

**M. SC. (BIOTECHNOLOGY) SEM-IV (2012 COURSE)(CHOICE
BASED CREDIT SYSTEM) : WINTER - 2017**

SUBJECT: BIOINFORMATICS

Day: **Friday**
Date: **03/11/2017**

W-2017-0980

Time: **02.00 PM TO 05.00 PM**
Max Marks: **60**

N.B:

- 1) Q.No.1 and Q.No 5 are **COMPULSORY** out of the remaining solve any **TWO** From each sections.
- 2) Answer to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION-I

- Q.1** Define: (10)
- | | |
|-------------------|----------------------------|
| a) Bioinformatics | c) Cloud computing |
| b) Supercomputing | d) Primary storage devices |
| e) Transfec | |
- Q.2** Write short notes on: (ANY TWO) (10)
- a) Scope of Bioinformatics
 - b) High throughput technologies
 - c) Microarray
- Q.3** Answer the following: (ANY TWO) (10)
- a) Explain in brief secondary nucleotide databases with example.
 - b) Write in detail on UniProt database.
 - c) What are different genome browsers? Explain with example.
- Q.4** Write in detail about PDB database. How it is useful in structure & sequence analysis? (10)

OR

Describe different protein structure databases. Highlights their important features.

SECTION-II

- Q.5** Explain in brief: (10)
- | | |
|--------------------|----------------|
| a) ProCheck | c) PubMed |
| b) Enzyme database | d) Active site |
| e) SNP | |
- Q.6** Write short notes on: (ANY TWO) (10)
- a) BLAST
 - b) Protein 3D structure visualization tools
 - c) Protein structural hierarchy
- Q.7** Answer the following: (ANY TWO) (10)
- a) Differentiate between Entrez & SRS.
 - b) How Ramachandran plot is useful in protein structure validation?
 - c) What are the applications of protein 3D structure modelling?
- Q.8** Write in detail about the applications of bioinformatics in medicine, agriculture & environmental studies. (10)

OR

What is mutation, SNP, indel, inversion and gene fusion? What are the applications of bioinformatics in different disciplines?

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