

B.Sc. 4th Semester (New Scheme)

Examination, April-2018

BIOTECHNOLOGY

Paper- BT-402

Molecular Biology

Time allowed : 3 hours]

[Maximum marks : 40

Note: *Question No. 1 is compulsory and attempt any four more questions selecting one question from each unit given below. All questions carry equal marks.*

1. Write the notes on following:

1 × 8 = 8

- (a) Z-DNA
- (b) Nucleoside
- (c) Point Mutation
- (d) Gene
- (e) Promotor
- (f) Sigma factor
- (g) Stop codon
- (h) Ribosome

Unit-I

2. What is the replication? What are the differences between Prokaryotic & Eukaryotic DNA replication. 8
3. Write the notes on any two: 8
- (a) DNA Polymerase

- (b) Structure of DNA
- (c) Fidelity of replication

Unit-II

What is DNA damage? Describe the various causes of DNA damage in detail. 8

Write the notes on any *two*: 8

- (a) Mechanism of DNA Repair
- (b) Photoreactivation
- (c) Mismatch repair

Unit-III

6. What are the differences between the prokaryotic and eukaryotic transcription? 8

7. Write the notes on any *two*: 8

- (a) RNA polymerase
- (b) Types of RNA & their functions
- (c) RNA Processing

Unit-IV

8. What is translation? Describe the molecular mechanism of protein synthesis in prokaryotic system. 8

9. Write the notes on any *two*: 8

- (a) Regulation of gene expression (Operon Model)
- (b) Post-translational modification of proteins