Exam.Code:0439
Sub. Code: 3489

2022

M.Sc. (Bio-Informatics) First Semester

MBIN-8001: Basic 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. Attempt the following:-

a) State the cell theory and name its proponent

b) What is the function of peroxisomes?

c) Briefly explain the fluid mosaic model of cell membrane

d) Explain extrachromosomal elements giving suitable examples

e) What are psychrophiles?

f) What is the significance of meiosis?

g) Diagrammatically represent the various stages of cell cycle

h) Enlist the various sources of mutations (8x1½)

UNIT - I

II. a) Briefly explain the five kingdom classification and give the salient features of each class.

b) What is the functional role of carbohydrates? (8,4)

III. Compare and contrast:-

a) Prokaryotic and Eukaryotic cells

b) Mitochondria and chloroplast (2x6)

UNIT - II

IV. a) What are the salient features of archaebacteria? (8)

b) Differentiate between

i) Cillia and flagella

ii) Capsule and spores (2x2)

P.T.O.

V. a) What is the structural basis of selection of Gram Positive and Gram Negative bacteria on the basis of Gram staining?

b) Discuss the bacterial growth curve. (2x6)

UNIT - III

VI. a) Differentiate between spontaneous and induced mutations

b) Give any one evidence in support of theory of evolution.

c) Explain linkage groups and their relevance in meiosis. (3x4)

VII. a) Explain natural selection giving suitable examples.

b) State Mendel's law of independent assortment and give its cross along with the relevance. (2x6)

x-x-x