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Code No. 6145/CBCS/Non-CBCS

FACULTY OF SCIENCE

M. Sc. III – Semester (CBCS / Non-CBCS) Examination, December 2016

Subject : Biochemistry

Paper – IV : Cell-Communication and Signal Transduction

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 (8 x 4 = 32 Marks)
(Short Answer Type)**

- 1 Ionophores
- 2 Monomeric G-proteins
- 3 Paracrine signaling
- 4 VEGF
- 5 Discovery of tumor suppressor genes
- 6 PTEN
- 7 Role of proline in plant stress tolerance
- 8 STAT pathway in Yeast

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

- 9 (a) Write a note on :
- (i) Types of receptors
 - (ii) Facilitated diffusion
- OR**
- (b) What is the role of ECM components in cell signaling?
- 10 (a) Give an account on role of second messenger molecules in cell signal transduction pathways.
- OR**
- (b) Describe the role of MAPK signaling pathway in the regulation of cell proliferation.
- 11 (a) With suitable examples discuss the mechanism of action of oncogenes in cell proliferation.
- OR**
- (b) Give an account on mechanism of action of tumor suppressor genes.
- 12 (a) Give an account on:
- (i) Role of His-Kinases in bacterial chemotaxis
 - (ii) Biotic stress signaling in plants
- OR**
- (b) With suitable examples discuss the mechanism of action of plant hormones in plant growth regulation.
