

AU-389

M.Sc. Part—II Semester—III (CBCS) Examination

BOTANY

(Plant Tissue Culture—I)

Paper—XI (Elective)

Time : Three Hours]

[Maximum Marks : 80

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

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

1. Describe :—

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|---|---|
| (a) Role of photoperiod in in-vitro cultures. | 5 |
| (b) Greenhouse. | 5 |
| (c) Cellular totipotency. | 6 |

OR

- | | |
|--|---|
| (d) Scope of plant tissue culture. | 5 |
| (e) Contribution of Guha and Maheshwari to plant tissue culture. | 5 |
| (f) Shoot tip culture. | 6 |

2. Write on :—

- | | |
|--------------------------------------|---|
| (g) Autoclaving of media. | 5 |
| (h) Selection of explant. | 5 |
| (i) Inorganic constituents in media. | 6 |

OR

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|---------------------------------------|---|
| (j) Sterilization of glasswares. | 5 |
| (k) Surface sterilization of explant. | 5 |
| (l) Organogenic differentiations. | 6 |

3. What is suspension culture ? Describe continuous culture. 16

OR

(m) Explain factors affecting single cell culture. 8

(n) Describe the techniques of single cell culture. 8

4. Write briefly on :—

(o) Factors affecting variations. 5

(p) Somaclonal variations. 5

(q) Problems in micropropagation techniques. 6

OR

(r) Gametoclonal variations. 5

(s) Role of variability in selection. 5

(t) Factors affecting micropropagation. 6

5. What is abiotic stress ? With suitable examples, explain the role of plant tissue culture techniques to overcome abiotic stresses. 16

OR

(u) Explain the commercial exploitation of micro-propagation in agronomical crops. 8

(v) Explain the commercial exploitation of micro-propagation in Horticulture crops. 8