



ZOOLOGY

SECTION-A

1. Labia majora in human is homologous to;
(1) Clitoris (2) Hymen
(3) Scrotum (4) Testis
2. Placenta begins to secrete sufficient progesterone after;
(1) 1 month (2) 2 month
(3) 3 month (4) 4 month
3. What induces the completion of the meiotic division of the secondary oocyte?
(1) Contact of the sperm with the zona pellucida layer of the ovum
(2) The entry of the sperm into the cytoplasm of the ovum through the zona pellucida and the plasma membrane
(3) Entry of the sperm in the ampullary-isthmic junction
(4) Copulation
4. Contraceptive pills are very effective with lesser side effects used by females. They work by;
(1) inhibiting ovulation.
(2) inhibiting implantation.
(3) they alter the quality of cervical mucus to prevent/retard the entry of sperm.
(4) All of these.
5. **Statement I:** A widely used diagnostic test for AIDS is ELISA.
Statement II: AZT (Azidothymidine) was first for the treatment of AIDS.
(1) Statement I is correct but statement II is incorrect.
(2) Statement I is incorrect but statement II is correct.
(3) Both statement I and statement II are correct.
(4) Both statement I and statement II are incorrect.
6. Antigen binding site in an antibody is formed by;
(1) two light chains.
(2) two heavy chains.
(3) one heavy and one light chain.
(4) either between two light chains or between one heavy and one light chain depending upon the nature of antigen.

7. Which is the most infectious disease?
(1) Hepatitis-B (2) AIDS
(3) Tuberculosis (4) Common cold
8. Pure DNA precipitated by addition of chilled ethanol can be removed from solution by;
(1) Elution
(2) Gel electrophoresis
(3) Spooling
(4) PCR
9. Which one of the following is used as vector for cloning genes into higher organisms?
(1) Retrovirus
(2) Baculovirus
(3) *Salmonella typhimurium*
(4) *Rhizopus nigricans*
10. How is Bt toxin known to kill the target insects in protection of cotton plants?
(1) Midgut cell lysis and swelling
(2) Paralysis and loss of coordination
(3) Formation of abnormal proteins
(4) Brain death
11. **Assertion (A):** A crop expressing a cry gene is usually resistant to a group of insects.
Reason (R): Cry protein produced from *Bacillus thuringiensis* is toxic to larvae of all insects.
Choose the **appropriate** option;
(1) Both **Assertion (A)** and **Reason (R)** are true and **Reason (R)** is the correct explanation of **Assertion (A)**.
(2) Both **Assertion (A)** and **Reason (R)** are true but **Reason (R)** is not the correct explanation of **Assertion (A)**.
(3) **Assertion (A)** is true but **Reason (R)** is false.
(4) Both **Assertion (A)** and **Reason (R)** are false.
12. The nerve centres which control the body temperature and the urge for eating are containing in;
(1) Thalamus (2) Hypothalamus
(3) Pons (4) Cerebellum



13. 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 strands 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 palindromic site.

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

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

14. Which of the following is **false** w.r.t. the organism, its circulatory system and respiratory system?

	Organism	Circulatory system	Respiratory system
(1)	Crustaceans	Open	Gills
(2)	Arachnids	Open	Book lungs
(3)	<i>Locusta</i>	Open	Tracheal system
(4)	<i>Pheretima</i>	Closed	Parapodia

15. The chordates with metamorphosis in their life cycle are;

- | | |
|------------------|----------------|
| (a) Amphibians | (b) Mammals |
| (c) Cyclostomata | (d) Tunicata |
| (e) Reptilia | (f) Aves |
| (1) a and d | (2) a, c and d |
| (3) a, b and c | (4) a, d and f |

16. Which structure allows fishes to control their depth in an aquatic environment?

- | | |
|------------------|------------------|
| (1) Operculum | (2) Swim bladder |
| (3) Lateral line | (4) Jaws |

17. Find out the **correct** statement with respect to bone.

- (1) Matrix is hard.
- (2) Having solid and pliable intracellular material which can resist compression.
- (3) Chondrocytes are enclosed in small cavities.
- (4) At very few locations in vertebrates bone replacement occur by chondrocytes.

18. The cell junctions called tight, adhering and gap junctions are mostly found in which type of tissues?

- | | |
|-----------------------|-----------------------|
| (1) Muscular tissue | (2) Epithelial tissue |
| (3) Connective tissue | (4) Neural tissue |

19. **Assertion (A)** : Urinary bladder can considerably expand to accommodate urine.

Reason (R) : It is lined by stretchable squamous epithelium.

- (1) Both **Assertion (A)** and **Reason (R)** are true & the **Reason (R)** is a correct explanation of the **Assertion (A)**.
- (2) Both **Assertion (A)** and **Reason (R)** are true but **Reason (R)** is not a correct explanation of the **Assertion (A)**.
- (3) **Assertion (A)** is true but the **Reason (R)** is false.
- (4) Both **Assertion (A)** and **Reason (R)** are false.

