(i) Printed Pages : 2 Roll No. .....

(ii) Questions : 9 Sub. Code : 2 5 9 3 6

Exam. Code : 0 4 3 5

M.Sc. Bio-Technology 1st Semester

(2124)

CELL BIOLOGY

Paper—MBIO-101

Time Allowed : Three Hours] [Maximum Marks : 80

Note :— Attempt *one* question from each Unit. Q. No. I is compulsory.

I. (a) State the postulates and drawbacks of cell theory.

(b) What are marker enzymes ?

(c) What is cell cycle ?

(d) What are cytoplasmic proteins ? 4×4

UNIT—I

II. (a) Explain the principle, working and any four applications of fluorescence microscope. 8

(b) Write the principle of Atomic Force Microscope. 8

III. (a) Explain the evolutionary steps in the origin of cell. 8

(b) Discuss the morphological diversity of prokaryotic cells. 8

UNIT—II

IV. (a) Write a note on FACS. 8

(b) Explain the role of mitochondria in cellular energy transactions. 8

V. (a) Explain the mechanism of Na^+/K^+ ATPase. 8

(b) Describe the structure of nucleus in detail. 8

UNIT—III

VI. How is cell cycle regulated in *Saccharomyces pombe* ? 16

VII. Explain the mechanism of signal transduction of JAK-STAT. 16

UNIT—IV

VIII. (a) How do transport vesicles bud off from Golgi complex ? 8

(b) Explain the structure of flagella in eukaryotes. 8

IX. (a) What is the importance of post-translational modification ? Explain any one. 8

(b) Write the difference between co-translational and post-translational protein targetting. 8