FINAL NEET(UG)–2024 (EXAMINATION)

(Held On Sunday 5th MAY, 2024)

BIOLOGY — TEST PAPER WITH ANSWER

Botany : Section-A (Q. No. 101 to 135)

101. Lecithin, a small molecular weight organic compound found in living tissues, is an example of :

(1) Amino acids (2) Phospholipids
(3) Glycerides (4) Carbohydrates

Ans. (2)

102. Which of the following are required for the dark reaction of photosynthesis?

A. Light B. Chlorophyll
C. CO_2 D. ATP
E. NADPH

Choose the correct answers from the options given below:

(1) A, B and C only (2) B, C and D only
(3) C, D and E only (4) D and E only

Ans. (3)

103. Spindle fibers attach to kinetochores of chromosomes during

(1) Prophase (2) Metaphase
(3) Anaphase (4) Telophase

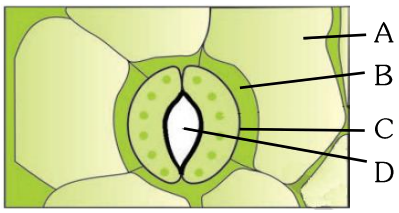
Ans. (2)

104. Bulliform cells are responsible for

(1) Inward curling of leaves in monocots.
(2) Protecting the plant from salt stress.
(3) Increased photosynthesis in monocots.
(4) Providing large spaces for storage of sugars.

Ans. (1)

105. In the given figure, which component has thin outer walls and highly thickened inner walls?



(1) C (2) D
(3) A (4) B

Ans. (1)

106. What is the fate of a piece of DNA carrying only gene of interest which is transferred into an alien organism?

A. The piece of DNA would be able to multiply itself independently in the progeny cells of the organism.
B. It may get integrated into the genome of the recipient.
C. It may multiply and be inherited along with the host DNA.
D. The alien piece of DNA is not an integral part of chromosome.
E. It shows ability to replicate.

Choose the correct answer from the options given below:

(1) A and B only
(2) D and E only
(3) B and C only
(4) A and E only

Ans. (3)

107. Given below are two statements:

Statement I : Bt toxins are insect group specific and coded by a gene *cry* IAc.

Statement II : Bt toxin exists as inactive protoxin in *B. thuringiensis*. However, after ingestion by the insect the inactive protoxin gets converted into active form due to acidic pH of the insect gut.

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

(1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true but Statement II is false
(4) Statement I is false but Statement II is true

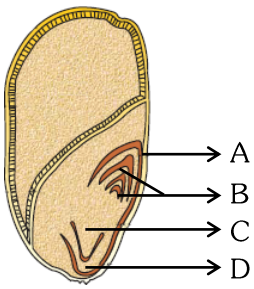
Ans. (3)

108. List of endangered species was released by-

(1) GEAC (2) WWF
(3) FOAM (4) IUCN

Ans. (4)

109. Identify the part of the seed from the given figure which is destined to form root when the seed germinates.



(1) A (2) B
(3) C (4) D

Ans. (3)

110. Match List I with List II.

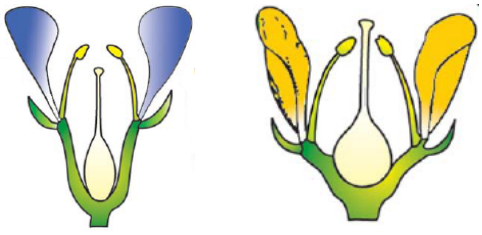
List I		List II	
A.	*Clostridium butylicum*	I.	Ethanol
B.	*Saccharomyces cerevisiae*	II.	Streptokinase
C.	*Trichoderma polysporum*	III.	Butyric acid
D.	*Streptococcus* sp.	IV.	Cyclosporin-A

Choose the correct answer from the options given below:

(1) A-III, B-I, C-II, D-IV
(2) A-II, B-IV, C-III, D-I
(3) A-III, B-I, C-IV, D-II
(4) A-IV, B-I, C-III, D-II

Ans. (3)

111. Identify the type of flowers based on the position of calyx, corolla and androecium with respect to the ovary from the given figures (a) and (b).



(a) (b)

(1) (a) Epigynous; (b) Hypogynous
(2) (a) Hypogynous; (b) Epigynous
(3) (a) Perigynous; (b) Epigynous
(4) (a) Perigynous; (b) Perigynous

Ans. (4)

112. Auxin is used by gardeners to prepare weed-free lawns. But no damage is caused to grass as auxin

(1) promotes apical dominance.
(2) promotes abscission of mature leaves only.
(3) does not affect mature monocotyledonous plants.
(4) can help in cell division in grasses, to produce growth.

Ans. (3)

113. A pink flowered Snapdragon plant was crossed with a red flowered Snapdragon plant. What type of phenotype/s is/are expected in the progeny?

(1) Only red flowered plants
(2) Red flowered as well as pink flowered plants
(3) Only pink flowered plants
(4) Red, Pink as well as white flowered plants

Ans. (2)

114. Which one of the following is not a criterion for classification of fungi?

(1) Morphology of mycelium
(2) Mode of nutrition
(3) Mode of spore formation
(4) Fruiting body

Ans. (2)

115. The lactose present in the growth medium of bacteria is transported to the cell by the action of:

(1) Beta-galactosidase
(2) Acetylase
(3) Permease
(4) Polymerase

Ans. (3)

116. In a plant, black seed color (BB/Bb) is dominant over white seed color (bb). In order to find out the genotype of the black seed plant, with which of the following genotype will you cross it?

