



ZOOLOGY

SECTION-A

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

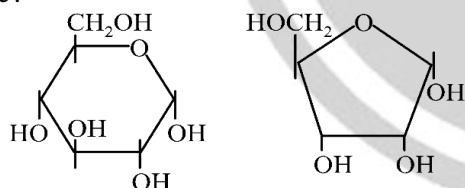
Assertion (A): When a particular restriction enzyme cuts strand of DNA, overhanging stretches or sticky ends are formed.

Reason (R): Some restriction enzymes cut the strand of DNA a little away from the centre of 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.

2. Which of the following options **correctly** identifies the structural formula shown in the figure?



- (1) **A-** Fructose, **B-** Ribose
- (2) **A-** Glucose, **B-** Deoxyribose
- (3) **A-** Glucose, **B-** Ribose
- (4) **A-** Glucose, **B-** Fructose

3. Mark the **incorrect** statement.

- (1) Each Testis has about 250 compartments called testicular lobules.
- (2) Each testicular lobule has 1-3 highly coiled seminiferous tubules.
- (3) Each seminiferous tubule is lined on its inside by male germ cells only.
- (4) Leydig cells are found in the interstitial spaces of testicular lobules.

4. **Statement I:** Low temperature preserves the enzymes in temporarily inactive state.

Statement II: High temperature denatures enzymes.

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

5. When two species of different genealogy come to resemble each other as a result of adaptation, the phenomenon is termed;

- (1) Microevolution
- (2) Convergent evolution
- (3) Co-evolution
- (4) Divergent evolution

6. Find the **incorrect** matching.

- (1) Essential oils – Lemon grass oil
- (2) Terpenoids – Monoterpenes, diterpenes
- (3) Polymeric substances – Rubber, gums, cellulose
- (4) Drugs – Carotenoids, anthocyanins

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

List - I		List - II	
(A)	Cellular barrier	(I)	Interferons
(B)	Cytokine barrier	(II)	Mucus
(C)	Physical barrier	(III)	Neutrophils
(D)	Physiological barrier	(IV)	HCl in gastric juice

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

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

List-I		List-II	
(A)	Saltation	(I)	Darwin
(B)	Formation of life was preceded by chemical evolution	(II)	Louis Pasteur
(C)	Reproductive fitness	(III)	Hugo de Vries
(D)	Life comes from pre-existing life	(IV)	Oparin and Haldane

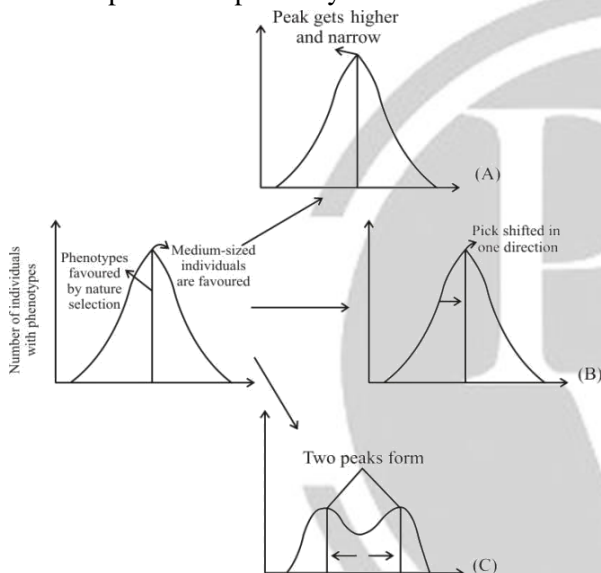
- (1) (A) – (III), (B) – (IV), (C) – (I), (D) – (II)
- (2) (A) – (IV), (B) – (III), (C) – (II), (D) – (I)
- (3) (A) – (II), (B) – (III), (C) – (I), (D) – (IV)
- (4) (A) – (I), (B) – (IV), (C) – (III), (D) – (II)



9. Which of the following statement is **not correct** regarding malarial infection?

- (1) *Plasmodium* enters the human body as sporozoites through the bite of freshly moulted female *Anopheles* mosquito.
- (2) High fever recurring every three to four days.
- (3) Sporozoites initially multiply within the liver cells and then attack the RBCs resulting in their rupture.
- (4) When a female *Anopheles* mosquito bites an infected person, these parasites enter the mosquito's body and undergo further development.

10. In this figure, which kind of selection does A, B and C represent respectively?



- (1) A : Stabilizing, B : Disruptive, C : Directional
- (2) A : Stabilizing, B : Directional, C : Disruptive
- (3) A : Disruptive, B : Stabilizing, C : Directional
- (4) A : Directional, B : Disruptive, C : Stabilizing

11. Venereal diseases can spread through;

- (1) using sterile needles.
- (2) transfusion of blood from infected person.
- (3) infector mother to foetus.
- (4) kissing.
- (5) inheritance.

Choose the **correct** answer from the option given below.

