs by:

(1) Offset **(2)** Rhizome **(3)** Sucker **(4)** Runner

∴ **Correct choice : (3)**

123. Select the **incorrect** statement from the following:

(1) Galactosemia is an inborn error of metabolism

(2) Small population size results in random genetic drift in a population

(3) Baldness is a sex-limited trait

(4) Linkage is an exception to the principle of independent assortment in heredity

∴ **Correct choice : (3)**

124. Cotyledons and testa respectively are edible parts in:

(1) walnut and tamarind **(2)** french bean and coconut

(3) cashew nut and litchi **(4)** groundnut and pomegranate

∴ **Correct choice : (4)**

125. Which one of the following statements is **correct** ?

(1) Benign tumours show the property of metastasis.

(2) Heroin accelerates body functions.

(3) Malignant tumours may exhibit metastasis.

(4) Patients who have undergone surgery are given cannabinoids to relieve pain.

∴ **Correct choice : (3)**

126. The **correct** sequence of spermatogenetic stages leading to the formation of sperms in a mature human testis is:

(1) spermatogonia – spermatocyte – spermatid – sperms

(2) spermatid – spermatocyte – spermatogonia – sperms

(3) spermatogonia – spermatid – spermatocyte – sperms

(4) spermatocyte – spermatogonia – spermatid – sperms

∴ **Correct choice : (1)**

127. Use of anti-histamines and steroids give a quick relief from:

(1) Nausea **(2)** Cough **(3)** Headache **(4)** Allergy

∴ **Correct choice : (4)**

128. Chipko movement was launched for the protection of:

(1) Forests **(2)** Livestock **(3)** Wet lands **(4)** Grasslands

∴ **Correct choice : (1)**

129. Which one of the following is the most likely root cause why menstruation is not taking place in regularly cycling human female ?

(1) maintenance of the hypertrophical endometrial lining

(2) maintenance of high concentration of sex hormones in the blood stream

(3) retention of well-developed corpus luteum

(4) fertilisation of the ovum

∴ **Correct choice : (4)**

130. Globulins contained in human blood plasma are primarily involved in:

(1) osmotic balance of body fluids **(2)** oxygen transport in the blood

(3) clotting of blood **(4)** defence mechanisms of body

∴ **Correct choice : (4)**

131. Palisade parenchyma is **absent** in leaves of :

(1) Mustard **(2)** Soybean **(3)** Gram **(4)** Sorghum

∴ **Correct choice : (4)**

132. In barley stem vascular bundles are:

(1) closed and scattered **(2)** open and in a ring

(3) closed and radial **(4)** open and scattered

∴ **Correct choice : (1)**

133. Which one of the following is the **correct** matching of three items and their grouping category ?

Items	Group
(1) ilium, ischium, pubis	– coxal bones of pelvic girdle
(2) actin, myosin, rhodopsin	– muscle proteins
(3) cytosine, uracil, thiamine	– pyrimidines
(4) malleus, incus, cochlea	– ear ossicles

∴ **Correct choice : (1)**

134. Somaclones are obtained by

(1) Plant breeding **(2)** Irradiation

(3) Genetic engineering **(4)** Tissue culture

∴ **Correct choice : (4)**

135. In the case of peppered moth **(Biston betularia)** the black-coloured form became dominant over the light-coloured form in England during industrial revolution. This is an example of :

(1) appearance of the darker coloured individuals due to very poor sunlight

(2) protective mimicry

(3) inheritance of darker colour character acquired due to the darker environment

(4) natural selection whereby the darker forms were selected

Sol: This is a phenomenon of industrial melanism. The moths rested during day time when their predators (birds) are active. During industrial revolution, the surrounding areas were covered with soot and hence dark forms got camouflaged. This offered protection to dark forms when coal was used. Later when electricity was source of energy the environment became lighter (absence of soot) and more of the paler forms of moth were sighted.

∴ **Correct choice : (2)**

136. Transgenic plants are the ones:

(1) generated by introducing foreign DNA into a cell and regenerating a plant from that cell.

(2) produced after protoplast fusion in artificial medium.

(3) grown in artificial medium after hybridization in the field.

(4) produced by a somatic embryo in artificial medium.

∴ **Correct choice : (1)**

137. Which one of the following pairs of food components in humans reaches the stomach totally undigested?

(1) Starch and fat **(2)** Fat and cellulose

(3) Starch and cellulose **(4)** Protein and starch

∴ **Correct choice : (2)**

138. A change in the amount of yolk and its distribution in the egg will affect:

(1) Pattern of cleavage

(2) Number of blastomeres produced

(3) Fertilization

(4) Formation of zygote

∴ **Correct choice : (1)**

139. Middle lamella is composed mainly of:

(1) Muramic acid **(2)** Calcium pectate

(3) Phosphoglycerides **(4)** Hemicellulose

∴ **Correct choice : (2)**

140. Elbow joint is an example of:

(1) hinge joint **(2)** gliding joint

(3) ball and socket joint **(4)** pivot joint

∴ **Correct choice : (1)**

141. Which of the following is a symbiotic nitrogen fixer ?

(1) Azotobacter **(2) Frankia** **(3) Azolla** **(4) Glomus**

∴ **Correct choice : (2)**

142. Whose experiments cracked the DNA and discovered unequivocally that a genetic code is a "triplet"?

(1) Hershey and Chase **(2)** Morgan and Sturtevant

(3) Beadle and Tatum **(4)** Nirenberg and Mathaei

∴ **Correct choice : (4)**

143. Which one of the following types of organisms occupy more than one trophic level in a pond ecosystem ?

(1) Fish **(2)** Zooplankton **(3)** Frog **(4)** Phytoplankton

Sol: Fish could be primary consumer as well as secondary consumer.

∴ **Correct choice : (1)**

144. Which one of the following acids is a derivative of carotenoids ?

(1) Indole-3-acetic acid **(2)** Gibberellic acid

(3) Abscisic acid **(4)** Indole butyric acid

∴ **Correct choice : (3)**

145. The bacterium **Bacillus thuringiensis is** widely used in contemporary biology as:

(1) Insecticide

(2) Agent for production of dairy products

(3) Source of industrial enzyme

(4) Indicator of water pollution

∴ **Correct choice : (1)**

146. An example of a seed with endosperm, perisperm, and caruncle is:

(1) coffee **(2)** lily **(3)** castor **(4)** cotton

∴ **Correct choice : (3)**

147. Reduction in vascular tissue, mechanical tissue and cuticle is characteristic of :

(1) Mesophytes **(2)** Epiphytes **(3)** Hydrophytes **(4)** Xerophytes

∴ **Correct choice : (3)**

148. Point mutation involves:

(1) Change in single base pair **(2)** Duplication

(3) Deletion **(4)** Insertion

∴ **Correct choice : (1)**

149. Which one of the following **correctly** describes the location of some body parts in the earthworm **Pheretima ?**

(1) Four pairs of spermathecae in 4 – 7 segments.

(2) One pair of ovaries attached at intersegmental septum of 14^{th} and 15^{th} segments.

(3) Two pairs of testes in 10^{th} and 11^{th} segments.

(4) Two pairs of accessory glands in 16 – 18 segments.

∴ **Correct choice : (3)**

150. The kind of tissue that forms the supportive structure in our pinna (external ears) is also found in:

(1) nails **(2)** ear ossicles **(3)** tip of the nose **(4)** vertebrae

∴ **Correct choice : (3)**