CBCS SCHEME

USN | | | | | | | | | | |

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)**

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