



DCBT – 401

IV Semester B.Sc. Examination, July/August 2024  
(NEP Scheme) (Freshers and Repeaters)  
BIOTECHNOLOGY (Paper – IV)  
Molecular Biology

Time : 2½ Hours

Max. Marks : 60

**Instruction :** Draw *neat* labeled diagram *wherever* necessary.

SECTION – A

- I. Write short notes on the following. (5×2=10)
- 1) Nucleic acids.
  - 2) Polycistronic mRNA.
  - 3) Conservative replication.
  - 4) DNA damage.
  - 5) Polyadenylation.

SECTION – B

- II. Answer **any four** of the following. (4×5=20)
- 6) Explain clover-leaf model of t-RNA. Add a note on its function.
  - 7) Give an account on enzymes involved in replication.
  - 8) Briefly explain rolling circle model of replication.
  - 9) Enumerate on mismatch repair mechanism.
  - 10) Give an account on prokaryotic RNA polymerase.

SECTION – C

- III. Answer **any three** of the following. (3×10=30)
- 11) Explain the various forms of DNA. Add a note on its functions.
  - 12) Discuss the process of transcription in eukaryotes.
  - 13) Elaborate on the characteristics of genetic code.
  - 14) Discuss the mechanism of Lac-operon.
  - 15) Enumerate on steps involved in translation in prokaryotes.
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