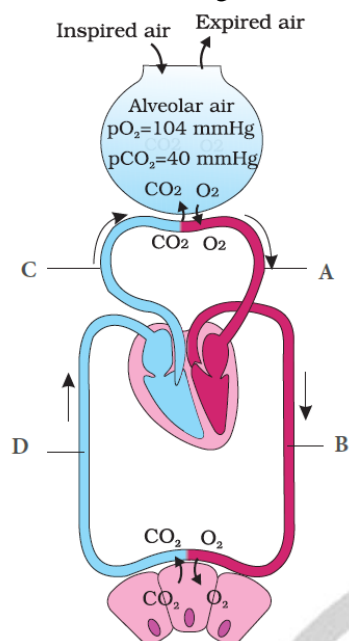
20. Match **List-I** with **List-II** to find out the **correct** option.

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

- (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)



21. Identify the various sites of circulatory system labelled A, B, C, D in diagram.



- (1) A - $pO_2 = 204$ mm Hg
 (2) B - $pCO_2 = 40$ mm Hg
 (3) C - $pCO_2 = 20$ mm Hg
 (4) D - $pCO_2 = 30$ mm Hg
22. Match the terms given in **List-I** with their physiological processes given in **List-II** and choose the **correct** answer.

List-I		List-II	
(A)	Proximal convoluted tubule	(I)	Formation of concentrated urine
(B)	Distal convoluted tubule	(II)	Absorption of small amount of urea
(C)	Henle's loop	(III)	Reabsorption of Nutrients
(D)	Counter current mechanism	(IV)	Conditional reabsorption
(E)	Collecting duct	(V)	Maintenance of concentration gradient in medulla

- (1) (A) – III (B) – V (C) – III (D) – II (E) – I
 (2) (A) – III (B) – IV (C) – I (D) – V (E) – II
 (3) (A) – I (B) – III (C) – II (D) – V (E) – IV
 (4) (A) – III (B) – I (C) – IV (D) – V (E) – II
23. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by;
- (1) pq (2) p^2
 (3) $2pq$ (4) q^2

24. How many of the following statements is/are **correct**?

- (A) The number of RBC in human female is 5.5 to 6.0 billions/mm.
 (B) WBCs are the most abundant cells of blood.
 (C) Human RBCs is oval and non-nucleated.
 (D) Average life span of RBCs is 120 days.
- (1) 1 (2) 2
 (3) 3 (4) 4

25. In which of the following group ventricle pumps out mixed blood?

- (1) Mammals (2) Amphibia
 (3) Birds (4) Fishes

26. Find out **incorrect** statement.

- (1) In heart attack, heart muscles are suddenly damaged.
 (2) 130/90 is hypotension.
 (3) Heart failure and cardiac arrest are different.
 (4) Angina pectoris is identified as acute chest pain.

27. Which of the following sets of diseases is caused by bacteria ?

- (1) Herpes and influenza
 (2) Cholera and tetanus
 (3) Tetanus and mumps
 (4) Typhoid and smallpox

28. Match **List-I** with **List-II** to find out the **correct** option.

	List-I		List-II
(A)	Epinephrine	(I)	Stimulates in muscle growth
(B)	Testosterone	(II)	Decrease in blood pressure
(C)	Glucagon	(III)	Breakdown of liver glycogen
(D)	Atrial natriuretic factor	(IV)	Increases heartbeat

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



29. Select the **right** match of endocrine gland and their hormones among the options given below.

List-I		List-II	
(A)	Pineal	(I)	Epinephrine
(B)	Thyroid	(II)	Melatonin
(C)	Ovary	(III)	Estrogen
(D)	Adrenal medulla	(IV)	Tetraiodothyronine

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

30. Match **List-I** with **List-II** to find out the **correct** option.

List-I		List-II	
(A)	Acrosome	(I)	Rudimentary erectile tissue
(B)	Endometrium	(II)	Uterus
(C)	Polar body	(III)	Oogenesis
(D)	Clitoris	(IV)	Spermatozoa

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

31. Which of the following is **incorrectly** matched?

- (1) IUI – Semen collected from husband or donor is artificially introduced either into the vagina or into the uterus.
 (2) GIFT – Transfer of embryos with more than 8 blastomeres into the fallopian tube.
 (3) ICSI – Sperm directly injected into the ovum.
 (4) ZIFT – Transfer of embryos upto 8 blastomeres into the fallopian tube.

32. Which of the following statements regarding enzyme inhibition is **correct**?

- (1) Competitive inhibition is seen when a substrate competes with an enzyme for binding to an inhibitor protein.
 (2) Competitive inhibition is seen when the substrate and the inhibitor compete for the active site on the enzyme.
 (3) Non-competitive inhibition of an enzyme can be overcome by adding large amount of substrate.
 (4) Non-competitive inhibitors often bind to the enzyme irreversibly.