(1) BB
(2) bb
(3) Bb
(4) BB/Bb

Ans. (2)

117. Given below are two statements:

Statement I : Parenchyma is living but collenchyma is dead tissue.

Statement II : Gymnosperms lack xylem vessels but presence of xylem vessels is the characteristic of angiosperms.

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

(1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true but Statement II is false
(4) Statement I is false but Statement II is true

Ans. (4)

118. How many molecules of ATP and NADPH are required for every molecule of CO_2 fixed in the Calvin cycle?

(1) 2 molecules of ATP and 3 molecules of NADPH.
(2) 2 molecules of ATP and 2 molecules of NADPH.
(3) 3 molecules of ATP and 3 molecules of NADPH.
(4) 3 molecules of ATP and 2 molecules of NADPH.

Ans. (4)

119. A transcription unit in DNA is defined primarily by the three regions in DNA and these are with respect to upstream and down stream end;

(1) Repressor, Operator gene, Structural gene
(2) Structural gene, Transposons, Operator gene
(3) Inducer, Repressor, Structural gene
(4) Promotor, Structural gene, Terminator

Ans. (4)

120. Tropical regions show greatest level of species richness because

A. Tropical latitudes have remained relatively undisturbed for millions of years, hence more time was available for species diversification.
B. Tropical environments are more seasonal.
C. More solar energy is available in tropics.
D. Constant environments promote niche specialization.
E. Tropical environments are constant and predictable.

Choose the correct answer from the options given below:

(1) A, C, D and E only (2) A and B only
(3) A, B and E only (4) A, B and D only

Ans. (1)

121. The equation of Verhulst-Pearl logistic growth is

$$\frac{dN}{dt} = rN\left[\frac{K-N}{K}\right]$$

From this equation, K indicates :

(1) Intrinsic rate of natural increase
(2) Biotic potential
(3) Carrying capacity
(4) Population density

Ans. (3)

122. Inhibition of Succinic dehydrogenase enzyme by malonate is a classical example of :

(1) Cofactor inhibition (2) Feedback inhibition
(3) Competitive inhibition (4) Enzyme activation

Ans. (3)

123. Which one of the following can be explained on the basis of Mendel's Law of Dominance?

A. Out of one pair of factors one is dominant and the other is recessive.
B. Alleles do not show any expression and both the characters appear as such in F_2 generation.
C. Factors occur in pairs in normal diploid plants.
D. The discrete unit controlling a particular character is called factor.
E. The expression of only one of the parental characters is found in a monohybrid cross.

Choose the correct answer from the options given below :

(1) A, B and C only (2) A, C, D and E only
(3) B, C and D only (4) A, B, C, D and E

Ans. (2)

124. Match List I with List II

	List I		List II
A.	Nucleolus	I.	Site of formation of glycolipid
B.	Centriole	II.	Organization like the cartwheel
C.	Leucoplasts	III.	Site for active ribosomal RNA synthesis
D.	Golgi apparatus	IV.	For storing nutrients

Choose the correct answer from the options given below :

(1) A-III, B-II, C-IV, D-I (2) A-II, B-III, C-I, D-IV
(3) A-III, B-IV, C-II, D-I (4) A-I, B-II, C-III, D-IV

Ans. (1)

125. Identify the set of correct statements :

A. The flowers of *Vallisneria* are colourful and produce nectar.
B. The flowers of waterlily are not pollinated by water.
C. In most of water-pollinated species, the pollen grains are protected from wetting.
D. Pollen grains of some hydrophytes are long and ribbon like.
E. In some hydrophytes, the pollen grains are carried passively inside water.

Choose the correct answer from the options given below :

(1) C, D and E only (2) A, B, C and D only
(3) A, C, D and E only (4) B, C, D and E only

Ans. (4)

126. Match List-I with List-II

	List-I		List-II
A.	*Rhizopus*	I.	Mushroom
B.	*Ustilago*	II.	Smut fungus
C.	*Puccinia*	III.	Bread mould
D.	*Agaricus*	IV.	Rust fungus

Choose the correct answer from the options given below :

(1) A-III, B-II, C-IV, D-I (2) A-I, B-III, C-II, D-IV
(3) A-III, B-II, C-I, D-IV (4) A-IV, B-III, C-II, D-I

Ans. (1)

127. Hind II always cuts DNA molecules at a particular point called recognition sequence and it consists of :

(1) 8 bp (2) 6 bp
(3) 4 bp (4) 10 bp

Ans. (2)

128. Which of the following is an example of actinomorphic flower ?

(1) *Datura* (2) *Cassia*
(3) *Pisum* (4) *Sesbania*

Ans. (1)

129. The type of conservation in which the threatened species are taken out from their natural habitat and placed in special setting where they can be protected and given special care is called ;

(1) *in-situ* conservation
(2) Biodiversity conservation
(3) Semi-conservative method
(4) Sustainable development

Ans. (2)

130. Given below are two statements :

Statement-I : Chromosomes become gradually visible under light microscope during leptotene stage.

Statement-II : The begining of diplotene stage is recognized by dissolution of synaptonemal complex.

