

M. Sc. (Biotechnology) Sem-I / M. Sc. (Medical Biotechnology) Sem- I
(CBCS 2018 Course) : WINTER - 2018

SUBJECT: CELL & DEVELOPMENTAL BIOLOGY

Day : Saturday
Date : 27/10/2018

W-2018-1222

Time: 10.00 AM TO 12.00 Noon
Max. Marks : 60

N.B.

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

- Q.1** Attempt **ANY FIVE** of the following. (10)
- a) Give functions of Golgi complex.
 - b) Enlist the functions of nucleolus.
 - c) Give the diameter of cytoskeletal elements.
 - d) Give the functions of erythrocytes and thrombocytes.
 - e) Explain in brief phagocytosis.
 - f) Define symport and antiport.
 - g) Explain in brief Ca^{++} ATPases.
- Q.2** Attempt **ANY TWO** of the following. (10)
- a) Describe the structure and functions of microfilament.
 - b) Describe the structure and functions of chloroplast.
 - c) Describe the fluid mosaic model of cell membrane structure.
- Q.3** Attempt **ANY TWO** of the following. (10)
- a) Explain different types of receptors and their significance in endocytosis.
 - b) Explain extracellular matrix.
 - c) Describe the structure and functions of Golgi complex.

SECTION - II

- Q.4** Attempt **ANY FIVE** of the following. (10)
- a) Define apoptosis and necrosis.
 - b) Sketch and label telophase in mitosis.
 - c) Give the significance of tight junction.
 - d) Define the term superficial cleavage with example.
 - e) Sketch and label blastocyst in mammals.
 - f) What are totipotent cells?
 - g) Explain in brief transdifferentiation
- Q.5** Attempt **ANY TWO** of the following. (10)
- a) Discuss the general principles of cell signaling.
 - b) Differentiate between mitosis and meiosis.
 - c) Describe egg types based on amount and distribution of yolk.
- Q.6** Attempt **ANY TWO** of the following. (10)
- a) Explain the process of spermatogenesis. Add a note on its significance.
 - b) Explain the process of implantation of human embryo.
 - c) Explain the intrinsic and extrinsic pathways in apoptosis.

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