

ZOOLOGY

SECTION-A

151. Given below are two statements :

Statement I : Fatty acids and glycerols cannot be absorbed into the blood.

Statement II : Specialized lymphatic capillaries called lacteals carry chylomicrons into lymphatic vessels and ultimately into the blood.

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

Answer (1)

152. Given below are two statements:

Statement I :

The release of sperms into the seminiferous tubules is called spermiation.

Statement II :

Spermiogenesis is the process of formation of sperms from spermatogonia.

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

Answer (3)

153. Which of the following is not the function of conducting part of respiratory system?

- (1) It clears inhaled air from foreign particles
- (2) Inhaled air is humidified
- (3) Temperature of inhaled air is brought to body temperature
- (4) Provides surface for diffusion of O₂ and CO₂

Answer (4)

154. Identify the microorganism which is responsible for the production of an immunosuppressive molecule cyclosporin A :

- (1) *Trichoderma polysporum*
- (2) *Clostridium butylicum*
- (3) *Aspergillus niger*
- (4) *Streptococcus cerevisiae*

Answer (1)

155. Under normal physiological conditions in human being every 100 ml of oxygenated blood can deliver _____ ml of O₂ to the tissues.

- (1) 2 ml
- (2) 5 ml
- (3) 4 ml
- (4) 10 ml

Answer (2)

156. Tegmina in cockroach, arises from

- (1) Prothorax
- (2) Mesothorax
- (3) Metathorax
- (4) Prothorax and Mesothorax

Answer (2)

157. *In-situ* conservation refers to:

- (1) Protect and conserve the whole ecosystem
- (2) Conserve only high-risk species
- (3) Conserve only endangered species
- (4) Conserve only extinct species

Answer (1)

158. Detritivores breakdown detritus into smaller particles. This process is called:

- (1) Catabolism
- (2) Fragmentation
- (3) Humification
- (4) Decomposition

Answer (2)

159. A dehydration reaction links two glucose molecules to product maltose. If the formula for glucose is C₆H₁₂O₆ then what is the formula for maltose?

- (1) C₁₂H₂₀O₁₀
- (2) C₁₂H₂₄O₁₂
- (3) C₁₂H₂₂O₁₁
- (4) C₁₂H₂₄O₁₁

Answer (3)

160. Identify the asexual reproductive structure associated with *Penicillium* :

- (1) Zoospores
- (2) Conidia
- (3) Gemmules
- (4) Buds

Answer (2)

161. Select the **incorrect** statement with reference to mitosis:
- (1) All the chromosomes lie at the equator at metaphase
 - (2) Spindle fibres attach to centromere of chromosomes
 - (3) Chromosomes decondense at telophase
 - (4) Splitting of centromere occurs at anaphase

Answer (2)

162. Which of the following statements with respect to Endoplasmic Reticulum is incorrect?
- (1) RER has ribosomes attached to ER
 - (2) SER is devoid of ribosomes
 - (3) In prokaryotes only RER are present
 - (4) SER are the sites for lipid synthesis

Answer (3)

163. In the taxonomic categories which hierarchical arrangement in ascending order is **correct** in case of animals?
- (1) Kingdom, Phylum, Class, Order, Family, Genus, Species
 - (2) Kingdom, Class, Phylum, Family, Order, Genus, Species
 - (3) Kingdom, Order, Class, Phylum, Family, Genus, Species
 - (4) Kingdom, Order, Phylum, Class, Family, Genus, Species

Answer (1*)

164. In which of the following animals, digestive tract has additional chambers like crop and gizzard?
- (1) *Corvus, Columba, Chameleon*
 - (2) *Bufo, Balaenoptera, Bangarus*
 - (3) *Catla, Columba, Crocodilus*
 - (4) *Pavo, Psittacula, Corvus*

Answer (4)

165. Given below are two statements :

Statement I : Mycoplasma can pass through less than 1 micron filter size.

Statement II : Mycoplasma are bacteria with cell wall.

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

Answer (3)

166. Which of the following is **not** a connective tissue?

- (1) Blood
- (2) Adipose tissue
- (3) Cartilage
- (4) Neuroglia

Answer (4)

167. Nitrogenous waste is excreted in the form of pellet or paste by :

- (1) *Ornithorhynchus*
- (2) *Salamandra*
- (3) *Hippocampus*
- (4) *Pavo*

Answer (4)

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

Assertion (A) : All vertebrates are chordates but all chordates are not vertebrates.

Reason (R) : Notochord is replaced by vertebral column in the adult vertebrates.

