G-4/404(B)/21　　　　　　　Roll No..…………..

M.Sc. IV Semester Examination, 2021

BIOCHEMISTRY

Paper IV

(Bioinformatics)

Time : 3 Hours]　　　　　　　[Maximum Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections. **Section A** is objective type/multiple choice questions with no internal choice. **Section B** is short answer type with internal choice. **Section C** is long answer type with internal choice.*

SECTION 'A'
(Objective Type Questions)

Choose the correct answer :　　　　　　**8 × 1 = 8**

1. Who coined the term Bioinformatics and when ?

   (a) Paulien Hogeweg, 1979

   (b) Dr. Margaret Oakley Dayhoff, 1976

   (c) Robert Ledley, 1978

   (d) David W. Mount, 1977

2. Which one of the following is not a primary nucleic acid database ?

   (a) Gene Bank　　　　　(b) DDBJ

   (c) EMBL　　　　　　　(d) TREMBL

3. Which one of the following is a primary protein database ?

   (a) SWISS PROT　　　　(b) EMBL

   (c) DDBJ　　　　　　　(d) NCBI

4. ………is a secondary database.

   (a) DDBJ　　　　　　　(b) PROSITE

   (c) NRDB　　　　　　　(d) OWL

5. ………is a composite database.

   (a) PROSITE　　　　　(b) DDBJ

   (c) NRDB　　　　　　　(d) EMBL

6. ………is a primary protein structure database.

   (a) PDB　　　　　　　(b) PubChem

   (c) ChemBank　　　　　(d) SCOP

7. Which one of the following is a secondary protein structure database ?

   (a) PubChem　　　　　(b) PDB

   (c) ChemBank　　　　　(d) SCOP

[3]

\ **8.** FASTA format starts with ....symbol.

   (a) /   (b) *

   (c) >   (d) #

SECTION 'B'   4 × 6 = 24
(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

Unit I

1. How knowledge of computer and specific software be helpful to store molecular data and its batter use ?

Or

How can you generate large scale data in molecular biology with the use of get electrophoresis.

Unit II

2. What are data base ?

Or

What is data ?

Unit III

3. What are meta data ?

Or

What is Gene bank ?

[4]

Unit IV

4. How gene expression data are helpful to scientists and researchers ?

Or

What would be the data related to prokaryotic transcription you need to generate and store for further study ?

SECTION 'C'   12 × 4 = 48
(Long Answer Type Questions)

Note : *Explain in detail with suitable flow chart/diagram.*

Unit I

1. Write major steps to use BLAST.

Or

Write major steps to use FASTA.

Unit II

2. Write applications of bioinformatics.

Or

Explain role and use of Pubmed.

Unit III

3. Explain Gene Bank.

[5]

Or

Write notes on search strategies in the headings of Indices, Boolean, fuzzy and neighbouring search.

Unit IV

4. What will you consider for data related to prokaryotic transcription ? Give lists of such data for prokaryotic transcription.

Or

What will you consider for data related to regulation of prokaryotic gene expression ? Give lists of such data for regulation of prokaryotic gene expression.

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