Exam. Code : 107404
Subject Code : 2306

B.Sc. (Bio-Technology) 4th Semester

MOLECULAR BIOLOGY

Paper—BT-6

Time Allowed—3 Hours] [Maximum Marks—40

Note :– Attempt **all** the questions of Section A, **five** questions from Section B and **two** questions from Section C.

SECTION—A

Explain the following briefly :

1. Selfish DNA
2. Replicon
3. RNA primers
4. Conservative model of DNA replication
5. Major groove of DNA
6. Z form of DNA
7. C form of DNA
8. Episome. 1×8=8

SECTION—B

1. Give various steps of the translation initiation in prokaryotes.

2. Draw well labelled structure of the transcription bubble.
3. Give an experimental setup to demonstrate semiconservative mode of DNA replication.
4. Explain methylation and acetylation of histones.
5. Explain trp operon for control of tryptophan biosynthesis.
6. Explain Rolling-circle replication.
7. Describe eukaryotic transcription initiation mechanism.
8. Describe mechanism of translation termination in prokaryotes. 5×4=20

SECTION—C

1. Explain mechanism of chain elongation during protein synthesis.
2. Give mechanism of rho-dependent and rho-independent transcription termination in prokaryotes.
3. What are nucleosomes ? Describe its various components in detail.
4. Explain various insertion elements. What are uses of transposons ? 2×6=12