

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

P. Pages : 2

Time : Three Hours



**GUG/S/25/13331**

Max. Marks : 50

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

**1.** Write notes on: **5x2**  
**=10**

- a) Define tissue culture. Describe the procedure of plant tissue culture.
- b) Role of hormone in plant tissue culture.

**OR**

Write short notes on: **2½x4**  
**=10**

- c) MS medium
- d) Contribution of Gautheret
- e) Role of nutrients in tissue culture.
- f) Chu's media (N6 media)

**2.** Write notes on: **5x2**  
**=10**

- a) Somatic embryogenesis
- b) Organogenesis

**OR**

Write short notes on: **2½x4**  
**=10**

- c) Totipotency
- d) Direct regeneration
- e) Differentiation
- f) Indirect regeneration.

**3.** Write notes on: **5x2**  
**=10**

- a) What is protoplast? How protoplast are isolated.
- b) Describe different methods of virus elimination using PTC technique.

**OR**

Write short notes on:

**2½x4  
=10**

- c) Micropropagation
- d) Protoplast culture
- e) Secondary metabolites production.
- f) Protoplast fusion.

**4.** Write notes on:

**5x2  
=10**

- a) Cryopreservation
- b) Anther culture

**OR**

Write short notes on:

**2½x4  
=10**

- c) Hardening
- d) Germplasm conservation (Role of tissue culture)
- e) Ovary culture.
- f) Endosperm culture.

**5.** Write any ten questions in one and two lines only. (Diagrams are not necessary).

**1x10  
=10**

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|----------------------|----------------------|
| a) Aseptic condition | b) Solidifying agent |
| c) BS Media          | d) Histogenesis      |
| e) Caulogenesis      | f) Artificial seed   |
| g) Laminar air flow  | h) Cybrids           |
| i) Mannitol          | j) Androgenesis      |
| k) Thawing           | l) DMSO              |

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