

Third Semester M.Sc. (Part - II) (CBCS)
Examination

BOTANY

Paper - XII

Elective

(Plant Tissue Culture - II)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

- Note : (1) All questions are compulsory and carry equal marks.
(2) Draw well labelled diagrams wherever necessary.

1. Discuss in detail - the mechanism of Somatic Embryogenesis. What are the essential requirements for induction of somatic embryos.

OR

Write on the application of somatic embryogenesis in plant improvement. 16

2. Write briefly on :—

(a) Pathways for androgenic haploids. 5

- (b) Limitations of Triploids in plant improvement. 5
(c) In-vitro pollination. 6

OR

- (d) Significance of Haploids in plant. 5
(e) Breeding ovule culture. 5
(f) Dihaploid production. 6

3. Explain in brief :—

- (g) Role of enzymes in isolation of protoplast. 5
(h) Somatic Hybrids. 5
(i) Electrofusion. 6

OR

- (j) Methods of protoplast fusion. 5
(k) Cybrids 5
(l) Protoplast culture and plant Improvement. 6

4. Discuss in brief :—

- (m) Virus mediated gene transfer. 5
(n) Expression of foreign DNA. 5
(o) Controversies of transgenic plants. 6

OR

- (p) Electroporation. 5
(q) Genetic transformation for herbicide tolerance. 5
(r) Role of marker genes (selectable markers). 6

5. What do you mean by hairy root culture ? Describe different types of bioreactors used for hairy root culture.

OR

Highlight the prospects and potentials of plant tissue culture in industries. 16

