

B.Sc. S.Y. (CBCS Pattern) Sem-IV
012A - Botany Paper-I (Cell Biology, Genetics and Biotechnology)

P. Pages : 2

Time : Three Hours



GUG/W/23/11992 (S)

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw well labelled diagram wherever necessary.

1. Write on:-
- a) Explain prophase I of meiosis I. 5
- b) Structure and function of chloroplast. 5

OR

Write short notes on:

- c) Vacuoles. 2½
- d) Interphase. 2½
- e) Structure of DNA. 2½
- f) Cellular totipotency. 2½

2. Write on:-
- a) Complementary Genes. 5
- b) Law of Independent Assortment. 5

OR

Write short notes on:

- c) Incomplete dominance. 2½
- d) Plastic DNA. 2½
- e) Back cross and Test cross. 2½
- f) Law of Dominance. 2½

3. Write on:-
- a) Define Linkage and Explain complete Linkage. 5
- b) Translocation and its type. 5

OR

- c) Allopolyploidy. 2½
- d) Breakage and Reunion theory. 2½
- e) Induced mutation. 2½
- f) Deletion. 2½

4. Write on:-
- a) r.DNA technology. 5
 - b) Lac operon concept. 5

OR

- c) Jumping genes. 2½
 - d) Agrobacterium. 2½
 - e) c-DNA Libraries. 2½
 - f) Ac/Ds elements. 2½
5. Write in two or three lines only **any ten** of the following (Diagram is not necessary). **10**

- a) Plasma membrane.
- b) Cytokinesis.
- c) Explant.
- d) Alleles.
- e) Heterozygous.
- f) F₂ generation.
- g) Trisomy.
- h) Duplication.
- i) Mutagens.
- j) Ligases.
- k) Transcription.
- l) Termination codon.