In the light of the above statements, choose the **most appropriate** answer from the option 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

Answer (1)

169. Which of the following is a correct match for disease and its symptoms?

- (1) Arthritis – Inflamed joints
- (2) Tetany – High Ca^{2+} level causing rapid spasms.
- (3) Myasthenia gravis – Genetic disorder resulting in weakening and paralysis of skeletal muscle
- (4) Muscular dystrophy – An auto immune disorder causing progressive degeneration of skeletal muscle

Answer (1)

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

Assertion (A): Osteoporosis is characterised by decreased bone mass and increased chance of fractures.

Reason (R): Common cause of osteoporosis is increased levels of estrogen.

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

Answer (3)

171. In an *E. Coli* strain *i* gene gets mutated and its product can not bind the inducer molecule. If growth medium is provided with lactose, what will be the outcome?
- (1) Only *z* gene will get transcribed
 - (2) *z, y, a* genes will be transcribed
 - (3) *z, y, a* genes will not be translated
 - (4) RNA polymerase will bind the promoter region

Answer (3)

172. If the length of a DNA molecule is 1.1 metres, what will be the approximate number of base pairs?
- (1) 3.3×10^9 bp
 - (2) 6.6×10^9 bp
 - (3) 3.3×10^6 bp
 - (4) 6.6×10^6 bp

Answer (1)

173. Which of the following statements are true for spermatogenesis but do not hold true for Oogenesis?
- (a) It results in the formation of haploid gametes
 - (b) Differentiation of gamete occurs after the completion of meiosis
 - (c) Meiosis occurs continuously in a mitotically dividing stem cell population
 - (d) It is controlled by the Luteinising hormone (LH) and Follicle Stimulating Hormone (FSH) secreted by the anterior pituitary
 - (e) It is initiated at puberty

Choose the most appropriate answer from the options given below:

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

Answer (4)

174. Which of the following is present between the adjacent bones of the vertebral column?
- (1) Intercalated discs
 - (2) Cartilage
 - (3) Areolar tissue
 - (4) Smooth muscle

Answer (2)

175. Regarding Meiosis, which of the statements is **incorrect**?
- (1) There are two stages in Meiosis, Meiosis-I and II
 - (2) DNA replication occurs in S phase of Meiosis-II
 - (3) Pairing of homologous chromosomes and recombination occurs in Meiosis-I
 - (4) Four haploid cells are formed at the end of Meiosis-II

Answer (2)

176. Given below are two statements:

Statement I:

Autoimmune disorder is a condition where body defense mechanism recognizes its own cells as foreign bodies.

Statement II:

Rheumatoid arthritis is a condition where body does not attack self cells.

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

Answer (3)

177. Natural selection where more individuals acquire specific character value other than the mean character value, leads to

- (1) Stabilising change
- (2) Directional change
- (3) Disruptive change
- (4) Random change

Answer (2)

178. Given below are two statements :

Statement I : The coagulum is formed of network of threads called thrombins.

Statement II : Spleen is the graveyard of erythrocytes.

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

Answer (4)

179. Breeding crops with higher levels of vitamins and minerals or higher proteins and healthier fats is called :

- (1) Bio-magnification
- (2) Bio-remediation
- (3) Bio-fortification
- (4) Bio-accumulation

Answer (3)

180. In gene therapy of Adenosine Deaminase (ADA) deficiency, the patient requires periodic infusion of genetically engineered lymphocytes because :

- (1) Retroviral vector is introduced into these lymphocytes.
- (2) Gene isolated from marrow cells producing ADA is introduced into cells at embryonic stages
- (3) Lymphocytes from patient's blood are grown in culture, outside the body.
- (4) Genetically engineered lymphocytes are not immortal cells.

Answer (4)

181. At which stage of life the oogenesis process is initiated?

- (1) Puberty
- (2) Embryonic development stage
- (3) Birth
- (4) Adult

Answer (2)

182. Lippe's loop is a type of contraceptive used as:

- (1) Cervical barrier
- (2) Vault barrier
- (3) Non-Medicated IUD
- (4) Copper releasing IUD

Answer (3)

183. Which of the following functions is **not** performed by secretions from salivary glands?

- (1) Control bacterial population in mouth
- (2) Digestion of complex carbohydrates
- (3) Lubrication of oral cavity
- (4) Digestion of disaccharides

Answer (4)

184. If '8' *Drosophila* in a laboratory population of '80' died during a week, the death rate in the population is _____ individuals per *Drosophila* per week.

