

B.Sc.- III CBCS Pattern Semester-VI
012A - Botany Paper-I : Plant Biotechnology-I

P. Pages : 2

Time : Three Hours



GUG/W/23/13331

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. a) Describe role of vitamins and hormones in plant tissue culture. 5
b) Define culture media. Explain composition of culture media. 5

OR

- c) Solidifying agents. 2½
d) B5 medium. 2½
e) Advantages of plant tissue culture. 2½
f) Historical perspective of plant tissue culture. 2½
2. a) Describe somatic embryogenesis. 5
b) Explain the concept of dedifferentiation and redifferentiation. 5

OR

- c) Regeneration. 2½
d) Organogenesis. 2½
e) Zygotic embryogenesis. 2½
f) GUS gene. 2½
3. a) Explain secondary metabolite production. 5
b) Explain the technique of micropropagation. 5

OR

- c) PEG mediated protoplast fusion. 2½
d) Virus elimination. 2½
e) Protoplast isolation. 2½
f) Shoot multiplication. 2½

4. a) Explain the technique of anther culture. 5
b) Explain the technique of Cryopreservation. 5

OR

- c) Applications and uses of endosperm culture and triploids. 2½
d) Applications of haploids in plant breeding. 2½
e) Cold Storage. 2½
f) In-situ conservation. 2½
5. Write **any ten** questions in one or two lines only (Diagrams are NOT necessary). **1x10**
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| a) Murashige and Skoog. | b) Father of Tissue Culture. |
| c) Callus. | d) Totipotency. |
| e) Histogenesis. | f) Embryoids. |
| g) Elicitor. | h) Micro-grafting. |
| i) Sodium hypochlorite. | j) DMSO. |
| k) Cybrids. | l) Vitrification. |
