

AQ – 862

First Semester M. Sc. – I (CBCS) Examination

BIOINFORMATICS

Paper – IV

(Introduction to Bioinformatics)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) All questions are compulsory and carry equal marks.
(2) Assume suitable data wherever necessary.
(3) Draw well labelled diagrams wherever necessary.

1. Write short notes on :—

- (a) Differences between computational biology and bioinformatics. **5**
- (b) Emergence of Bioinformatics as a separate discipline. **6**
- (c) Biological problems that require computational methods for their solution ? **5**

OR

- (p) Role of Bioinformatics in Biology ? **5**

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(q) Role of Internet in bioinformatics ? 5

(r) Bioinformatics, history on emergence of bioinformatics. 6

2. What is biological data ? How will you acquire sequence data using bioinformatics tools ?

OR

Describe basic DNA sequencing method. 16

3. Describe any four Biological Sequence Database Formats with its structures.

OR

Give short descriptions on organisms specific databases – EcoGene, Saccharomyces Genome Database, MIPS Arabidopsis thaliana Database (MAtdB), The Arabidopsis Information Resource (TAIR). 16

4. Explain in brief on :—

(a) DBGET. 6

(b) Entrez. 5

(c) Data Access. 5

OR

(p) Sequence Retrieval System. 6

(q) Web – based Search Engine. 5

(r) Bankit. 5

5. Write short notes on :—

(a) BLAST. What are the programs used for sequence analysis ? 6

(b) Similarity and Homology. 5

(c) Global and Local Alignment. 5

OR

(p) Alignment score of sequence alignment. 5

(q) Gap penalty in sequence alignments. 5

(r) Dot Plot Analysis and how it is performed for sequence alignments. 6