- (1) (1) and (3) only
- (2) (1), (2), and (3) only
- (3) (2), (3) and (4) only
- (4) (2) and (3) only

12. Along with hypothalamus, limbic system is involved in;

- I. thermoregulation.
- II. regulation of sexual behaviour.
- III. expression of emotional reactions.
- IV. motivation.

Choose the **correct** option.

- (1) II, III & IV
- (2) I & II
- (3) I, III & IV
- (4) I & IV

13. Common cold differs from pneumonia in that:

- (1) pneumonia is a communicable disease whereas the common cold is a nutritional deficiency disease.
- (2) pneumonia can be prevented by a live attenuated bacterial vaccine whereas the common cold has no effective vaccine.
- (3) pneumonia is caused by a virus while the common cold is caused by the bacterium *Haemophilus influenzae*.
- (4) pneumonia pathogen infects alveoli whereas the common cold affects nose and respiratory passage but not the lungs.

14. The enzyme that seals 5' PO₄ and 3' OH polynucleotide ends while creating a recombinant DNA molecule is;

- (1) alkaline phosphatase.
- (2) DNA ligase.
- (3) DNase.
- (4) restriction endonuclease.

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

List-I		List-II	
(A)	Pills	(I)	Intra Uterine Device
(B)	Condoms	(II)	Prevent ovulation
(C)	Vasectomy	(III)	Prevent sperm from reaching the cervix
(D)	Cu-T	(IV)	Semen contain no sperm

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

16. Which group of animals respire through lungs?

- (1) Earthworm and insects
- (2) Sponges, coelenterates and flatworms
- (3) Fishes and aquatic arthropods
- (4) Amphibians, reptiles, birds and mammals



17. Which of the following statements is/are **not correct** regarding connective tissue?

- (i) They are the most abundant and widely distributed in the body of complex animals.
 - (ii) They connect and support other tissues.
 - (iii) They include diverse tissues such as bones, cartilage, tendons, adipose, and other loose connective tissues.
 - (iv) They form the internal and external lining of many organs.
 - (v) Blood is an example of a fluid connective tissue.
- (1) (iv) only (2) (v) only
(3) (i) and (ii) (4) (ii) and (v)

18. Which of the following conditions are found in the alveoli of lungs?

- I. High pO_2
- II. Low pCO_2
- III. High pCO_2
- IV. Low pO_2
- V. Low H^+
- VI. High H^+

Choose the **correct** option.

- (1) I, III and V
(2) III, IV and VI
(3) I, IV and VI
(4) I, II and V

19. The ____A____ releasing the ADP and P_i goes back to its ____B____ state. A new ATP binds and the cross bridge is ____C____. The ATP is again hydrolysed by the ____D____ head and cycle of cross bridge formation and breakage is repeated causing further sliding

Fill the appropriate options in the blanks A, B, C and D.

- (1) A-Myosin, B-relaxed, C-broken, D-myosin
(2) A-Actin, B-relaxed, C-broken, D-myosin
(3) A-Myosin, B-relaxed, C-broken, D-actin
(4) A-Actin, B-relaxed, C-broken, D-actin

20. In pBR322, amp^R and tet^R genes are present. When we ligate a foreign DNA at Pst I site, then recombinant plasmids will lose the resistance to the;

- (1) Ampicillin. (2) Tetracycline.
(3) Both (1) & (2). (4) None of these.

21. **Statement I:** Insulin for curing diabetes should only come from animals.

Statement II: Insulin has three peptide chains in its active stage.

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

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

List-I		List-II	
(A)	Gout	(I)	Decreased levels of estrogen
(B)	Osteoporosis	(II)	Low Ca^{++} ions in the blood
(C)	Tetany	(III)	Accumulation of uric acid crystals
(D)	Muscular dystrophy	(IV)	Auto immune disorder
		(V)	Genetic disorder

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

23. Hormones stored and released from neurohypophysis are;

- (1) thyroid stimulating hormone and oxytocin.
(2) oxytocin and vasopressin.
(3) follicle stimulating hormone and luteinizing hormone.
(4) prolactin and vasopressin.

24. What is meant by the term 'Darwin fitness'?

- (1) The ability to survive and reproduce
(2) High aggressiveness
(3) Healthy appearance
(4) Physical strength

25. When body **can not** differentiate between its own cells and foreign cells, all it is referred to as;

- (1) passive immunity. (2) active immunity.
(3) autoimmunity. (4) immunodeficiency.

26. Cry protein is obtained from;

- (1) *Bacillus thuringiensis*.
(2) *Bacillus subtilis*.
(3) *Agrobacterium tumefaciens*.
(4) *E. coli*.



