

If the questions attempted are in excess of the prescribed number, only the questions attempted first up to the prescribed number shall be valued and the remaining ones ignored.

Answers may be given either in English or in Bengali but all answers must be in one and same language.

GROUP - A

1. Answer any ten questions :-

- What is Cooley's Anemia ?
- What do you mean by Back packers Disease ?
- What is hn RNA ?
- What is Bombay phenotype ?
- What do you mean by saltatory condition ?
- Mention the importance of Primer of PCR.
- What is Shuttle vector ?
- Define Voltinism and give examples.
- Mention four important uses of Shellac.
- What is Glisson's capsule ?
- What is Robertsonian translocation ?
- What is Line-Weaver Burk plot ?
- What are Chloride Shift and its significance ?

4 x 10

GROUP - B

Answer any four questions :-

2. Distinguish between :-

- Holoblastic cleavage and Meroblastic cleavage
- Endotheliochorial and hemochorial placenta
- Fast Block and Slow block of polyspermy
- Class I restriction enzyme and Class II restriction enzyme.

4 x 5

3. Design suitable experimental crosses by which you can detect and isolate both sex linked visible and lethal mutations in *Drosophila*. What do you mean by alternate splicing ? Mention the role of DSX-M and DSX-F protein in sex determination process of *Drosophila*.

8 + 4 + 8

4. What do you mean by R and T forms of Haemoglobin ? Define Bohr and Haldane effects and explain their significance in O₂ and CO₂ transport. Explain the role of Ca²⁺ in the regulation of muscle contraction.

4 + 8 + 8

5. Write briefly on the endocrine disorders associated with deficiency of Thyroxine and somatotrophic hormones in human. State the basic principles of RIA and ELISA. What is the source of Calcitonin ? Comment on the process of cryopreservation of gametes.

6+6+2+6

6. Pseudoalleles are not true alleles but are the members of a complex locus - Explain this statement. Explain the role of various enzymes involved in homologous recombination. Design an experiment to show that chromosomal replication is also semiconservative.

6+6+8

7. What is Lambert Beer's law for absorption spectroscopy ? What is the importance of R_f value in TLC ? State the fundamental difference between RAPD and RFLP.

4+4+12

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GROUP - CAnswer any four questions :-

8. What do you mean by allometric growth ? Explain the evolution of modern day Horse with pictorial illustration. 4 + 16
9. Define mimicry and coloration. What are the different zoogeographical realms ? Mention their names with faunal examples. What is the significance of Wallace Line ? 8 + 8 + 4
10. Comment on :-
(a) Composite fish culture
(b) Pebrine disease
(c) Fish louse
(d) Chandraki. 5 x 4
11. Comment on the following :-
What is Apolysis ? Mention the function of Mehlis gland. What is cysticercus cellulosae ? Define Measly pork. What is the difference between schizogony and sporogony ? Mention the importance of signet ring stage.. 3+3+3+3+6+2
12. What are the different types of cattle breed found in India ?
What do you mean by Dead Heart and White ear head ? Define systematic and contact insecticides. Mention the scientific name of Rice Hispa and one stored grain pest. 6+4+6+4
13. Mention the importance of vaccination. Describe the structure of Immunoglobulin G. Discuss the pathophysiology of Tuberculosis.
What are cytokine and their functions ? 4+6+4+6

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