



- Notes :
1. All questions are compulsory.
 2. All questions carry equal marks.
 3. Draw well labelled diagram wherever necessary.

1. Explain why the DNA replication process is referred as semiconservative replication of DNA. **16**

OR

Write notes on

- a) What is Base Excision Repair (BER)? Explain various steps involved in BER.
- b) What is cot 1/2 curve? How cot 1/2 related to genome complexity.

2. Outline molecular events that leads to synthesis of primary transcript by RNA polymerase II. **16**

OR

Write notes on.

- a) With neat labelled diagram, explain the regulation of Lac operon.
- b) Describe how nucleotide sequence of RNA molecule results in the production of polypeptide.

3. What is RNA interference (RNAi)? Outline the molecular events that lead to gene silencing by the RNA I process. **16**

OR

Write notes on.

- a) What is Yeast Artificial Chromosomes (YAC's)? And how it is used in recombinant DNA technology?
- b) What is Polymerase Chain Reaction (PCR)? Explain how PCR is used in cloning of gene.

4. What is Restriction Fragment Length Polymorphism (RFLP)? Comment on use of RFLP in forensic science and disease prognosis. **16**

OR

Write notes on.

- a) What is Hybridoma Technology? Comment on application of monoclonal antibodies.
- b) Comment on Biosensors and their applications in the biomedical field.

5. Attempt the following. **16**

- a) Transcription coupled Repair.
- b) IS elements.
- c) Restriction enzymes.
- d) Single cell proteins.
