

**M. SC. (BIOTECHNOLOGY) SEM-I (2012
COURSE)(CHOICE BASED CREDIT SYSTEM) : SUMMER
2018
SUBJECT : CELL BIOLOGY**

Day : **Tuesday**
Date : **10/04/2018**

S-2018-1081

Time : **10.00 am to 01.00 pm**
Max. Marks: 60.

N.B.:

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the **RIGHT** indicate full marks.
 - 3) Both the sections should be written in **SEPARATE** answer books.
 - 4) Draw neat labeled diagrams **WHEREVER** necessary.
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SECTION-I

- Q.1** Attempt any **FIVE** of the following: (10)
- a) Enlist two second messengers.
 - b) Difference between desmosomes and hemidesmosomes.
 - c) Sketch and label late anaphase of mitosis.
 - d) Explain role of plasmodesmata in plants.
 - e) What is role of oil immersion in microscope?
 - f) Define gametogenesis.
- Q.2** Attempt any **TWO** of the following: (10)
- a) Describe the structure and functions of Mitochondria.
 - b) Describe the principle and working of phase contrast microscope.
 - c) Describe the structure and functions of intermediate filaments.
- Q.3** Attempt any **TWO** of the following: (10)
- a) What is ion channel? Explain in brief voltage gated channels and ligand gated channels.
 - b) Describe the structure of Fluid Mosaic model and explain how it is different from previous models.
 - c) Describe the mechanism and action of Na^+ and K^+ ATPases.

SECTION-II

- Q.4** Attempt any **FIVE** of the following: (10)
- a) Explain in brief cell theory.
 - b) Sketch and label typical plant cell.
 - c) What is role of F_1 particle of mitochondria?
 - d) What is mean by connexon?
 - e) Define apoptosis and necrosis.
 - f) Differentiate between chiasmata and centromere.
- Q.5** Attempt any **TWO** of the following: (10)
- a) Define cell cycle and explain in brief interphase of cell cycle.
 - b) Describe in brief prophase- I of meiosis.
 - c) What are cd kinase and P53? Explain their role in regulation of cell cycle.
- Q.6** Attempt any **TWO** of the following: (10)
- a) Explain mechanism of apoptosis and its failure leading to cancer development.
 - b) Explain different types of cell signaling molecules receptors and cell signaling transduction.
 - c) Discuss the role of protein tyrosine kinases in cell signaling.

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