33. Which of the following contraceptive methods do involve a role of hormones?

- (1) CuT, Pills, Emergency contraceptives
 (2) Pills, Emergency contraceptives, Barrier methods
 (3) Lactational amenorrhea, Pills, Emergency contraceptives
 (4) Barrier method, Lactational amenorrhea, Pills

34. The secondary structure of protein is stabilised by;

- (1) hydrogen bonding.
 (2) glycosidic bond.
 (3) Peptide bond.
 (4) van der Waals forces.

35. Percentage of oxygen carried in dissolved state through plasma is;

- (1) 3%
 (2) 97%
 (3) 67%
 (4) All of these

SECTION-B

36. _____ a crown gall bacterium, is called as ‘natural genetic engineer’ of plants.

- (1) *Escherichia coli*
 (2) *Streptomyces albus*
 (3) *Agrobacterium tumefaciens*
 (4) *Azotobacter*

37. Micro-injection is a method used to;

- (1) produce sticky ends of DNA.
 (2) provide protection against pathogens.
 (3) purify the DNA.
 (4) inject recombinant DNA into the nucleus of an animal cell.

38. The below given figure shows an actin (thin) filament. Identify the labelled parts A, B and C and select the **correct** option.

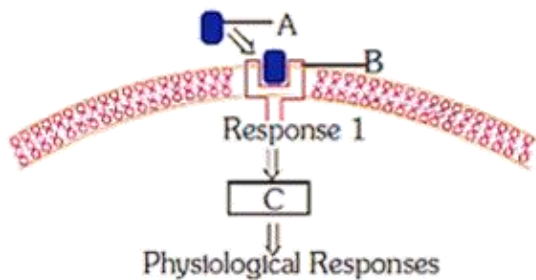


	(A)	(B)	(C)
(1)	Tropomyosin	Troponin	F-actin
(2)	Troponin	Myosin	Tropomyosin
(3)	Troponin	Tropomyosin	Myosin
(4)	Troponin	Tropomyosin	F-actin

39. Select the tissue having solid and pliable ground substance.

- (1) Enamel (2) Bone
(3) Cartilage (4) Ligament

40. Identify A, B and C in the diagrammatic representation of the mechanism of hormone action.



Select the **correct** option from the following.

- (1) A-Steroid hormone; B-hormone-receptor complex, C-Protein
(2) A-Protein hormone; B-Receptor; C-Cyclic AMP
(3) A-Steroid hormone; B-Receptor, C - Second messenger
(4) A-Protein hormone; B-Cyclic AMP, C-Hormone-receptor complex

41. Prosthetic group is a part of holoenzyme. It is;

- (1) loosely attached organic part.
(2) loosely attached inorganic part.
(3) non-protein organic part firmly attached with apoenzyme.
(4) both (1) and (3)

42. Select the **correct** match.

- | Haploid | Diploid |
|----------------------|---------------------------------|
| (1) Secondary oocyte | – Primary spermatocyte |
| (2) Secondary | – Secondary oocyte spermatocyte |
| (3) Primary oocyte | – Secondary spermatocyte |
| (4) Ovum | – Spermatid |

43. The limbic system is formed by;

- (1) hypothalamus, epithalamus, amygdala and hippocampus.
(2) the inner parts of cerebral hemispheres and a group of associated deep structures like amygdala, hippocampus etc.
(3) corpora quadrigemina and hippocampus.
(4) midbrain and hindbrain.

44. Milk secreted from the cells of alveoli of mammary lobes reaches nipple through lactiferous duct (L), mammary duct (M), mammary tubule (T) and mammary ampulla (A) in the following order.

- (1) TMAL (2) MTLA
(3) MTAL (4) ATML

45. All the following statements are correct about 'Saheli', but one is wrong. Which of the following options is **wrong**?

- (1) Oral contraceptive pill for females.
(2) Contains non-steroidal preparation.
(3) It is 'once a week pill'.
(4) It increases the phagocytosis of the sperm within the uterus.

46. 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 **Assertion (A)** and **Reason (R)** are correct and **Reason (R)** is the correct explanation of **Assertion (A)**.
(2) Both **Assertion (A)** and **Reason (R)** are correct but **Reason (R)** is not the correct explanation of **Assertion (A)**.
(3) **Assertion (A)** is correct but **Reason (R)** is not correct.
(4) **Assertion (A)** is not correct but **Reason (R)** is correct.

47. Pneumonia is a disorder of;

- (1) Skin & eyes
(2) Digestive System
(3) Excretory system
(4) Respiratory system

48. Choose the **incorrect** match.

- (1) P wave – Depolarisation of atria
(2) Q wave – Excitation of atria
(3) QRS complex – Depolarisation of ventricle
(4) T wave – Repolarisation of ventricle



- 49.** Gene pool is;
- (1) genotype of an individual in a population.
 - (2) different genes of all individuals of a species found in an area.
 - (3) pool of artificially synthesised genes.
 - (4) genes of a genus.

- 50.** Example of physiological barriers are;
- | | |
|-----------------|---------------------|
| (1) PMNL | (2) Saliva in mouth |
| (3) Interferons | (4) Skin |



PW Web/App - <https://smart.link/7wwosivoicgd4>

Library- <https://smart.link/sdfez8ejd80if>