M. Sc. Bioinformatics Sem.-I (C.B.C.S.) (2013 Course) / Advanced Diploma in Bioinformatics Sem.-I (C.B.C.S.) (2013 Course) :

SUMMER - 2019

SUBJECT: BIOLOGICAL INFORMATICS

Day: Thursday
Date: 04/04/2019

S-2019-1460

Time: 10.00 AM TO 01.00 PM
Max Marks: **60**

N.B

1) **Q.No.1** and **Q.No.5** are **COMPULSORY**. Out of the remaining, attempt **ANY TWO** from each section.
2) Answer to both the sections should be written in SAME answer books.
3) Figures to the right indicate **FULL** marks.
4) Draw neat labeled diagram **WHENEVER** necessary.

SECTION –I

Q.1 Enlist two names of the following databases and their domains: **(10)**

a) Literature Databases
b) Nucleotide Databases
c) Gene Expression databases
d) Pathway databases
e) Chemical databases

Q.2 Answer **ANY TWO** of the following: **(10)**

a) Why different filters are utilized in databases?
b) Write briefly on any two sequence submission tools.
c) Describe NCBI's search engine.

Q.3 Write short notes on **ANY TWO** of the following: **(10)**

a) PIR-PSD
b) DDBJ tools
c) Bioinformatics Scope

Q.4 Write in detail on Smith –Waterman and Needleman-Wunch algorithm. **(10)**

OR

Give an overview of scoring matrices for nucleic acids and proteins.

SECTION II

Q.5 Explain the provision of following tools: **(10)**

a) LALIGN
b) T-coffee
c) SBASE
d) PVS
e) Mol4D

Q.6 Answer **ANY TWO** of the following: **(10)**

a) Enlist and explain all types of BLAST.
b) Briefly explain MSA algorithm.
c) Explain motifs, pattern and profiles concept.

Q.7 Write short notes on **ANY TWO** of the following: **(10)**

a) HGP
b) PDB
c) Pfam

Q.8 Explain in detail functioning of primer designing tools. **(10)**

OR

What do you mean by DNA/RNA sequence analysis? How do you do it? Explain with example.

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