Exam.Code:0441
Sub. Code: 3506

2123

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. I which is compulsory and selecting atleast one question from each Unit.*

x-x-x

I. Briefly explain the following :-

a) Any four cell types and their functions within the cell.

b) Structure and function of chloroplast.

c) Functions of pilli and sex pilli.

d) Chemical basis of Gram staining

e) State theory of evolution.

f) Induced mutations giving suitable example. (6x2)

UNIT - I

II. a) Discuss the 5 kingdom classification of life giving the characteristic feature of each.

b) State the Cell theory and its importance. (8,4)

III. a) Differentiate between the following

(i) Prokaryotic and eukaryotic cell (ii) B-DNA and Z-DNA (5+3)

b) Explain the fluid mosaic model of cell membrane. (4)

UNIT - II

IV. Write notes on the following

a) Bacterial growth curve

b) The four types of extremophiles (2x6)

V. a) Discuss identification of post translations modifications of proteins using MS.

b) Compare and contrast principle and applications of LC/MS and GC/MS. (8,4)

P.T.O.

UNIT - III

VI. a) How is X-ray crystallography used to determine protein structure?

b) Explain the concepts of chemical shift and spin coupling w.r.t. NMR. (8,4)

VII. a) Discuss protein structure determination using NMR.

b) Compare and contrast NMR and X-ray crystallography. (8,4)

x-x-x