

Roll No.

(011/17-I)

5203

B. Sc. EXAMINATION

(Third Semester)

BIOTECHNOLOGY

Paper VII

Molecular Biology

Time : Three Hours

Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory (short answer type). Select *Four* others, selecting *two* questions from each Unit. All questions carry equal marks.

1. (a) Define Purines and Pyrimidines.
- (b) Differentiate between histone and non-histone proteins.
- (c) What is Central Dogma ?
- (d) What is Genetic code ?

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- (e) Name Initiation Codons.
- (f) Write a note on bacterial Genome.
- (g) What is Wobble Hypothesis ?
- (h) What is a Monocentric Gene ? 8

Unit I

- 2. Explain the experiments which prove that DNA is a genetic material. 8
- 3. (a) Explain DNA replication in prokaryotes. 5
- (b) What is rolling circle DNA replication ? 3
- 4. Write notes on the following : 2+3+3=8
 - (a) Plasmid
 - (b) Causes of Mutations
 - (c) Transposons.

Unit II

- 5. (a) Write a detailed note on prokaryotic transcription process. 6
- (b) Define TATA box. 2

6. (a) Explain the Operon concept of Gene Regulation with an example. 4
- (b) Distinguish between Gene expression in Prokaryotes and Eukaryotes. 4
7. (a) Explain different methods of recombination in prokaryotes. 6
- (b) What are different methods of Recombination in Eukaryotes (Very brief note). 2