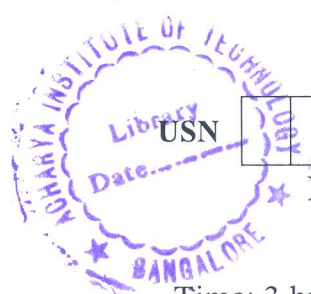


CBCS SCHEME



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17BT45

Fourth Semester B.E. Degree Examination, June/July 2019

Structural Biology

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Elaborate in detail the composition and primary structure of proteins. (10 Marks)
- b. Write a brief account on Carbohydrates and vitamins. (10 Marks)

OR

- 2 a. Write explanatory note on Ramachandran plot with reference to poly alkanyl residue. (10 Marks)
- b. With a neat labeled diagram, explain the structure of Ig G. (06 Marks)
- c. Write short note on Keratin. (04 Marks)

Module-2

- 3 a. Explain the general characteristics of nucleic acid. Add a note on its geometrics. (10 Marks)
- b. Define Hyperchromicity. Explain in detail on the Melting of DNA double helix. (10 Marks)

OR

- 4 a. Write a detailed account on Conformational changes during ion transport in gated channel. (10 Marks)
- b. Write a brief account on Steps involved in signal transduction. (05 Marks)
- c. Brief about Ribose puckering. (05 Marks)

Module-3

- 5 a. Outline the working and application of differential centrifugation process. (10 Marks)
- b. With a neat block diagram, explain the working and application of AFM. (10 Marks)

OR

- 6 a. Explain the principle, working and application of Mass Spectrometry. (10 Marks)
- b. Elaborate on the working principle of MALDI – TOF. Add a note on its advantages and disadvantages. (10 Marks)

Module-4

- 7 a. In detail explain the X – ray diffraction studies pertaining to structure determination of biomolecules. (10 Marks)
- b. Write a detailed account on NMR spectroscopy. (10 Marks)

OR

- 8 a. Explain in detail Fibre diffraction studies. (10 Marks)
- b. Explain the principle, working and application of UV Spectro photometry. (10 Marks)

Module-5

- 9 a. In detail explain the supra molecular interaction of protein and nucleic acids. (10 Marks)
- b. Explain the interaction of lipid and proteins with reference to cell membrane structure. (10 Marks)

OR

- 10 a. In detail elaborate on Monte Carlo simulation with reference to molecular mechanics. (10 Marks)
- b. Elaborate on the importance of Insilico simulation and its effect to biological function. (10 Marks)

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.