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Answer & Solutions

for

NEET 2022 (Re-Exam)

Botany

101. Given below are two statements :

Statement I :

Sickle cell anaemia and Haemophilia are autosomal dominant traits.

Statement II:

Sickle cell anaemia and Haemophilia are disorders of the blood.

In the light of the above statements, choose the correct answer from the options given below:

- (1) Statement I is incorrect but Statement II is correct
- (2) Both Statement I and Statement II are correct
- (3) Both Statement I and Statement II are incorrect
- (4) Statement I is correct but Statement II is incorrect

Answer (1)

102. Which stage of meiosis can last for months or years in the oocytes of some vertebrates?

- (1) Diakinesis
- (2) Leptotene
- (3) Pachytene
- (4) Diplotene

Answer (4)

103. Given below are two statements : one is labelled as Assertion {A} and the other is labelled as Reason (R).

Assertion (A) :

When a particular restriction enzyme cuts strand of DNA, overhanging stretches or sticky ends are formed.

Reason (R):

Some restriction enzymes cut the strand of DNA a little away from the centre of the palindromic site.

In the light of the above statements, choose the correct answer from the options given below

- (1) (A) is not correct but (R) is correct
- (2) Both (A) and (R) are correct and (R) is the correct explanation of (A)
- (3) Both (A) and (R) are correct but (R) is not the correct explanation of (A)
- (4) (A) is correct but (R) is not correct

Answer (2)

104. Give the correct descending order of organisms with reference to their estimated number found in Amazon forest.

- (a) Plants
- (b) Invertebrates
- (c) Fishes
- (d) Mammals
- (e) Birds

Choose the correct answer from the options given below

- (1) (b) > (a) > (c) > (e) > (d)
- (2) (a) > (b) > (e) > (d) > (c)
- (3) (a) > (c) > (d) > (b) > (e)
- (4) (b) > (a) > (e) > (d) > (c)

Answer (1)

105. In lac operon, z gene codes for :

- (1) Transacetylase
- (2) β -galactosidase
- (3) Permease
- (4) Repressor

Answer (2)

106. The 5-C compound formed during TCA cycle is:

- (1) Fumaric acid
- (2) α -ketoglutaric acid
- (3) Oxalo succinic acid
- (4) Succinic acid

Answer (2)

107. In meiosis, crossing over and exchange of material between homologous chromosomes catalyzed by the enzyme:

- (1) Polymerase
- (2) Phosphorylase
- (3) Recombinase
- (4) Transferase

Answer (3)

108. All successions irrespective of the habitat proceed to which type of climax community?

- (1) Edaphic
- (2) Xeric
- (3) Mesic
- (4) Hydrophytic

Answer (3)

109. When a carrier protein facilitates the movement of two molecules across the membrane in same direction, it is called :

- (1) Symport
- (2) Uniport
- (3) Transport
- (4) Antiport

Answer (1)

110. When one CO_2 molecule is fixed as one molecule of triose phosphate, which of the following photochemically made, high energy chemical intermediates are used in the reduction phase?

- (1) 2 ATP + 2 NADPH
- (2) 1 ATP + 1 NADPH
- (3) 1 ATP + 2 NADPH
- (4) 2 ATP + 1 NADPH

Answer (1)

111. The ability of plants to follow different pathways in response to environment leading to formation of different kinds of structures is called :

- (1) Differentiation
- (2) Redifferentiation
- (3) Development
- (4) Plasticity

Answer (4)

112. Match List -I with List -II :

List-I

List-II

- | | |
|--------------------------|-------------------|
| (a) <i>Chlamydomonas</i> | (i) Moss |
| (b) <i>Cycas</i> | (ii) Pteridophyte |
| (c) <i>Selaginella</i> | (iii) Alga |
| (d) <i>Sphagnum</i> | (iv) Gymnosperm |

Choose the correct answer from the options given below .