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

(1) Both Statement-I and Statement-II are true
(2) Both Statement-I and Statement-II are false
(3) Statement-I is true but Statement-II is false
(4) Statement-I is false but Statement-II is true

Ans. (1)

131. Formation of interfascicular cambium from fully developed parenchyma cells is an example for

(1) Differentiation (2) Redifferentiation
(3) Dedifferentiation (4) Maturation

Ans. (3)

132. The capacity to generate a whole plant from any cell of the plant is called :

(1) Totipotency (2) Micropropagation
(3) Differentiation (4) Somatic hybridization

Ans. (1)

133. Match List I with List II

	List I		List II
A.	Two or more alternative forms of a gene	I.	Back cross
B.	Cross of F_1 progeny with homozygous recessive parent	II.	Ploidy
C.	Cross of F_1 progeny with any of the parents	III.	Allele
D.	Number of chromosome sets in plant	IV.	Test cross

Choose the correct answer from the options given below:

(1) A–I, B–II, C–III, D–IV
(2) A–II, B–I, C–III, D–IV
(3) A–III, B–IV, C–I, D–II
(4) A–IV, B–III, C–II, D–I

Ans. (3)

134. The cofactor of the enzyme carboxypeptidase is :

(1) Zinc (2) Niacin
(3) Flavin (4) Haem

Ans. (1)

135. These are regarded as major causes of biodiversity loss :

A. Over exploitation
B. Co-extinction
C. Mutation
D. Habitat loss and fragmentation
E. Migration

Choose the correct option :

(1) A, C and D only (2) A, B, C and D only
(3) A, B and E only (4) A, B and D only

Ans. (4)

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

136. Match List I with List II

	List I (Types of Stamens)		List II (Example)
A.	Monoadelphous	I.	Citrus
B.	Diadelphous	II.	Pea
C.	Polyadelphous	III.	Lily
D.	Epiphyllous	IV.	China-rose

Choose the correct answer from the options given below:

(1) A–IV, B–II, C–I, D–III
(2) A–IV, B–I, C–II, D–III
(3) A–I, B–II, C–IV, D–III
(4) A–III, B–I, C–IV, D–II

Ans. (1)

137. Match List I with List II

	List I		List II
A.	GLUT-4	I.	Hormone
B.	Insulin	II.	Enzyme
C.	Trypsin	III.	Intercellular ground substance
D.	Collagen	IV.	Enables glucose transport into cells

Choose the correct answer from the options given below:

(1) A–IV, B–I, C–II, D–III
(2) A–I, B–II, C–III, D–IV
(3) A–II, B–III, C–IV, D–I
(4) A–III, B–IV, C–I, D–II

Ans. (1)

138. Identify the step in tricarboxylic acid cycle, which does not involve oxidation of substrate.

(1) Malic acid → Oxaloacetic acid
(2) Succinic acid → Malic acid
(3) Succinyl-CoA → Succinic acid
(4) Isocitrate → α-ketoglutaric acid

Ans. (3)

139. Match List I with List II

	List I		List II
A.	Citric acid cycle	I.	Cytoplasm
B.	Glycolysis	II.	Mitochondrial matrix
C.	Electron transport system	III.	Intermembrane space of mitochondria
D.	Proton gradient	IV.	Inner mitochondrial membrane

Choose the correct answer from the options given below:

(1) A–I, B–II, C–III, D–IV
(2) A–II, B–I, C–IV, D–III
(3) A–III, B–IV, C–I, D–II
(4) A–IV, B–III, C–II, D–I

Ans. (2)

140. Match List I with List II

	List I		List II
A.	Frederick Griffith	I.	Genetic code
B.	Francois Jacob & Jacque Monod	II.	Semi-conservative mode of DNA replication
C.	Har Gobind Khorana	III.	Transformation
D.	Meselson & Stahl	IV.	*Lac* operon

Choose the correct answer from the options given below:

(1) A–III, B–II, C–I, D–IV
(2) A–III, B–IV, C–I, D–II
(3) A–II, B–III, C–IV, D–I
(4) A–IV, B–I, C–II, D–III

Ans. (2)

141. Given below are two statements :

Statement I : In C_3 plants, some O_2 binds to RuBisCO, hence CO_2 fixation is decreased.

Statement II : In C_4 plants, mesophyll cells show very little photorespiration while bundle sheath cells do not show photorespiration.

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

(1) Both Statement I and Statement II are true
(2) Both Statement I and Statement II are false
(3) Statement I is true but Statement II is false
(4) Statement I is false but Statement II is true

Ans. (3)

142. Identify the correct description about the given figure :

(1) Wind pollinated plant inflorescence showing flowers with well exposed stamens.
(2) Water pollinated flowers showing stamens with mucilaginous covering.
(3) Cleistogamous flowers showing autogamy
(4) Compact inflorescence showing complete autogamy.

