

Exam. Code : 206601
Subject Code : 5005

M.Sc. Bio-Informatics 1st Semester

INTRODUCTION TO MOLECULAR BIOLOGY,
BIOINFORMATICS & BIOLOGICAL DATABASES

Paper—BI-515

Time Allowed—3 Hours] [Maximum Marks—75

Note :— There are *eight* questions. Candidates are required to attempt any *five* questions. All questions carry equal marks.

SECTION—A

1. What is central dogma ? Explain mechanism of DNA replication in prokaryotes.
2. What are transcription factors ? Discuss different steps involved in transcription.

SECTION—B

3. (a) What is a ribosome ? Discuss structure of ribosome and its role in translation.
(b) What is Bioinformatics ? Discuss any two applications of Bioinformatics.

4. Explain the following and mention its role in translation :
- (a) t-RNA
 - (b) Genetic code
 - (c) Aminoacyl tRNA synthetase.

SECTION—C

5. What is a biological database ? Discuss different types of biological databases with examples.
6. What is a pattern database ? Discuss significance of Prosite and Pfam.

SECTION—D

7. What is Rfam ? Discuss features and significance of PDB database.
8. Explain the significance of file formats. Discuss PDB and SMILES format.