

MASTER OF SCIENCE (MEDICAL BIOTECHNOLOGY) (CBCS-2018 COURSE)
M.Sc. (Medical Biotechnology) Sem-I : WINTER :- 2021
SUBJECT: CELL & DEVELOPMENTAL BIOLOGY

Day : Saturday
Date 5/2/2022

W-20217-2021

Time : 02:00 PM-05:00 PM
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.

SECTION – I

- Q.1** Attempt **ANY FIVE** of the following. (10)
- a) Give functions of thylakoids.
 - b) What is cell theory?
 - c) Enlist different types of plastids with their functions.
 - d) Name any four intermediate filament proteins.
 - e) Define endocytosis and exocytosis.
 - f) Define antiport and symport.
 - g) What are aquaporins? Write its significance.
- Q.2** Attempt **ANY TWO** of the following. (10)
- a) Describe the structure and functions of microtubules.
 - b) Describe the structure and functions of nucleus.
 - c) Describe in brief receptors mediated endocytosis.
- Q.3** Attempt **ANY TWO** of the following. (10)
- a) Differentiate between active and passive transport.
 - b) Describe the structure of nerve cell.
 - c) Describe the structure and functions of endoplasmic reticulum.

SECTION - II

- Q.4** Attempt **ANY FIVE** of the following. (10)
- a) What is plasmodesmata?
 - b) Sketch and label anaphase of mitosis.
 - c) What is significance of gap junction?
 - d) Explain in brief spiral cleavage with suitable example
 - e) What is blastulation?
 - f) What are stem cells?
 - g) Explain the term differentiation
- Q.5** Attempt **ANY TWO** of the following. (10)
- a) Explain in brief signaling via G-protein coupled receptors.
 - b) Describe the phase of cell during mitosis.
 - c) Describe the structure of frog egg.
- Q.6** Attempt **ANY TWO** of the following. (10)
- a) Explain the process of oogenesis. Add a note on its significance.
 - b) Describe the process of gastrulation in frog.
 - c) Discuss the role of Cd kinase in regulation of cell cycle.

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