Ans. (1)

143. Match List I with List II

	List I		List II
A.	Rose	I.	Twisted aestivation
B.	Pea	II.	Perigynous flower
C.	Cotton	III.	Drupe
D.	Mango	IV.	Marginal placentation

Choose the correct answer from the options given below :

(1) A-II, B-IV, C-I, D-III
(2) A-I, B-II, C-III, D-IV
(3) A-IV, B-III, C-II, D-I
(4) A-II, B-III, C-IV, D-I

Ans. (1)

144. Read the following statements and choose the set of correct statements :

In the members of Phaeophyceae,

A. Asexual reproduction occurs usually by biflagellate zoospores.
B. Sexual reproduction is by oogamous method only.
C. Stored food is in the form of carbohydrates which is either mannitol or laminarin.
D. The major pigments found are chlorophyll a, c and carotenoids and xanthophyll.
E. Vegetative cells have a cellulosic wall, usually covered on the outside by gelatinous coating of algin.

Choose the correct answer from the options given below :

(1) A, B, C and D only
(2) B, C, D and E only
(3) A, C, D and E only
(4) A, B, C and E only

Ans. (3)

145. In an ecosystem if the Net Primary Productivity (NPP) of first trophic level is $100\ x\ (kcal\ m^{-2})\ yr^{-1}$, what would be the GPP (Gross Primary Productivity) of the third trophic level of the same ecosystem ?

(1) $\frac{x}{10}(kcal\ m^{-2})yr^{-1}$ (2) $x(kcal\ m^{-2})yr^{-1}$

(3) $10x(kcal\ m^{-2})yr^{-1}$ (4) $\frac{100x}{3x}(kcal\ m^{-2})yr^{-1}$

Ans. (3)

146. Which of the following statement is **correct** regarding the process of replication in *E.coli*?

(1) The DNA dependent DNA polymerase catalyses polymerization in one direction that is 3' → 5'
(2) The DNA dependent RNA polymerase catalyses polymerization in one direction, that is 5' → 3'
(3) The DNA dependent DNA polymerase catalyses polymerization in 5' → 3' as well as 3' → 5' direction
(4) The DNA dependent DNA polymerase catalyses polymerization in 5' → 3' direction.

Ans. (4)

147. Which of the following are fused in somatic hybridization involving two varieties of plants ?

(1) Callus
(2) Somatic embryos
(3) Protoplasts
(4) Pollens

Ans. (3)

148. Spraying sugarcane crop with which of the following plant growth regulators, increases the length of stem, thus, increasing the yield ?

(1) Auxin
(2) Gibberellin
(3) Cytokinin
(4) Abscisic acid

Ans. (2)

149. Match List I with List II

	List I		**List II**
A.	Robert May	I.	Species-Area relationship
B.	Alexander von Humboldt	II.	Long term ecosystem experiment using out door plots
C.	Paul Ehrlich	III.	Global species diversity at about 7 million
D.	David Tilman	IV.	Rivet popper hypothesis

Choose the correct answer from the options given below :

(1) A-II, B-III, C-I, D-IV
(2) A-III, B-I, C-IV, D-II
(3) A-I, B-III, C-II, D-IV
(4) A-III, B-IV, C-II, D-I

Ans. (2)

150. The DNA present in chloroplast is :

(1) Linear, double stranded
(2) Circular, double stranded
(3) Linear, single stranded
(4) Circular, single stranded

Ans. (2)

Zoology : Section-A (Q. No. 151 to 185)

151. Match List I with List II :

	List I		**List II**
A.	Common cold	I.	*Plasmodium*
B.	Haemozoin	II.	Typhoid
C.	Widal test	III.	Rhinoviruses
D.	Allergy	IV.	Dust mites

Choose the correct answer from the options given below:

(1) A-II, B-IV, C-III, D-I (2) A-I, B-III, C-II, D-IV
(3) A-III, B-I, C-II, D-IV (4) A-IV, B-II, C-III, D-I

Ans. (3)

152. Match List I with List II :

	List I		**List I**
A.	Cocaine	I.	Effective sedative in surgery
B.	Heroin	II.	*Cannabis sativa*
C.	Morphine	III.	*Erythroxylum*
D.	Marijuana	IV.	*Papaver somniferum*

Choose the correct answer from the options given below:

(1) A-IV, B-III, C-I, D-II
(2) A-I, B-III, C-II, D-IV
(3) A-II, B-I, C-III, D-IV
(4) A-III, B-IV, C-I, D-II

Ans. (4)

153. Match List I with List II :

	List I		**List II**
A.	Fibrous joints	I.	Adjacent vertebrae, limited movement
B.	Cartilaginous joints	II.	Humerus and Pectoral girdle, rotational
C.	Hinge joints	III.	Skull, don't allow any movement
D.	Ball and socket joints	IV.	Knee, help in locomotion

Choose the correct answer from the options given below:

(1) A-IV, B-II, C-III, D-I
(2) A-I, B-III, C-II, D-IV
(3) A-II, B-III, C-I, D-IV
(4) A-III, B-I, C-IV, D-II

Ans. (4)

154. Which of the following are Autoimmune disorders?

A. Myasthenia gravis
B. Rheumatoid arthritis
C. Gout
D. Muscular dystrophy
E. Systemic Lupus Erythematosus (SLE)

Choose the most appropriate answer from the options given below:

(1) A, B & D only (2) A, B & E only
(3) B, C & E only (4) C, D & E only

Ans. (2)

155. Which of the following is not a component of Fallopian tube?

(1) Uterine fundus (2) Isthmus
(3) Infundibulum (4) Ampulla

Ans. (1)

156. The flippers of the Penguins and Dolphins are the example of the

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

Ans. (3)

