

Exam. Code : 107404

Subject Code : 1861

B.Sc. (Biotechnology) 4th Semester

BT-4 : CELL BIOLOGY—B

Time Allowed—3 Hours] [Maximum Marks—40

SECTION—A

Note :— Attempt **ALL** the questions. Answer to any question should not exceed $1/3^{\text{rd}}$ of a page.

1. What are Cytoplasmic inclusions ?
2. Expand the terms A site and P site in Ribosome. Give their role also.
3. In the phase when the cell is not dividing, is there any activity within the cell Nucleus ? Explain.
4. What is Heterophagosome ?
5. How cytokinesis occurs in Plants ?
6. Define Cyclosis.
7. What are Coacervates ?
8. Define Totipotency. 8×1=8

SECTION—B

Note :— Attempt any **five** questions. Answer to any question should not exceed **2** pages.

1. Differentiate between Smooth and Rough endoplasmic reticulum.
2. Who proposed the Fluid and Mosaic model of Plasma membrane ? Describe its structure in detail.

3. What is the relation between the concepts of Chromatin and Chromosome ? Are Heterochromatin and Euchromatin parts of Chromosome ? Describe the morphology of Chromosomes also.
4. Describe the functions of Lysosomes in detail.
5. What do you mean by Binary Fission ? Describe its various types giving examples.
6. Draw a labeled diagram of cilium showing its ultra structure and write a note on the types of Ciliary movements.
7. What do you mean by Gerontology ? Describe the various cellular and extra cellular changes which occur during ageing.
8. What are Stem Cells ? Give their various types.

5×4=20

SECTION—C

Note :— Attempt any *two* questions. Answer to any question should not exceed **5** pages.

1. Explain :
 - (a) Active transport across the Plasma Membrane.
 - (b) Ultra structure of dictyosomes. 3+3=6
2. Describe in detail the structure and functions of organelle which is also known as the “Power House” of the cell. 6
3. Describe along with diagrams :
 - (a) Synaptonemal complex
 - (b) Differences between Metaphase, Anaphase and Telophase stages of Meiosis I and Meiosis II. 3+3=6
4. Describe the chemical or naturalistic or modern theory of Origin of Life. 6