

2125
M.Sc. (Bio-Informatics) Third Semester
MBIN-8014: Structural Biology

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting atleast one question from each Unit.

x-x-x

I. Answer the following :-

- a) What are the sources of electrons in electron microscopy?
- b) Give applications of light microscope.
- c) What is peptide mapping?
- d) Define chemical shift.
- e) Give an application of LC/MS.
- f) What is the importance of PDB? (6x2)

UNIT - I

- II. a) Discuss principal and working of phase contrast microscope.
b) Differentiate between dark field and bright field microscopy. (8,4)
- III. a) Discuss principal and working of confocal microscope.
b) Write a note on electron lenses and their applications. (8,4)

UNIT - II

- IV. a) Discuss identification of post translational modification using MS.
b) Briefly explain DNA component analysis by MS. (8,4)
- V. a) How are protein disulphide patterns determined using MS?
b) Discuss protein sequencing by MS. (6,6)

UNIT - III

- VI. Write notes on the following:-
a) Sequential assignment and structural elucidation using NMR.
b) Protein folding problem. (6,6)
- VII. a) Differentiate between NOE and COSY.
b) How are electron density maps analyzed?
c) Explain the concept of spin coupling and its application. (3x4)

x-x-x