157. Match List I with List II :

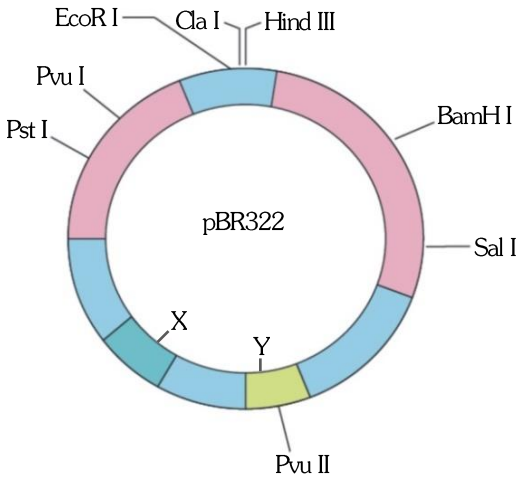
	List I		List II
A.	α-1 antitrypsin	I.	Cotton bollworm
B.	Cry IAb	II.	ADA deficiency
C.	Cry IAc	III.	Emphysema
D.	Enzyme replacement therapy	IV.	Corn borer

Choose the correct answer from the options given below:

(1) A-II, B-I, C-IV, D-III
(2) A-III, B-I, C-II, D-IV
(3) A-III, B-IV, C-I, D-II
(4) A-II, B-IV, C-I, D-III

Ans. (3)

158. The following diagram showing restriction sites in *E.coli* cloning vector pBR322. Find the role of '*X*' and '*Y*' genes.



(1) The gene '*X*' is responsible for resistance to antibiotics and '*Y*' for protein involved in the replication of Plasmid.
(2) The gene '*X*' is responsible for controlling the copy number of the linked DNA and '*Y*' for protein involved in the replication of Plasmid.
(3) The gene '*X* ' is for protein involved in replication of Plasmid and '*Y* ' for resistance to antibiotics.
(4) Gene '*X*' is responsible for recognition sites and '*Y*' is responsible for antibiotic resistance.

Ans. (2)

159. Given below are two statements : one is labelled as Assertion A and the other is labelled as Reason R:

Assertion A : Breast-feeding during initial period of infant growth is recommended by doctors for bringing a healthy baby.

Reason R : Colostrum contains several antibodies absolutely essential to develop resistance for the new born baby.

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

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

Ans. (1)

160. The "Ti plasmid" of *Agrobacterium tumefaciens* stands for
(1) Tumour inhibiting plasmid
(2) Tumor independent plasmid
(3) Tumor inducing plasmid
(4) Temperature independent plasmid

Ans. (3)

161. Match List I with List II :

List I		List II	
A.	Pleurobrachia	I.	Mollusca
B.	Radula	II.	Ctenophora
C.	Stomochord	III.	Osteichthyes
D.	Air bladder	IV.	Hemichordata

Choose the correct answer from the options given below :
(1) A-IV, B-II, C-III, D-I
(2) A-II, B-I, C-IV, D-III
(3) A-II, B-IV, C-I, D-III
(4) A-IV, B-III, C-II, D-I

Ans. (2)

162. Given below are some stages of human evolution.
Arrange them in correct sequence (Past to Recent)
A. *Homo habilis*
B. *Homo sapiens*
C. *Homo neanderthalensis*
D. *Homo erectus*
Choose the correct sequence of human evolution from the options given below :
(1) D-A-C-B (2) B-A-D-C
(3) C-B-D-A (4) A-D-C-B

Ans. (4)

163. Which of the following is not a steroid hormone ?
(1) Cortisol (2) Testosterone
(3) Progesterone (4) Glucagon

Ans. (4)

164. In both sexes of cockroach, a pair of jointed filamentous structures called anal cerci are present on :
(1) 5^{th} segment (2) 10^{th} segment
(3) 8^{th} and 9^{th} segment (4) 11^{th} segment

Ans. (2)

165. Which one of the following factors will not affect the Hardy-Weinberg equilibrium ?
(1) Genetic recombination
(2) Genetic drift
(3) Gene migration
(4) Constant gene pool

Ans. (4)

166. Match List I with List II :

List I		List II	
A.	Pons	I.	Provides additional space for Neurons, regulates posture and balance.
B.	Hypothalamus	II.	Controls respiration and gastric secretions
C.	Medulla	III.	Connects different regions of the brain
D.	Cerebellum	IV.	Neuro secretory cells

Choose the correct answer from the options given below :
(1) A-II, B-III, C-I, D-IV
(2) A-III, B-IV, C-II, D-I
(3) A-I, B-III, C-II, D-IV
(4) A-II, B-I, C-III, D-IV

Ans. (2)

167. Match List I with List II :

List I		List II	
A.	Down's syndrome	I.	11^{th} chromosome
B.	α-Thalassemia	II.	'X' chromosome
C.	β-Thalassemia	III.	21^{st} chromosome
D.	Klinefelter's syndrome	IV.	16^{th} chromosome

Choose the correct answer from the options given below :
(1) A-I, B-II, C-III, D-IV
(2) A-II, B-III, C-IV, D-I
(3) A-III, B-IV, C-I, D-II
(4) A-IV, B-I, C-II, D-III

Ans. (3)

168. Which one is the correct product of DNA dependent RNA polymerase to the given template ?
3'TACATGGCAAATATCCATTCA5'
(1) 5'AUGUACCGUUUAUAGGUAAGU3'
(2) 5'AUGUAAAGUUUAUAGGUAAGU3'
(3) 5'AUGUACCGUUUAUAGGGAAGU3'
(4) 5'ATGTACCGTTTATAGGTAAGT3'

Ans. (1)

169. Given below are two statements : one is labelled as Assertion A and the other is labelled as Reason R.

Assertion A: FSH acts upon ovarian follicles in female and Leydig cells in male.