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

Answer (3)

113. Interfascicular cambium is present between

- (1) Secondary xylem and secondary phloem
- (2) Primary xylem and primary phloem
- (3) Pericycle and endodermis Two vascular bundles
- (4) Two vascular bundles

Answer (4)

114. Which of the following growth regulators is an adenine derivative ?

- (1) Absciscic acid
- (2) Auxin
- (3) Cytokinin
- (4) Ethylene

Answer (3)

115. The chromosomal theory of inheritance was proposed by

- (1) Robert Brown
- (2) Thomas Morgan
- (3) Sutton and Boveri
- (4) Gregor Mendel

Answer (3)

116. Which of the following statements is not correct?

- (1) The rhizome is thick, prostrate and branched
- (2) Rhizome is a condensed form of stem
- (3) The apical bud in rhizome always remains above the ground
- (4) The rhizome is aerial with no distinct nodes and internodes

Answer (4)

117. The phenomenon by which the undividing parenchyma cells start to divide mitotically during plant tissue culture is called as :

- (1) Secondary growth
- (2) Differentiation
- (3) Dedifferentiation
- (4) Redifferentiation

Answer (3)

118. Match List-I with List-II ;

List-I	List-II
(a) Adenine	(i) Pigment
(b) Anthocyanin	(ii) Polysaccharide
(c) Chitin	(iii) Alkaloid
(d) Codeine	(iv) Purine

Choose the correct answer from the options given below .

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

Answer (2)

119. The residual persistent part which forms the perisperm in the seeds of beet is :

- (1) Integument
- (2) Calyx
- (3) Endosperm
- (4) Nucellus

Answer (4)

120. The World Summit on sustainable development held in 2002 in Johannesburg, South Africa pledged for :

- (1) Collection and preservation of seeds of different genetic strains of commercially important plants.
- (2) A significant reduction in the current rate of biodiversity loss.
- (3) Declaration of more biodiversity hotspots.
- (4) Increase in agricultural production.

Answer (2)

121. The type of tissue commonly found in the fruit wall of nuts is

- (1) Sclereid
- (2) Parenchyma
- (3) Collenchyma
- (4) Sclerenchyma

Answer (1)

122. The pioneer species in a hydrarch succession are :

- (1) Filamentous algae
- (2) Free-floating angiosperms
- (3) Submerged rooted plants
- (4) Phytoplanktons

Answer (4)

123. Which of the following protects nitrogenase inside the root nodule of a leguminous plant ?

- (1) Glutamate dehydrogenase
- (2) Catalase
- (3) leg haemoglobin
- (4) Transaminase

Answer (3)

124. Given below are two statements .

Statement I :

DNA polymerases catalyses polymerisation only in one direction, that is 5' → 3'.

Statement II :

During replication of DNA, on one strand the replication is continuous while on the other strand it is discontinuous.

In the light of the above statements, choose the correct answer from the options given below

- (1) Statement I is incorrect but Statement II is correct
- (2) Both Statement I and Statement II are correct
- (3) Both Statement and Statement II are incorrect
- (4) Statement I is correct but Statement II is incorrect

Answer (2)

125. The species that come to appear in bare area are called

- (1) Species of seral community
- (2) Pioneer species
- (3) Invasive species
- (4) Competitive species

Answer (2)

126. Initiation of lateral roots and vascular cambium during secondary growth takes place in cells of

- (1) Pericycle
- (2) Epiblema
- (3) Cortex
- (4) Endodermis

Answer (1)

127. Match List - I with List - II

List - I	List - II
(a) In lac operon i gene codes for	(i) transacetylase
(b) In lac operon z gene codes for	(ii) permease
(c) In lac operon y gene codes for	(iii) β -galactosidase
(d) In lac operon a gene codes for	(iv) Repressor

Choose the correct answer from the options given below.

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

Answer (3)

128. To ensure that only the desired pollens fall on the stigma in artificial hybridization process

- (a) the female flower buds of plant producing unisexual flowers need not be bagged.
- (b) there is no need to emasculate unisexual flowers of selected female parent
- (c) emasculated flowers are to be bagged immediately after cross pollination
- (d) emasculated flowers are to be bagged after removal of anthers bisexual flowers, showing protogyny are never selected for cross

Choose the correct answer from the options given below :

- (1) (a), (d) and (e) only
- (2) (a), (b) and (c) only
- (3) (b), (c) and (d) only
- (4) (b), (c) and (e) only

