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

Day : Saturday
Date 5/2/2022

W-19739-2021

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 tee 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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