Reason R: Growing ovarian follicles secrete estrogen in female while interstitial cells secrete androgen in male human being.

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

(1) Both A and R are true and R is the correct explanation of A.

(2) Both A and R are true but R is NOT the correct explanation of A.

(3) A is true but R is false.

(4) A is false but R is true.

Ans. (4)

170. Which of the following is not a natural/traditional contraceptive method ?

(1) Coitus interruptus

(2) Periodic abstinence

(3) Lactational amenorrhea

(4) Vaults

Ans. (4)

171. Match List-I with List-II :

List-I	List-II
A. Non-medicated IUD	I. Multiload 375
B. Copper releasing IUD	II. Progestogens
C. Hormone releasing IUD	III. Lippes loop
D. Implants	IV. LNG-20

Choose the correct answer from the options given below :

(1) A-III, B-I, C-II, D-IV

(2) A-I, B-III, C-IV, D-II

(3) A-IV, B-I, C-II, D-III

(4) A-III, B-I, C-IV, D-II

Ans. (4)

172. Consider the following statements :

A. Annelids are true coelomates

B. Poriferans are pseudocoelomates

C. Aschelminthes are acoelomates

D. Platyhelminthes are pseudocoelomates

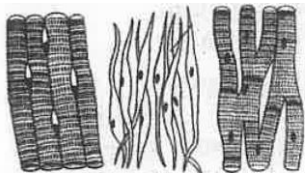
Choose the correct answer from the options given below :

(1) B only (2) A only

(3) C only (4) D only

Ans. (2)

173. Three types of muscles are given as a, b and c. Identify the correct matching pair along with their location in human body :



(a) (b) (c)

Name of muscle/location

(1) (a) Smooth-Toes
(b) Skeletal - Legs
(c) Cardiac - Heart

(2) (a) Skeletal - Triceps
(b) Smooth - Stomach
(c) Cardiac - Heart

(3) (a) Skeletal - Biceps
(b) Involuntary - Intestine
(c) Smooth - Heart

(4) (a) Involuntary - Nose tip
(b) Skeletal - Bone
(c) Cardiac - Heart

Ans. (2)

174. Following are the stages of pathway for conduction of an action potential through the heart :

A. AV bundle B. Purkinje fibres

C. AV node D. Bundle branches

E. SA node

Choose the correct sequence of pathway from the options given below :

(1) E-C-A-D-B (2) A-E-C-B-D

(3) B-D-E-C-A (4) E-A-D-B-C

Ans. (1)

175. Match List I with List-II :

List-I	List-II
A. Lipase	I. Peptide bond
B. Nuclease	II. Ester bond
C. Protease	III. Glycosidic bond
D. Amylase	IV. Phosphodiester bond

Choose the correct answer from the options given below :

(1) A-IV, B-II, C-III, D-I (2) A-III, B-II, C-I, D-IV
(3) A-II, B-IV, C-I, D-III (4) A-IV, B-I, C-III, D-II

Ans. (3)

176. Match List I with List-II :

List-I	List-II
A. Axoneme	I. Centriole
B. Cartwheel pattern	II. Cilia and flagella
C. Crista	III. Chromosome
D. Statellite	IV. Mitochondria

Choose the correct answer from the options given below :

(1) A-IV, B-III, C-II, D-I (2) A-IV, B-II, C-III, D-I
(3) A-II, B-IV, C-I, D-III (4) A-II, B-I, C-IV, D-III

Ans. (4)

177. Match List I with List-II :

List-I (Sub Phases of Prophase I)	List-II (Specific characters)
A. Diakinesis	I. Synaptonemal complex formation
B. Pachytene	II. Completion of terminalisation of chiasmata
C. Zygotene	III. Chromosomes look like thin threads
D. Leptotene	IV. Appearance of recombination nodules

Choose the correct answer from the options given below :

(1) A-IV, B-II, C-III, D-I (2) A-I, B-II, C-IV, D-III
(3) A-II, B-IV, C-I, D-III (4) A-IV, B-III, C-II, D-I

Ans. (3)

178. Which of the following factors are favourable for the formation of oxyhaemoglobin in alveoli?

(1) High pO_2 and High pCO_2
(2) High pO_2 and Lesser H^+ concentration
(3) Low pCO_2 and High H^+ concentration
(4) Low pCO_2 and High temperature

Ans. (2)

179. Match List I with List-II :

List-I	List-II
A. *Pterophyllum*	I. Hag fish
B. Myxine	II. Saw fish
C. *Pristis*	III. Angel fish
D. *Exocoetus*	IV. Flying fish

Choose the correct answer from the options given below :

(1) A-II, B-I, C-III, D-IV (2) A-III, B-I, C-II, D-IV
(3) A-IV, B-I, C-II, D-III (4) A-III, B-II, C-I, D-IV

Ans. (2)

180. Match List I with List II :

List-I	List-II
A. Typhoid	I. Fungus
B. Leishmaniasis	II. Nematode
C. Ringworm	III. Protozoa
D. Filariasis	IV. Bacteria

Choose the correct answer from the options given below :

(1) A-I, B-III, C-II, D-IV (2) A-IV, B-III, C-I, D-II
(3) A-III, B-I, C-IV, D-II (4) A-II, B-IV, C-III, D-I

Ans. (2)

181. Which of the following statements is incorrect?

(1) A bio-reactor provides optimal growth conditions for achieving the desired product.
(2) Most commonly used bio-reactors are of stirring type.
(3) Bio-reactors are used to produce small scale bacterial cultures.
(4) Bio- reactors have an agitator system, an oxygen delivery system and foam control system.