Answer (3)

129. The ascent of xylem sap in plants is mainly accomplished by the.

- (1) root pressure
- (2) size of the stomatal aperture
- (3) distribution of stomata on the upper and lower epidermis
- (4) cohesion and adhesion between water molecules

Answer (4)

130. Match List - I with List - II :

List - I	List - II
(a) Imbricate	(i) Calotropis
(b) Valvate	(ii) Cassia
(c) Vexillary	(iii) Cotton
(d) Twisted	(iv) Bean

Choose the correct answer from the options given below:

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

Answer (3)

131. The number of time(s) decarboxylation of isocitrate occurs during single TCA cycle is:

- (1) Four
- (2) One
- (3) Two
- (4) Three

Answer (2)

132. Match List - I with List - II:

List - I	List - II
(a) Porins	(i) Pink coloured nodules
(b) leg haemoglobin	(ii) Lumen of thylakoid
(c) H^+ accumulation	(iii) Amphibolic pathway
(d) Respiration	(iv) Huge pores in outer membrane of mitochondria

Choose the correct answer from the options given below :

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

Answer (3)

133. Separation of DNA fragments is done by a technique known as

- (1) Gel electrophoresis
- (2) Polymerase Chain Reaction
- (3) Recombinant technology
- (4) Southern blotting

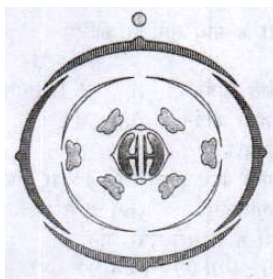
Answer (1)

134. In general the egg apparatus of embryo sac in angiosperm consists of

- (1) One egg cell, two synergids, two antipodal cells, two Polar nuclei
- (2) One egg cell, two synergids, three antipodal cells, two Polar nuclei
- (3) One egg cell, two synergids, two antipodal cells, three Polar nuclei
- (4) One egg cell, three synergids, two antipodal cells, two Polar nuclei

Answer (N/A)

135. The Floral Diagram represents which one of the following families



- (1) Liliaceae
- (2) Fabaceae
- (3) Brassicaceae
- (4) Solanaceae

Answer (3)

Botany : Section-B (Q. No. 136 to 150)

136. Primary proteins are also called as polypeptides because :

- (1) They can assume many conformations
- (2) They are linear chains
- (3) They are polymers of peptide monomers
- (4) Successive amino acids are joined by peptide bonds

Answer (4)

137. Match List-I with List-II :

List-I	List-II
(a) Bacteriophage ϕ X174	(i) 48502 base pairs
(b) Bacteriophage Lambda	(ii) 5386 nucleotides
(c) <i>Escherichia coli</i>	(iii) 3.3×10^9 Base pairs
(d) Haploid content Of human DNA	(iv) 4.6×10^6 base pairs

Choose the correct answer from the options given below :

- (1) (a)-(i), (b)-(ii), (c)-(iv), (d)-(iii)
- (2) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

(3) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

(4) (a)-(ii), (b)-(i), (c)-(iv), (d)-(iii)

Answer (4)

138. Which type of substance would face difficulty to pass through the cell membrane?

- (1) Substance soluble in lipids
- (2) Substance with hydrophobic moiety
- (3) Substance with hydrophilic moiety
- (4) All substance irrespective of hydrophobic and hydrophilic moiety

Answer (3)

139. What is the expected percentage of F₂ progeny with yellow and inflated pod in dihybrid cross experiment involving pea plants with green coloured, inflated pod and yellow coloured constricted pod?

