

AQ - 815

**First Semester M. Sc. (Part-I) (C.B.C.S.)
Examination**

BOTANY

Paper - I

(Cell Biology, Cytology and Genetics)

P. Pages : 2

Time : Three Hours]

[Max. Marks : 80

Note : (1) All questions are compulsory and carry equal marks.

(2) Illustrate your answer with suitable examples and diagrams.

1. Discuss :—

- | | |
|-----------------------------------|---|
| (a) Golgi complex. | 5 |
| (b) Lysosomes. | 5 |
| (c) Functions of Plasma membrane. | 6 |

OR

- | | |
|--|---|
| (d) Structure and function of cell wall. | 5 |
| (e) Endoplasmic reticulum. | 5 |
| (f) Phase contrast microscopy. | 6 |

2. What is Apoptosis ? Explain program cell death (PCD) in detail. 16

OR

- | | |
|---|---|
| (g) G. Proteins and G. Protein receptors. | 8 |
|---|---|

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(h) Protein targeting to mitochondria. 8

3. Explain :—

(i) Nucleosome Assembly. 5

(j) Polytene chromosome. 5

(k) Evolution of Karyotype. 6

OR

(l) Euchromatin and heterochromatin. 5

(m) Sex chromosomes. 5

(n) Inversion and Translocation. 6

4. Discuss :—

(o) Cytoplasmic male sterility. 5

(p) Molecular basis of mutation. 5

(q) Initiation of Cancer at cellular level. 6

OR

(r) Chloroplast genome. 5

(s) Transposons. 5

(t) C-oncogens. 6

5. What is genetic code ? Explain its various properties. Add a note on Wobble hypothesis.

16

OR

(u) Lac-operon. 8

(v) Organization and functions of N_2 fixing genes. 8

