CBCS SCHEME

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17BT54

Fifth Semester B.E. Degree Examination, Aug./Sept.2020
Bio - Informatics

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. What are Structural Databases? Explain CATH and SCOP in detail. **(12 Marks)**

b. Write a note on Genbank format and FASTA format. **(08 Marks)**

OR

2 a. Explain PROSITE and add a note on SCANPROSITE tool involved in Pattern research. **(10 Marks)**

b. Write a note on NCBI and its resources. **(06 Marks)**

c. What are Low complexity regions and how they will be marked? **(04 Marks)**

Module-2

3 a. By using FM method, solve the following distance table. Ref. fig. Q3(a) :

	A	B	C	D	E
A	-	22	39	39	41
B	-	-	41	41	43
C	-	-	-	18	20
D	-	-	-	-	10
E	-	-	-	-	-

Distance table

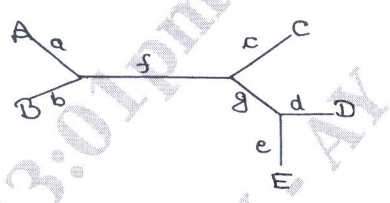

Fig. Q3(a) Evolutionary tree.

(12 Marks)

b. Explain Boot – Strapping and its role in phylogenetic analysis. **(08 Marks)**

OR

4 a. In detail explain "Detecting Functional Sites" in DNA. **(10 Marks)**

b. Explain the following Web based software tools :
i) NNPREDICT ii) SoPMA. **(10 Marks)**

Module-3

5 a. Explain the concept of "Artificial Neural Network" and add a note on its applications. **(10 Marks)**

b. Write a short note on the following tools :
i) AVID ii) MUMmer. **(10 Marks)**

OR

6 a. What are SNP's? Describe the role of SNP's in sequence analysis. Comment on the relevant of SNP Databases in various applications. **(12 Marks)**

b. Add a note on Comparative Modeling and its applications. **(08 Marks)**

Module-4

7 a. Explain Canonical DNA forms. **(08 Marks)**

b. Write a short note on any two Visualization Tools. **(12 Marks)**

OR

8 a. Explain the basics of "MOLECULAR DYNAMICS" and add a note on its limitations and applications. **(10 Marks)**

b. Write a detailed note on Graphical representation of protein with diagram. **(10 Marks)**

Module-5

9 a. What is Restriction Mapping and add a note on :
i) Vector NTI ii) NEB CUTTER. **(12 Marks)**

b. What is Primer design? Explain PRIMER – 3 software tool in detail. **(08 Marks)**

OR

10 a. What is QSAR? Explain its relevance in Drug discovery process. **(10 Marks)**

b. Explain "Docking" in detail and their applications in Insilico drug design with any Docking Tool. **(10 Marks)**

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