

4. Draw Ultrastructures of (5×3=15)

- (i) Mitochondria
- (ii) Nucleus
- (iii) Fluid Mosaic Model

5. Attempt **any three** (5×3=15)

- (i) Explain the process of regulation of cell cycle.
- (ii) Give an account of polymorphic forms of lysosomes.
- (iii) What are the constituents of cell wall? Describe its structure and function.
- (iv) Explain the role of microtubule in the transport of macromolecules and organelles in the cytoplasm

6. Attempt **any three** (5×3=15)

- (i) Describe the various levels of protein structure.
- (ii) What are the salient features of DNA structure?
- (iii) Write a note on lipids as cell membrane constituents.
- (iv) Write a note of biological significance of chemical bonds.

(2000)

Your Roll No.....

Sr. No. of Question Paper : 1037 D

Unique Paper Code : 2162011102

Name of the Paper : Cell Biology: Organelles and Biomolecules

Name of the Course : **Botany**

Semester : I

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. **Question No. 1** is compulsory.
3. Attempt **four** questions in all.

1. (a) Fill in the blanks (**any five**) (1×5=5)

(i) Gunter Blobel and David Sabatini proposed the _____.

P.T.O.

- (ii) Marker enzyme for mitochondria is _____.
 - (iii) _____ is a lysosomal storage disease.
 - (iv) A non-membranous cell organelle is _____.
 - (v) Fluid mosaic model of plasma membrane model is proposed by _____.
 - (vi) Disulphide bonds are formed in _____.
- (b) Define **any five** (1×5=5)
- (i) Reducing sugars
 - (ii) Hydrogen bonds
 - (iii) Chromatin
 - (i) Essential Fatty Acids
 - (ii) Nucleoid
 - (iii) Heterophagy
- (c) Write at least one contribution of the following scientists (1×5=5)
- (i) Linn Margulis

- (ii) Rosalind Franklin
 - (iii) C Benda
 - (iv) George Palade
 - (i) Fritz Lipmann
 - (ii) Christian De Duve
 - (iii) Camillo Golgi
2. Differentiate between **any three** (5×3=15)
- (i) Prokaryotic and eukaryotic cell
 - (ii) RER and SER
 - (iii) Primary and Secondary cell wall
 - (iv) Microtubule and Microfilament
 - (v) Mitosis and Meiosis
3. Write short notes on **any three** (5×3=15)
- (i) Nuclear Pore Complex
 - (ii) ATP as energy currency molecule
 - (iii) Peroxisome
 - (iv) Semi-autonomous nature of chloroplast