1. Answer any four of the following:

(a) What is correlation? Describe various methods employed in study of correlation with example.

(b) Describe polymerase chain reaction (PCR) and add a note on its applications.

(c) Give an account of the endocrine control of female reproduction.

(d) Explain the asexual and sexual modes of reproduction in protozoa.

(e) Write a note on Genome information.

2. Answer the following sub-questions:

(a) Explain the structure and functions of Golgi apparatus.

(b) Describe the construction of linkage maps.

3. Answer the following sub-questions:

(a) Write a note on cell mediated immunity.

(b) What is mutagenesis? Describe the mechanism of mutagenesis.
4. Answer the following sub-questions:
   (a) Explain the Dipolar nature of water molecule with its significance.
   (b) What is DNA replication? Describe the chemistry of DNA replication.

5. Answer the following sub-questions:
   (a) Describe the structure and biological importance of glycogen.
   (b) Explain the initiation of translation in prokaryotes.

SECTION - C

6. Answer the following sub-questions:
   (a) Describe sliding filament theory of muscle contraction in vertebrates.
   (b) Explain the process of spermatogenesis.
   (c) Write an account of the disease Trypanosomiasis.

7. Answer the following sub-questions:
   (a) Explain the role of liver in the process of digestion in vertebrates.
   (b) Describe the development of frog embryo up to gastrulation.
   (c) Give economic importance of fresh water fishery.

SECTION - D

8. Answer the following sub-questions:
   (a) Describe the types of scales in fishes.
   (b) Write on biological nomenclature of species.
   (c) With the help of a diagram, explain carbon cycle in nature.

9. Answer the following sub-questions:
   (a) Write a note on flying adaptations in birds.
   (b) Explain the classification of biota on the basis of five kingdoms.
   (c) Write an account of the significance of biodiversity and its preservation.

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