

CBCS SCHEME

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18BT63

Sixth Semester B.E. Degree Examination, Dec.2024/Jan.2025 Bioinformatics

Time: 3 hrs.

Max. Marks: 100

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

Module-1

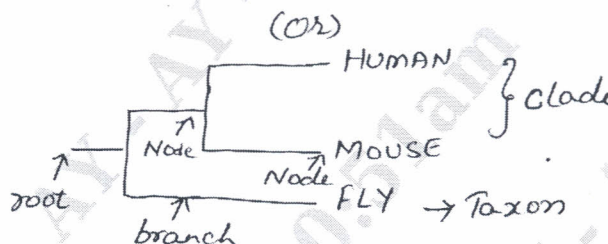
- 1 a. Write a detailed note on biological database and its classification. (10 Marks)
- b. Outline the distinguishing features of PIR. (10 Marks)

OR

- 2 a. Write short notes on the methods used in pairwise sequence alignment. (10 Marks)
- b. Quoting suitable example explain linear and offline gap penalties. (10 Marks)

Module-2

- 3 a. Write a critical note on Phylogram and Cladogram. (10 Marks)
- b. Write explanatory note on PROSITE : (10 Marks)



OR

- 4 a. With respect to above diagram, define phylogenetic tree. Add a note on its characteristics (10 Marks)
- b. Write a descriptive note on genome sequence assembly. (10 Marks)

Module-3

- 5 a. Elaborate on any two gene prediction program. (10 Marks)
- b. Quoting promoter as example, give a detailed account on detecting functional sites in DNA. (10 Marks)

OR

- 6 a. Give a detailed account on secondary structure prediction based on Chou – fasmen method. (10 Marks)
- b. Write a critical note on prediction of protein at sub cellular of class level. (10 Marks)

Module-4

- 7 a. Explain different types of interactions and formulation of force fields. (10 Marks)
- b. Discuss the concept of energy minimization. (10 Marks)

OR

- 8 a. Write a critical note on limitation of MD simulation. (10 Marks)
b. Write a critical note on RasMol and SPDB viewer. (10 Marks)

Module-5

- 9 a. Write a description note on PRIME 3. (10 Marks)
b. Outline the steps involved in deriving pharmacophore pattern. (10 Marks)

OR

- 10 a. In detail explain QSAR. Add a note on physicochemical descriptors. (10 Marks)
b. Explain the application of molecular docking in drug discovery. (10 Marks)

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