

Time: 3 Hrs

Marks: 100

N.B.

1. All questions are compulsory
2. All questions carry equal marks.
3. Draw neat and labelled diagrams wherever necessary.
4. Figures to the right indicate full marks.
5. Answer question in proper order.

- Q.1 Answer the following: (Any Two) : 20**
- a) Explain genetic causes of Huntington's disease and enlist its symptoms.
 - b) Describe the effects of non ionizing radiations on DNA.
 - c) Describe the mechanism of photoreactivation.
- Q.2 Describe the following: (Any Two) : 20**
- a) DNA polymerases used in recombinant DNA technology.
 - b) Construction of genomic-DNA and cDNA libraries.
 - c) Methodology of Southern blotting.
- Q.3 Answer the following: (Any Two) : 20**
- a) Describe the chromosomal aberrations involved in Robertsonian disorders.
 - b) Briefly describe genetic disorders associated with breast cancer.
 - c) Discuss methodology and applications of amniocentesis.
- Q.4 Explain the following: (Any Two) : 20**
- a) NCBI.
 - b) Protein sequence databases.
 - c) Types of sequence alignments.
- Q.5 Write short notes on: (Any Four) : 20**
- a) Leucine zipper motifs in regulatory proteins.
 - b) Use of T4 DNA ligase in gene cloning.
 - c) Prader Willi syndrome.
 - d) Metabolomics.
 - e) Tautomeric shifts.
 - f) Intercalating agents.

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