- (1) 9%
- (2) 100%
- (3) 56.25%
- (4) 18.75%

Answer (4)

140. Match List-I with List-II :

List-I	List-II
(a) Carbon dissolved	(i) 55 billion tons
(b) Annual fixation of Carbon through Photosynthesis	(ii) 71%
(c) PAR captured by Plants	(iii) 4×10^3 kg
(d) Productivity of oceans	(iv) 2 to 10%

Choose the correct answer from the options given below:

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

Answer (4)

141. If a female individual is with small round head, furrowed tongue, partially open mouth and broad palm with characteristic palm crease. Also the physical, psychomotor and mental development is retarded. The karyotype analysis of such an individual will show

- (1) Trisomy of chromosome 21
- (2) 47 chromosomes with XXY sex chromosomes

- (3) 45 chromosomes with XO sex chromosomes
 (4) 47 Chromosomes with XYY sex chromosomes

Answer (1)

142. Read the following statements and identify the characters related to the alga shown in the diagram



- (a) It is a member of Chlorophyceae
 (b) Food is stored in the form of starch
 (c) It is a monoecious plant showing oogonium and antheridium
 (d) Food is stored in the form of laminarin or mannitol
 (e) It shows dominance of pigments Chlorophyll a, c and Fucoxanthin

Choose the correct answer from the options given below :

- (1) (c), (d) and (e) only
 (2) (a) and (b) only
 (3) (a), (b) and (c) only
 (4) (a), (c) and (d) only

Answer (3)

143. Match List - I with List - II :

List-I	List-II
(a) Sacred groves	(i) Alien species
(b) Zoological park	(ii) Release of large quantity of oxygen
(c) Nile perch	(iii) Ex-situ conservation
(d) Amazon forest	(iv) Khasi Hills in Meghalaya

Choose the correct answer from the options given below:

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

Answer (2)

144. The enzyme (a) is needed for isolating genetic material from plant cells and enzyme (b) for isolating genetic material from fungus. Choose the correct pair of options from the following:

- (1) (a) Cellulase (b) Lipase
 (2) (a) Cellulase (b) Protease
 (3) (a) Cellulase (b) Chitinase
 (4) (a) Chitinase (b) Lipase

Answer (3)

145. Identify the correct sequence of events during Prophase I of meiosis :

- (a) Synapsis of homologous chromosomes
 (b) Chromosomes become gradually visible under microscope
 (c) Crossing over between non-sister chromatids of homologous chromosomes
 (d) Terminalisation of chiasmata
 (e) Dissolution of synaptonemal complex

Choose the correct answer from the options given below:

- (1) (a), (c), (d), (e), (b)
 (2) (a), (b), (c), (d), (e)
 (3) (b), (c), (d), (e), (a)
 (4) (b), (a), (c), (e), (d)

Answer (4)

146. Which of the following pair represents free living nitrogen fixing aerobic bacteria?

- (1) *Pseudomonas* and *Thiobacillus*
 (2) *Rhizobium* and *Beijernickia*
 (3) *Azotobacter* and *Beijernickia*
 (4) *Anabaena* and *Rhodospirillum*

Answer (3)

147. Frugivorous birds are found in large numbers in tropical forests mainly because of :

- (1) temperature conducive for their breeding
 (2) lack of niche specialisation
 (3) higher annual rainfall
 (4) availability of fruits throughout the year

Answer (4)

148. Identify the correct statements regarding chemiosmotic hypothesis:

- (a) Splitting of the water molecule takes place on the inner side of the membrane.

- (b) Protons accumulate within the lumen of the thylakoids.
- (c) Primary acceptor of electron transfers the electrons to an electron carrier.
- (d) NADP reductase enzyme is located on the stroma side of the membrane.
- (e) Protons increase in number in stroma.

Choose the correct answer from the options given below :

- (1) (b), (c) and (e)
- (2) (a), (b) and (e)
- (3) (a), (b) and (d)
- (4) (b), (c) and (d)

Answer (3)

149. Match List-I with List-II :

List-I	List-II
(a) Gene gun	(i) Replacement of a faulty gene by a normal healthy gene
(b) Gene therapy	(ii) Used for transfer of Gene
(c) Gene cloning	(iii) Total DNA in the cells of an organism
(d) Genome	(iv) To obtain identical copies of a particular DNA molecule

Choose the correct answer from the options given below :

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

Answer (2)

150. Which of the following can be expected if scientists succeed in introducing apomictic gene varieties of crops

- (1) There will be segregation of the desired characters only in the progeny
- (2) Polyembryony will be seen and each seed will produce many plantlets
- (3) Seeds of hybrid plants will show longer dormancy
- (4) Farmers can keep on using the seeds produced by the hybrids to raise new crop year after year

Answer (4)

