

**M. Sc. (Biotechnology) Sem-IV (2012 Course)(Choice Based Credit  
System) : SUMMER - 2019  
SUBJECT : BIOINFORMATICS**

Day : Saturday  
Date: : 13/04/2019

**S-2019-1421**

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

**N.B.**

- 1) Q.1 and Q.5 are **COMPULSORY**. Out of the remaining solve any **TWO** from each Sections.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in *SAME* answer book.

**SECTION – I**

- Q.1** Define the following: (10)
- a) Bioinformatics
  - b) HTS
  - c) Microarray
  - d) Super computer
  - e) Transfec
- Q.2** Answer the following: (10)
- a) Explain any two genome sequencing techniques in brief.
  - b) Describe the computer hardware and software prerequisite for bioinformatics work.
- Q.3** Write short note on: (10)
- a) Flat file formats
  - b) UniProt
- Q.4** Differentiate between the following: (10)
- a) SCOP and CATH
  - b) Primary and secondary storage devices

**SECTION – II**

- Q.5** Give two examples of: (10)
- a) Literature databases    b) Chemical databases    c) Pathway databases
  - d) Genome databases    e) Structure visualization tools
- Q.6** Answer the following: (10)
- a) Write a note on Entrez and SRS.
  - b) Explain BLAST algorithm in brief.
- Q.7** Write notes on: (10)
- a) Describe different protein structural levels with emphasis on the bonds involved for the same.
  - b) What is homology modeling? Explain the steps in detail.
- Q.8** Explain in detail applications of bioinformatics in different fields. (10)
- OR**
- Write briefly on structure validation tools.
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