Reg. No. : | | | | | | | | | | | |

J 3093

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Sixth Semester

Biotechnology

BT 1351 — BIO INFORMATICS

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give any two examples for Search Engines.
2. Why is Unix used in Bio informatics workstation?
3. List out any four public bio informatics databases.
4. Mention a few significant features of Biological databases.
5. What is the major challenge in Pattern Matching?
6. In what way neural networks are used in Bio Informatics?
7. Is it possible to construct phylogeny tree with two sequences? Give the reason.
8. Why should you have to out-group for drawing phylogenetic tree?
9. List out any four applications of micro array technology.
10. What you mean by cellular computing?

PART B — (5 × 16 = 80 marks)

11. (a) Write a short note on the following UNIX operations : (2 × 8 = 16)

    (i) Viewing and Editing files.

    (ii) Transformations and Filters.

    Or

    (b) Discuss in detail the search engine process and search engine technology.

12. (a) Explain in detail the data life cycle with examples for any application.

Or

(b) Write a neat sketch explain the role of Interfaces in Databases, discuss about the significant Bioinformatics database implementation issues.

13. (a) (i) Compare and contrast FASTA and BLAST Algorithms. (10)

(ii) Find out the alignment score and penalty gap for the following pair of sequences. (6)

(1) ATTCGGCATTCAGAGCTAGA

(2) ATCGACTATT----GCTAGTGGTA.

Or

(b) Elaborate how the Hidden Markov Model are employed for Gene Prediction.

14. (a) Construct Phylogeny Tree using UPGMA methods for the following case in the case of transformed distance method assume OTU E to be a known out-group to other OTUs.

				OTU
OTU	A	B	C	D
B	5			
C	10	9		
D	9	8	5	
E	11	12	15	14

Or

(b) What are Mutations? Explain how mutations act as a measure of Time.

15. (a) Write a short note on :

(i) Bio Molecular Computing.

(ii) Cellular Computing.

Or

(b) How does System Biology has its impact in Bio Informatics? Describe in detail the various factors and issues pertaining to it.

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