27. Which of the following is **not** observed during contraction of a muscle fibre?
- (1) A band retain the length
 - (2) Shortening of sarcomere
 - (3) I band gets reduced
 - (4) H zone retains the length
28. Two types of cells present in the lining of seminiferous tubules are _____ and _____.
(1) Leydig cells, sertoli cells
(2) Male germ cells, sertoli cells
(3) Spermatogonium, spermatids
(4) Primary oocyte, leydig cells
29. Percentage of oxygen transported by haemoglobin is;
(1) 93 (2) 95
(3) 97 (4) 99
30. The notochord is formed on which side of the body during embryonic development ?
(1) Lateral (2) Ventral
(3) Dorsal (4) Bilateral
31. Hydra is;
(1) fresh water form, radially symmetrical and diploblastic.
(2) marine, radially symmetrical and diploblastic.
(3) fresh water form, bilaterally symmetrical and diploblastic.
(4) marine, radially symmetrical and triploblastic.
32. The junction that help to stop substances from leaking is;
(1) tight junction.
(2) gap junction.
(3) adhering junction.
(4) all of these.
33. Endothelium lining of blood vessel is formed of;
(1) ciliated epithelium.
(2) columnar epithelium.
(3) cuboidal epithelium.
(4) simple squamous epithelium.
34. Individuals with which blood group have both A and B antigens on the surface of their RBCs?
(1) A +ve (2) AB +ve
(3) A -ve (4) B +ve
35. Presence of which of the following substances **does not** favour formation of large quantities of diluted urine?
(1) Renin (2) Coffee
(3) Beer, Alcohol (4) ANF

SECTION-B

36. Frogs differ from humans in possessing;
(1) hepatic portal system.
(2) paired cerebral hemispheres.
(3) nucleated red blood cells.
(4) thyroid as well as parathyroid.
37. Thoracic cage of man is formed of;
(1) ribs and sternum.
(2) ribs, sternum and thoracic vertebrae.
(3) ribs, sternum and lumbar vertebrae.
(4) ribs, thoracic vertebrae.
38. Mark the **correct** statement.
(1) The anamnestic response against a pathogen is highly intensified.
(2) The T-lymphocytes produce antibodies.
(3) The B-lymphocytes produce cell mediated immune response.
(4) An antibody is represented by H_2L_4 .
39. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.
Assertion (A): Fatigue is inability of muscle to relax.
Reason (R): It is due to lactic acid accumulation by repeated contractions.
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 but **Reason (R)** is not the correct explanation of **Assertion (A)**.
(3) Both **Assertion (A)** and **Reason (R)** are correct and **Reason (R)** is the correct explanation of **Assertion (A)**.
(4) **Assertion (A)** is correct but **Reason (R)** is not correct.
40. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.
Assertion (A): The bulbourethral gland is a male accessory gland.
Reason (R): Its secretion helps in the lubrication of the penis, thereby facilitating reproduction.
In the light of the above statements, choose the **correct** answer from the options 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) Both **Assertion (A)** and **Reason (R)** are incorrect.







41. Ball and socket joint is found in;
(1) shoulder joint.
(2) hip joint.
(3) between atlas and axis.
(4) both (1) and (2)
42. Receptor sites for neurotransmitters are present on;
(1) membrane of synaptic vesicles.
(2) pre-synaptic membrane.
(3) tips of axon.
(4) post-synaptic membrane.
43. Innermost layer of adrenal cortex secrete mainly;
(1) aldosterone.
(2) cortisol.
(3) androgenic steroids.
(4) epinephrine.
44. Ovary is connected to pelvic wall by;
(1) Tendons (2) Ligaments
(3) Muscles (4) Bones
45. Analogous organs arise due to;
(1) Divergent evolution
(2) Artificial selection
(3) Genetic drift
(4) Convergent evolution
46. Which of the following two statements are **correct**?
(i) Medical termination of pregnancy (MTP) during first trimester is generally safe.
(ii) Generally chances of conception are nil until mother breast-feeds the infant upto two years.
(iii) Intrauterine devices like Cu-T are effective contraceptives.
(iv) Contraception pills may be taken upto one week after coitus to prevent conception.
(1) (i) and (iii) (2) (i) and (ii)
(3) (ii) and (iii) (4) (iii) and (iv)

47. DNA cannot pass through a cell membrane as;
(1) it is too big to cross the membrane.
(2) it is a hydrophilic molecule.
(3) membrane does not have specific proteins to facilitate the transport.
(4) none of these.

48. Which of the following companies started selling humulin in the year 1983?

- (1) Eli Lilly (2) Ranbaxy
(3) GEAC (4) Sun pharma

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

	Animal	Phylum	Characters
(1)		Cnidaria	Found in polyp form, it's common name is jellyfish
(2)		Cnidaria	Coral-made up of CaCO_3
(3)		Aschelminthes	Developed muscular pharynx, Pseudocoelomate
(4)		Arthropoda	Body is covered by calcareous shell, Respiration by book-lungs

50. Bones and cartilages are considered as;
(1) loose and dense connective tissue respectively.
(2) dense regular and dense irregular tissue respectively.
(3) specialised connective tissue.
(4) are loose connective tissue.