Ans. (3)

182. Given below are two statements:

Statement I : In the nephron, the descending limb of loop of Henle is impermeable to water and permeable to electrolytes.

Statement II : The proximal convoluted tubule is lined by simple columnar brush border epithelium and increases the surface area for reabsorption.

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

(1) Both Statement I and Statement II are true.

(2) Both Statement I and Statement II are false.

(3) Statement I is true but Statement II is false.

(4) Statement I is false but Statement II is true.

Ans. (2)

183. Given below are two statement :

Statement I : The presence or absence of hymen is not a reliable indicator of virginity.

Statement II : The hymen is torn during the first coitus only.

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

(1) Both Statement I and Statement II are true

(2) Both Statement I and Statement II are false.

(3) Statement I is true but Statement II is false.

(4) Statement I is false but Statement II is true.

Ans. (3)

184. Match List I with List II :

	List I		**List II**
A.	Expiratory capacity	I.	Expiratory reserve volume + Tidal Volume + Inspiratory reserve volume
B.	Functional residual capacity	II.	Tidal volume + Expiratory reserve volume
C.	Vital capacity	III.	Tidal volume + Inspiratory reserve volume
D.	Inspiratory capacity	IV	Expiratory reserve volume + Residual volume

Choose the correct answer from the options given below

(1) A-II, B-IV,C-I,D-III (2) A-III, B-II,C-IV,D-I

(3) A-II, B-I,C-IV,D-III (4) A-I, B-III,C-II,D-IV

Ans. (1)

185. Following are the stages of cell division :

A. Gap 2 phase B. Cytokinesis

C. Synthesis phase D. Karyokinesis

E. Gap 1 phase

Choose the correct sequence of stages from the options given below :

(1) C-E-D-A-B (2) E-B-D-A-C

(3) B-D-E-A-C (4) E-C-A-D-B

Ans. (4)

Zoology : Section-B (Q. No. 186 to 200)

186. Given below are two statements:

Statement I : Mitochondria and chloroplasts are both double membrane bound organelles.

Statement II : Inner membrane of mitochondria is relatively less permeable, as compared to chloroplast.

In the light of the above statement, choose the most appropriate answer from the options given below :

(1) Both Statement I and Statement II are correct

(2) Both Statement I and Statement II are incorrect.

(3) Statement I is correct but Statement II is incorrect.

(4) Statement I is incorrect but Statement II is correct

Ans. (3)

187. Match List I with List II

	List I		**List II**
A.	Mesozoic Era	I.	Lower invertebrates
B.	Proterozoic Era	II.	Fish & Amphibia
C.	Cenozoic Era	III.	Birds & Reptiles
D.	Paleozoic Era	IV	Mammals

Choose the correct answer from the options given below :

(1) A-II, B-I,C-III,D-IV (2) A-III, B-I,C-II,D-IV

(3) A-I, B-II,C-IV,D-III (4) A-III, B-I,C-IV,D-II

Ans. (4)

188. Given below are two statements :

Statement I : Gause's competitive exclusion principle states that two closely related species competing for different resources cannot exist indefinitely.

Statement II : According to Gause's principle, during competition, the inferior will be eliminated. This may be true if resources are limiting.

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

(1) Both Statement I and Statement II are true

(2) Both Statement I and Statement II are false.

(3) Statement I is true but Statement II is false.

(4) Statement I is false but Statement II is true.

Ans. (4)

189. Match List I with List II

	List I		**List II**
A.	Unicellular glandular epithelium	I.	Salivary glands
B.	Compound epithelium	II.	Pancreas
C.	Multicellular glandular epithelium	III.	Goblet cells of alimentary canal
D.	Endocrine glandular epithelium	IV	Moist surface of buccal cavity

Choose the correct answer from the options given below :

(1) A-II, B-I,C-III,D-IV (2) A-IV, B-III,C-I,D-II

(3) A-III, B-IV,C-I,D-II (4) A-II, B-I,C-IV,D-III

Ans. (3)

190. Match List I with List II related to digestive system of cockroach.

	List I		**List II**
A.	The structures used for storing of food.	I.	Gizzard
B.	Ring of 6-8 blind tubules at junction of foregut and midgut.	II.	Gastric Caeca
C.	Ring of 100-150 yellow coloured thin filaments at junction of midgut and hindgut.	III.	Malpighian tubules
D.	The structures used for grinding the food.	IV	Crop

Choose the correct answer from the options given below:

(1) A-IV, B-II,C-III,D-I (2) A-I, B-II,C-III,D-IV

(3) A-IV, B-III,C-II,D-I (4) A-III, B-II,C-IV,D-I

Ans. (1)

191. Choose the correct statement given below regarding juxta medullary nephron.

(1) Juxta medullary nephrons are located in the coloumns of Bertini.

