



RAN-2003001105020004

B. Sc. Biotech (Old) (Sem.-V) Examination October - 2025

BT-14: Introduction to Molecular Biology-II

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Figures to the right indicate full marks.
- (3) Draw neat and labelled diagrams wherever necessary.

Seat No.:

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Student's Signature

Q.1. Attempt the following questions in short (Any Four)

8

- a. Define: Structural Gene.
- b. Explain holoenzyme of RNA polymerase.
- c. Which RNA polymerases are responsible for synthesis of mRNA, tRNA, and rRNA in eukaryotes?
- d. Function of CRO gene.
- e. Differentiate between positive and negative regulation.

Q.2. Attempt Any Two:

14

- a. Transcription in Eukaryotes.
- b. Elongation and Termination phases of protein synthesis.
- c. Write note on tRNA and amino acid activation.

Q.3. Explain in detail Any Two:

14

- a. Protein maturation and secretion.
- b. Lactose operon: negative transcriptional control.
- c. tRNA activation and basic matured form of tRNA.

Q.4. Attempt Any Two of the following:

14

- a. Riboswitches and their regulatory role.
- b. Quorum sensing and sporulation in bacteria.
- c. Regulatory proteins controlling transcription initiation.