

**GSM/D-21****953****MOLECULAR BIOLOGY****Paper–VII**

Time Allowed : 3 Hours]

[Maximum Marks : 40

**Note :** Attempt **five** questions in all, selecting **two** questions from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

**Compulsory Question**

1. Explain the following briefly: 1×8=8
- |                               |   |
|-------------------------------|---|
| (i) B form of DNA             | (ii) Nucleosome                           |
| (iii) Plasmid                 | (iv) Photo reactivation repair mechanisms |
| (v) Inhibitors of translation | (vi) Wobble hypothesis                    |
| (vii) Attenuation             | (viii) Homologous recombination.          |

**UNIT-I**

2. (a) Describe two classical experiments which demonstrated that DNA is the genetic material. 5
- (b) Define genome. Add a note on organization of human genome. 3
3. (a) Differentiate between IS elements and Transposable elements. 2
- (b) Describe the origins and initiations of DNA replication in prokaryotes and eukaryotes. 3
- (c) Discuss the rolling circle model of DNA replication. 3
4. (a) Enlist the various types of DNA damages and its causes. 3
- (b) Give an account of excision repair system for DNA. 5

**UNIT-II**

5. (a) Describe the general properties of the genetic code. 4
- (b) Write a note on eukaryotic RNA polymerases. 4
6. (a) Give an account of mechanism of protein synthesis in prokaryotes. 4
- (b) Describe the Ara operon model for regulation of gene activity. 4
7. Write short notes on the following:
- (a) Site specific mechanism of DNA recombination. 4
- (b) Catabolite repression. 4