Exam.Code:0435
Sub. Code: 3465

2031

M. Sc. (Biotechnology), First Semester

MBIO-101: Cell Biology

Time allowed: 3 Hours Max. Marks: 80

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

x-x-x

I. Write short notes on the following:-

a) Cell theory

b) FACS

c) Structure of cilia

d) Lysosomes (4x4)

UNIT – I

II. a) Explain the evolutionary steps in the origin of cell

b) Explain the morphological diversity of prokaryotic cells. (2x8)

III. a) Describe the working and any four applications of fluorescence microscope.

b) Explain the construction and working of scanning electron microscope microscope. (2x8)

UNIT – II

IV. a) Describe the structure of mitochondria.

b) Explain, with example, the mechanism of P- class pump. (2x8)

V. a) Explain the role of mitochondria in cellular energy transactions.

b) Write a note on sub cellular fractionation and markers. (2x8)

UNIT – III

VI. a) Explain the regulation of cell cycle in Saccharomyces Pombe.

b) Draw a cycle showing different regulatory sites in mitosis. (2x8)

VII. a) Describe TGF-beta signalling pathway.

b) Write the molecular mechanism of action of cilia and flagella. (2x8)

P.T.O.

UNIT – IV

VIII. a) Explain diagrammatically the initiation phase of translation in eukaryotic cell.

b) Explain the structure of sperm. (2x8)

IX. a) Write a note on oogenesis.

b) Explain intracellular protein trafficking. (2x8)

x-x-x