

2125  
B.A./B.Sc. (General) First Semester  
Botany  
Paper – B: Cell Biology

Max. Marks: 36

Time allowed: 3 Hours

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit. Illustrate your answer wherever necessary.  
x-x-x

I. A) Fill in the blanks.

(1x6)

- i) Lysosome was first reported by ..... in year .....
- ii) Genetic code was proposed by.....
- iii) Term Nucleus was coined by .....
- iv) .....is represented by Loops in lampbrush chromosomes
- v) .....and .....reported the fluid-mosaic model of membrane structure in 1972.
- vi) ..... bp of DNA is wrapped around nucleosome.

B) Mark the correct answer.

(1x6)

- i) Which cell organelle is involved in apoptosis?
  - a) Lysosome
  - b) ER
  - c) Golgi
  - d) Mitochondria
- ii) The function of the centrosome is
  - a) Formation of spindle fibres
  - b) Secretion
  - c) Osmoregulation
  - d) Protein synthesis
- iii) Synopsis occurs during-
  - a) Zygotene
  - b) Leptotene
  - c) Pachytene
  - d) Diplotene
- iv) Lysosomes are known as “suicidal bags” because
  - a) Parasitic activity
  - b) Presence of food vacuole
  - c) Hydrolytic activity
  - d) Catalytic activity
- v) Which of the following organisms doesn't have a cell?
  - a) Virus
  - b) Bacteria
  - c) Fungi
  - d) Algae
- vi) Which of the following polysaccharide is not present in the eukaryotic plant cell wall?
  - a) Chitin
  - b) Hemicellulose
  - c) Pectin
  - d) Cellulose

P.T.O.

(2)

**UNIT - I**

- II. Discuss the structure and functions of the plant cell wall with suitable diagrams. (6)
- III. Write notes on structural and functional aspects of Golgi apparatus. (6)

**UNIT - II**

- IV. Write notes on various types of chromosomal aberrations? (6)
- V. Discuss the variation in chromosome numbers and their importance. (6)

**UNIT - III**

- VI. Comparatively discuss the various features of different types of DNA . (6)
- VII. Write about the mitosis in plants and its significance with suitable diagrams. (6)

**UNIT - IV**

- VIII. Discuss the detailed account of structure and concept of gene. (6)
- IX. Write methods of gene regulation in prokaryotes. (6)