

Bachelor of Science (B.Sc.) Semester—III (C.B.S.) Examination

BOTANY (Cell Biology, Plant Breeding & Evolution)

Paper—II

Time : Three Hours]

[Maximum Marks : 50

Note :—(1) **ALL** questions are compulsory and carry equal marks.

(2) Draw well labelled diagrams wherever necessary.

1. Write on :

- | | |
|--|---|
| (a) Ultrastructure of nucleus | 5 |
| (b) Ultrastructure and functions of endoplasmic reticulum. | 5 |

OR

Write short notes on :

- | | |
|--|-------|
| (c) Structure of cell wall (diagram only) | |
| (d) Fluid-mosaic model | |
| (e) Structure of typical plant cell (diagram only) | |
| (f) Functions of cell wall. | 2.5×4 |

2. Write on :

- | | |
|--|---|
| (a) Ultrastructure and functions of ribosome | 5 |
| (b) Ultrastructure of mitochondria. | 5 |

OR

Write short notes on :

- | | |
|---|-------|
| (c) Structure of chloroplast (diagram only) | |
| (d) Golgi complex | |
| (e) Vacuole | |
| (f) Peroxisome. | 2.5×4 |

3. Write on :

- (a) Prophase-I of meiosis 5
- (b) Nucleosome model. 5

OR

Write short notes on :

- (c) Cell cycle
- (d) Karyotype
- (e) Anaphase of mitosis
- (f) Sex chromosomes in *Melandrium*. 2.5×4

4. Write on :

- (a) Calculate mean and median of the following data of height of wheat plants in cm :
12, 13, 10, 16, 13, 14, 13, 10, 13, 12. 5
- (b) Technique of hybridization. 5

OR

Write short notes on :

- (c) Clonal selection
- (d) Neo-Darwinism
- (e) Miller's theory
- (f) Hardy-Weinberg's law. 2.5×4

5. Write in **two-three** lines only (any **ten**), diagrams are not necessary :

- (a) RER
- (b) Middle lamella
- (c) Intrinsic proteins
- (d) Grana
- (e) Glyoxysome
- (f) 'P' Site
- (g) Chromatid
- (h) Sat chromosome
- (i) NOR
- (j) Plant breeding
- (k) Mode
- (l) Standard error.

1×10