

ZOOLOGY**SECTION-A**

151. 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 |

Answer (1)

152. 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 |

Answer (2)

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

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

Answer (3)

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

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

Answer (1)

155. 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 |

Answer (4)

156. Which of the following is not a steroid hormone?

- | | |
|------------------|------------------|
| (1) Cortisol | (2) Testosterone |
| (3) Progesterone | (4) Glucagon |

Answer (4)

157. Match **List I** with **List II** :

List I	List II
A. α -I 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 form 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

Answer (3)

158. 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

Answer (4)

159. 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

Answer (4)

160. 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

Answer (2)

161. 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

Answer (2)

162. 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

Answer (1)

163. 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

Answer (3)

164. 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

Answer (4)

165. 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

Answer (2)

166. 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

Answer (3)

167. The "Ti plasmid" of *Agrobacterium tumefaciens* stands for

- (1) Tumour inhibiting plasmid
- (2) Tumor independent plasmid
- (3) Tumor inducing plasmid
- (4) Temperature independent plasmid

Answer (3)

168. Match List I with List II :

List I	List II
A. Cocaine	I. Effective sedative in surgery
B. Heroin	II. <i>Connabis sativa</i>
C. Morphine	III. <i>Erythroxylum</i>
D. Marijuana	IV. <i>Papaver somniferum</i>

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

Answer (4)

169. Which one is the correct product of DNA dependent RNA polymerase to the given template?

3'TACATGGCAAATATCCATTCA5'

- (1) 5'AUGUACCGUUUAUAGGUAAGU3'
- (2) 5'AUGUAAAAGUUUAUAGGUAAGU3'
- (3) 5'AUGUACCGUUUAUAGGGAAGU3'
- (4) 5'ATGTACCGTTTATAGGTAAGT3'

Answer (1)

170. 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	Neurosecretory 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

Answer (2)

171. 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

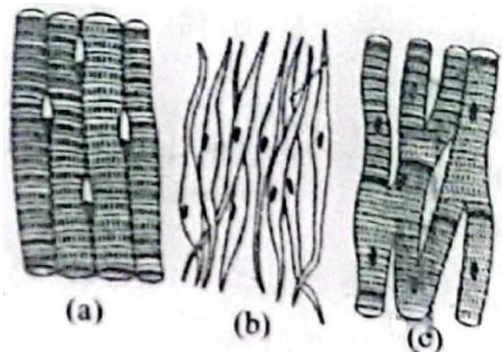
Answer (3)

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

- (1) Coitus interruptus
- (2) Periodic abstinence
- (3) Lactational amenorrhea
- (4) Vaults

Answer (4)

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



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

Answer (2)

174. 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 foam control system

Answer (3)

175. 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

Answer (1)

176. 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

Answer (2)

177. Match List I with List II :

List I

- A. Common cold
- B. Haemozoin
- C. Widal test
- D. Allergy

List II

- I. *Plasmodium*
- II. Typhoid
- III. Rhinoviruses
- 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

Answer (3)

178. 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

Answer (2)

182. 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. Satellite	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

Answer (4)

183. Match List I with List II :

List I	List II
A. <i>Pterophyllum</i>	I. Hag fish
B. <i>Myxine</i>	II. Saw fish
C. <i>Pristis</i>	III. Angel fish
D. <i>Exocoetus</i>	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

Answer (2)

184. 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 movement
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

Answer (4)

185. Given below are two statements:

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

Answer (3)

SECTION-B

186. 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.

Answer (4)

187. 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
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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

Answer (1)

188. 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.

Choose the most appropriate answer from the options given below:

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

Answer (3)

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

- (1) Juxta medullary nephrons are located in the columns 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.

Answer (3)

190. 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.

Answer (3)

191. 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 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)

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

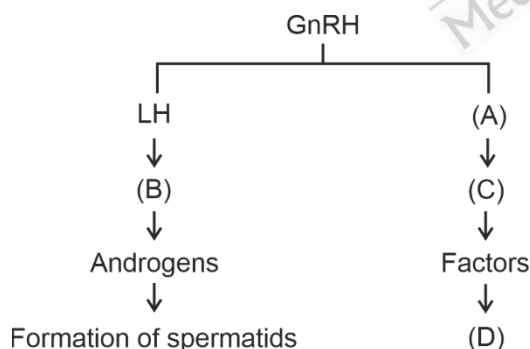
- A. Substrate enzyme complex formation.
- B. Free enzyme ready to bind with another substrate.
- C. Release of products.
- D. Chemical bonds of the substrate broken.
- E. Substrate binding to active site.

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

Answer (1)

193. 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, spermiogenesis.
- (3) FSH, Sertoli cells, Leydig cells, spermatogenesis.
- (4) ICSH, Leydig cells, Sertoli cells, spermatogenesis.

Answer (1)

194. 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

Answer (4)

195. 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

Answer (3)

196. 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

Answer (4)

197. 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/I^Ai
 D. I^Ai/I^Bi/I^Ai
 E. ii/I^B/ii/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

Answer (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

Answer (2)

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

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199. Given below are two statements:

Statement I: Mitochondria and chloroplasts both double membranes bound organelles.

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

In the light of the above statements, choose the mis 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)

200. 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

Answer (4)

