FACULTY OF SCIENCE
M.Sc. IV-Semester Examination, April / May 2014

Subject: Biochemistry
Paper-1: Cell Biology

Time: 3 Hours
Max. Marks: 80

Note: Answer all questions from Part - A and Part - B. Each question carries 4 marks in Part - A and 12 marks in Part - B.

PART - A (4 x 8 = 32 Marks)
(Short Answer Type)

1. Ultrastructure of chloroplast
2. Cell junctions
3. VEGF and its functions
4. Totipotency
5. Inhibitors of signaling pathways
6. Which are the non-culeotide second messengers? Comment.
7. Signal hypothesis
8. Protein stability and turnover number

PART - B (4 x 12 = 48 Marks)
(Essay Answer Type)

9. (a) Give an account of the components of the extracellular matrix and their interactions.
   (b) Explain cell cycle and its regulation in multicellular organisms.

10. (a) Discuss the roles of PDGF, EGF, IGF and nerve growth factors in cell differentiation and proliferation.
    (b) Explain:
        (i) Fibroblast and muscle cell differentiation
        (ii) Basis for body pattern in Drosophila

11. (a) Which of the post translational protein modification play role in signal transduction? Explain any four.
    (b) Give an account of cell signaling cascades.

12. (a) Elaborate the mechanism of protein targeting to mitochondria and chloroplast.
    (b) Write short notes on:
        (i) Cell organelles in protein sorting
        (ii) PEST sequences and N-End rule
****