5. (a) Explain the structure of Fluid mosaic model. 4

(b) Describe the structure of Nucleus. 4

(c) Explain structure and functions of Ribosomes. 4

OR

(d) Describe E.M. structure of Mitochondria. 4

(e) State the importance of peroxisomes. 4

(f) Give the type of E.R. and it's role. 4

6. Discuss differential centrifugation in detail.

OR

Describe cell lysis methods in detail. 12

7. (a) Illustrate the importance of microfilaments. 4

(b) Discuss phases of cell cycle. 4

(c) Give the applications of stem cells. 4

OR

(d) Describe Flagellar locomotion. 4

(e) Explain structure of micro-tubules. 4

(f) Discuss properties of stem cells. 4

AR – 495

First Semester B. Sc. (Part - I) Examination

1S: BIOTECHNOLOGY (R/V)

(Cell Biology and Biomolecules)

P. Pages : 4

Time : Three Hours] [Max. Marks : 80

Note : (1) All questions are compulsory.
(2) Draw well labelled diagrams wherever necessary.

1. (a) Fill in the blanks :—

(i) The cell division takes place in somatic cells is called _____ .

(ii) In prokaryotic cells, ribosomes have sedimentation coefficient _____ .

(iii) Eukaryotic cells have a true _____ with a nuclear envelope.

(iv) The glucose is the example of _____ type of carbohydrate. 2

(b) Choose correct alternative.

(i) The chemical substance on which the enzyme act is called ———

(a) Active site (b) Substrate

(c) Coenzyme (d) None of above

(ii) E. R. consists of ———

(a) Matrix (b) Stroma

(c) Vesicles (d) Lamellae

(iii) Two cells are connected with the help of ———

(a) Cell wall

(b) Plasma membrane

(c) Plasmodesmata

(d) None of these

(iv) Growth and development of body takes place due to ———

(a) Amitosis (b) Meiosis

(c) Mitosis (d) None of above 2

(c) Answer in **one** sentence :

(i) What is a cell ?

(ii) What is peroxisome ?

(iii) What is holoenzyme ?

(iv) What is the main function of Golgi bodies ? 4

2. (a) Explain the nature of prokaryotic cell. 4

(b) Discuss the formation of first cell. 4

(c) **Describe features of Miller experiment.** 4

OR

(d) Discuss cell theory and it's exceptions. 4

(e) Explain properties of Eukaryotic cell. 4

(f) Justify "Cell as a basic unit of living system." 4

3. (a) Discuss the properties of carbohydrates. 4

(b) Explain the properties of organic compound. 4

(c) Describe structure of phospholipids. 4

OR

(d) Discuss the properties of lipids and it's importance. 4

(e) Describe structure of any two monosaccharides. 4

(f) Give any six properties of inorganic compound. 4

4. Discuss the structural organization of proteins in detail.

OR

Describe in detail, applications of enzymes in industry, food and medicine fields. 12