

**M. Sc. (Biotechnology) Sem-I (2012 Course)(Choice Based Credit
System) : SUMMER - 2019
SUBJECT : CELL BIOLOGY**

Day : Thursday
Date : 04/04/2019

S-2019-1407

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) Draw neat and labeled diagrams **WHEREVER** necessary.
 - 4) Answers to both the sections should be written in **SAME** answer books.
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SECTION – I

- Q.1** Attempt **ANY FIVE** of the following: [10]
- a) Explain in brief cell theory.
 - b) Differentiate between desmosomes of hemidesmosomes.
 - c) What is the role of oil immersion objective lens?
 - d) Enlist different stages of prophase – I in meiosis.
 - e) What is mean by voltage gated channel?
 - f) Sketch and label anaphase of mitosis.
- Q.2** Answer **ANY TWO** of the following: [10]
- a) Describe in brief ultra structure and functions of nucleus.
 - b) Explain in brief structure and functions of mitochondria.
 - c) Describe the principle and working of scanning electron microscope.
- Q.3** Answer **ANY TWO** of the following: [10]
- a) Describe in brief structure and functions of fluid mosaic model.
 - b) What are ion channels? Discuss its role in membrane transport.
 - c) What is mean by active transport? Explain in brief mechanism of Na⁺ and K⁺ATPases.

SECTION – II

- Q.4** Attempt **ANY FIVE** of the following: [10]
- a) What is gap junction?
 - b) What is role of ribosomes?
 - c) Sketch and label nerve cell.
 - d) What is significance of oogenesis?
 - e) What is mean by caspases?
 - f) Write functions of chloroplast.
- Q.5** Answer **ANY TWO** of the following: [10]
- a) Describe in brief the process of mitosis.
 - b) Explain the role of cdk and P₅₃ for regulation of cell cycle.
 - c) Define gametogenesis. Explain in brief process of spermatogenesis.
- Q.6** Answer **ANY TWO** of the following: [10]
- a) Describe STAT Pathway used for signaling by cytokinesis.
 - b) Explain the role of tyrosine kinases in cell signaling.
 - c) Explain mechanism of apoptosis and its failure leading to cancer development.

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