

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 notes on :—

- | | |
|--|---|
| (a) Ultrastructure of nucleus | 5 |
| (b) Ultrastructure and functions of cell wall. | 5 |

OR

Write short notes on :—

- | | |
|---|----|
| (c) Endoplasmic reticulum | 2½ |
| (d) Functions of cell membrane | 2½ |
| (e) Fluid-mosaic model | 2½ |
| (f) Structure of typical plant cell (diagram only). | 2½ |

2. Write notes on :—

- | | |
|---|---|
| (a) Ultrastructure and functions of Golgi complex | 5 |
| (b) Ultrastructure of Chloroplast. | 5 |

OR

Write short notes on :—

- | | |
|--|----|
| (c) Ribosomes | 2½ |
| (d) Vacuole | 2½ |
| (e) Peroxisome | 2½ |
| (f) Ultrastructure of mitochondria (diagram only). | 2½ |

3. Write notes on :—

- | | |
|------------------------------|---|
| (a) Morphology of chromosome | 5 |
| (b) Mitosis in plants. | 5 |

OR

Write short notes on :—

- (c) Nucleosome model 2½
- (d) Sex chromosomes in *Melandrium* 2½
- (e) Significance of meiosis 2½
- (f) Zygotene. 2½

4. Write notes on :—

- (a) Hybridization technique 5
- (b) Calculate mean and mode of the following data of weight of fruits in gms :
53, 55, 51, 56, 53, 53, 55, 54, 57. 5

OR

Write short notes on :—

- (c) Clonal selection 2½
- (d) Hardy-Weinberg's law 2½
- (e) Neo-Darwinism 2½
- (f) Miller's theory. 2½

5. Write in 2 to 3 lines only (any **TEN**). Diagrams are not necessary :—

- (a) Plasmodesmata
- (b) Cytoplasm
- (c) SER
- (d) A-site
- (e) F_1 particle
- (f) Glyoxysome
- (g) Cell cycle
- (h) Karyotype
- (i) Chiasmata
- (j) Pure line selection
- (k) Median
- (l) Heterosis. 1×10