(2) Renal corpuscle of juxta medullary nephron lies in the outer portion of the renal medulla.

(3) Loop of Henle of juxta medullary nephron runs deep into medulla.

(4) Juxta medullary nephrons outnumber the cortical nephrons.

Ans. (3)

192. Match List I with List II :

	List I		**List II**
(A)	RNA polymerase III	(I)	snRNPs
(B)	Termination of transcription	(II)	Promotor
(C)	Splicing of Exons	(III)	Rho factor
(D)	TATA box	(IV)	SnRNAs, tRNA

Choose the correct answer from the options given below :

(1) A-II, B-IV, C-I, D-III (2) A-III, B-II, C-IV, D-I

(3) A-III, B-IV, C-I, D-II (4) A-IV, B-III, C-I, D-II

Ans. (4)

193. Given below are two statements :

Statement I: The cerebral hemispheres are connected by nerve tract known as corpus callosum.

Statement II: The brain stem consists of the medulla oblongata, pons and cerebrum.

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

(1) Both Statement I and Statement II are correct.

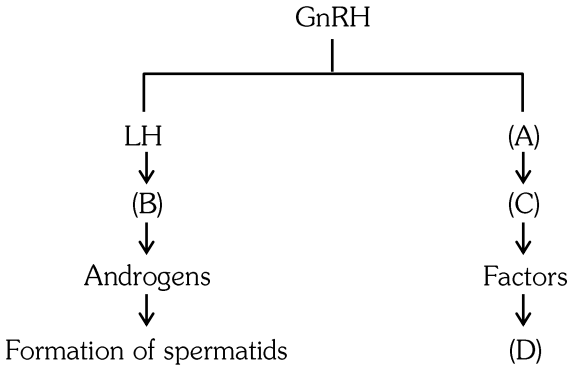
(2) Both Statement I and Statement II are incorrect.

(3) Statement I is correct but Statement II is incorrect.

(4) Statement I is incorrect but Statement II is correct.

Ans. (3)

194. Identify the correct option (A), (B), (C), (D) with respect to spermatogenesis.



(1) FSH, Leydig cells, Sertoli cells, spermiogenesis
(2) ICSH, Interstitial cells, Leydig cells, spermiogensis.
(3) FSH, Sertoli cells, Leydig cells, spermatogenesis.
(4) ICSH, Leydig cells, Sertoli cells, spermatogenesis.

Ans. (1)

195. As per ABO blood grouping system, the blood group of father is B^+, mother is A^+ and child is O^+. Their respective genotype can be

A. I^Bi / I^Ai / ii
B. I^BI^B / I^AI^A / ii
C. I^AI^B / iI^A / I^Bi
D. I^Ai / I^Bi / I^Ai
E. iI^B / iI^A / I^AI^B

Choose the most appropriate answer from the options given below :

(1) A only (2) B only
(3) C & B only (4) D & E only

Ans. (1)

196. Given below are two statements :

Statement I: Bone marrow is the main lymphoid organ where all blood cells including lymphocytes are produced.

Statement II: Both bone marrow and thymus provide micro environments for the development and maturation of T-Lymphocytes.

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

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

Ans. (1)

197. Regarding catalytic cycle of an enzyme action, select the correct sequential steps :

A. Substrate enzyme complex formation.
B. Free enzyme ready to bind with another substrate.
C. Release of products.
D. Chemical bonds of the substrate broken
E. Substrate binding to active site.

Choose the correct answer from the options given below:

(1) E, A, D, C, B (2) A, E, B, D, C
(3) B, A, C, D, E (4) E, D, C, B, A

Ans. (1)

198. Match List I with List II :

	List I		List II
A	P wave	I	Heart muscles are electrically silent.
B	QRS complex	II	Depolarisation of ventricles.
C	T wave	III	Depolarisation of atria.
D	T-P gap	IV	Repolarisation of ventricles.

Choose the correct answer from the options given below:

(1) A-I, B-III, C-IV, D-II (2) A-III, B-II, C-IV, D-I
(3) A-II, B-III, C-I, D-IV (4) A-IV, B-II, C-I, D-III

Ans. (2)

199. Match List I with List II.

	List I		List II
A	Exophthalmic goiter	I	Excess secretion of cortisol, moon face & hyperglycemia.
B	Acromegaly	II	Hypo-secretion of thyroid hormone and stunted growth.
C	Cushing's syndrome	III	Hyper secretion of thyroid hormone & protruding eye balls.
D	Cretinism	IV	Excessive secretion of growth hormone.

Choose the correct answer from the options given below:

(1) A-I, B-III, C-II, D-IV (2) A-IV, B-II, C-I, D-III
(3) A-III, B-IV, C-II, D-I (4) A-III, B-IV, C-I, D-II

Ans. (4)

200. The following are the statements about non-chordates :

A. Pharynx is perforated by gill slits.
B. Notochord is absent.
C. Central nervous system is dorsal.
D. Heart is dorsal if present.
E. Post anal tail is absent.

(1) A & C only (2) A, B & D only
(3) B, D & E only (4) B, C & D only

Ans. (3)