- (1) 0.1
- (2) 10
- (3) 1.0
- (4) zero

Answer (1)

185. Given below are two statements:

Statement I:

Restriction endonucleases recognise specific sequence to cut DNA known as palindromic nucleotide sequence.

Statement II:

Restriction endonucleases cut the DNA strand a little away from the centre of the palindromic site.

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

Answer (1)

SECTION-B

186. Which of the following is a **correct** statement?

- (1) Cyanobacteria are a group of autotrophic organisms classified under kingdom Monera.
- (2) Bacteria are exclusively heterotrophic organisms.
- (3) Slime moulds are saprophytic organisms classified under Kingdom Monera.
- (4) Mycoplasma have DNA, ribosome and cell wall.

Answer (1)

187. Statements related to human Insulin are given below.

Which statement(s) is/are **correct** about genetically engineered Insulin?

- (a) Pro-hormone insulin contain extra stretch of C-peptide
- (b) A-peptide and B-peptide chains of insulin were produced separately in *E.coli*, extracted and combined by creating disulphide bond between them.
- (c) Insulin used for treating Diabetes was extracted from Cattles and Pigs.
- (d) Pro-hormone Insulin needs to be processed for converting into a mature and functional hormone.
- (e) Some patients develop allergic reactions to the foreign insulin.

Choose **the most appropriate** answer from the options given below:

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

Answer (2)

188. Given below are two statements:

Statements I : In a scrubber the exhaust from the thermal plant is passed through the electric wires to charge the dust particles.

Statement II : Particulate matter (PM 2.5) cannot be removed by scrubber but can be removed by an electrostatic precipitator.

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

Answer (4)

Answer (2)

192. Which of the following are **not** the effects of Parathyroid hormone?

- (a) Stimulates the process of bone resorption
- (b) Decreases Ca^{2+} level in blood
- (c) Reabsorption of Ca^{2+} by renal tubules
- (d) Decreases the absorption of Ca^{2+} from digested food
- (e) Increases metabolism of carbohydrates

Choose the **most appropriate** answer from the options given below:

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

Answer (2)

193. Select the **incorrect** statement with respect to acquired immunity.

- (1) Primary response is produced when our body encounters a pathogen for the first time.
- (2) Anamnestic response is elicited on subsequent encounters with the same pathogen.
- (3) Anamnestic response is due to memory of first encounter.
- (4) Acquired immunity is non-specific type of defense present at the time of birth.

Answer (4)

194. Ten *E.coli* cells with ^{15}N - dsDNA are incubated in medium containing ^{14}N nucleotide. After 60 minutes, how many *E.coli* cells will have DNA totally free from ^{15}N ?

- (1) 20 cells
- (2) 40 cells
- (3) 60 cells
- (4) 80 cells

Answer (3)

195. If a colour blind female marries a man whose mother was also colour blind, what are the chances of her progeny having colour blindness?

- (1) 25%
- (2) 50%
- (3) 75%
- (4) 100%

Answer (4)

196. Which of the following is **not** a desirable feature of a cloning vector?

- (1) Presence of origin of replication
- (2) Presence of a marker gene
- (3) Presence of single restriction enzyme site
- (4) Presence of two or more recognition sites

Answer (4)

197. Match **List-I** with **List-II**

	List-I		List-II
(a)	Bronchioles	(i)	Dense Regular Connective Tissue
(b)	Goblet Cell	(ii)	Loose Connective Tissue
(c)	Tendons	(iii)	Glandular Tissue
(d)	Adipose Tissue	(iv)	Ciliated Epithelium

Choose the **correct answer** from the options given below:

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

Answer (1)

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

- (1) The atrio-ventricular node (AVN) generates an action potential to stimulate atrial contraction
- (2) The tricuspid and the bicuspid valves open due to the pressure exerted by the simultaneous contraction of the atria
- (3) Blood moves freely from atrium to the ventricle during joint diastole.
- (4) Increased ventricular pressure causes closing of the semilunar valves.

Answer (3)

199. Select the **incorrect** statement regarding synapses :

- (1) The membranes of presynaptic and postsynaptic neurons are in close proximity in an electrical synapse.
- (2) Electrical current can flow directly from one neuron into the other across the electrical synapse.
- (3) Chemical synapses use neurotransmitters
- (4) Impulse transmission across a chemical synapse is always faster than that across an electrical synapse.

Answer (4)

200. Which of the following statements **is not true**?

- (1) Analogous structures are a result of convergent evolution
- (2) Sweet potato and potato is an example of analogy
- (3) Homology indicates common ancestry
- (4) Flippers of penguins and dolphins are a pair of homologous organs

Answer (4)