

012A - 2 - Botany Paper-I : Cell Biology, Genetics and Biotechnology

P. Pages : 2

GUG/W/22/11992

Time : Three Hours



Max. Marks : 50

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

- 1.** Write on :
- a) Write detail account on structure and functions of cell wall. 5
- b) Explain the process of mitosis with respect to plants in detail. 5
- OR**
- Write short notes on :
- c) Nucleus. 2½
- d) Pachytene in Meiosis. 2½
- e) Structure of DNA. 2½
- f) Cellular totipotency. 2½
- 2.** Write on :
- a) Law of Independent Assortment. 5
- b) Complementary genes. 5
- OR**
- Write short notes on:
- c) Law of Dominance. 2½
- d) Test cross. 2½
- e) Incomplete Dominance. 2½
- f) Plastid DNA. 2½
- 3.** Write on :
- a) What is Polyploidy? Explain its types and its significance. 5
- b) Define Mutation, Explain Induced mutation and its significance. 5
- OR**
- c) Complete linkage. 2½
- d) Breakage and Reunion theory. 2½
- e) Aneuploidy. 2½
- f) Duplication. 2½
- 4.** Write on:
- a) Define Restriction enzyme and describe its types. 5

b) Write an essay on c-DNA Library. 5

OR

Write short notes on

c) Agrobacterium. 2½

d) Jumping gene. 2½

e) Transcription. 2½

f) Bacteriophage. 2½

5. Write in two or three lines only. **Any ten** of the following (Diagram is not necessary) 10

a) Vacuole.

b) Lagging Strand.

c) Callus.

d) Allele.

e) Back cross.

f) F₁-generation.

g) Inversion.

h) Deletion.

i) Spontaneous mutation.

j) PBR322

k) Ligases.

l) Translation.
