

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

P. Pages : 2

Time : Three Hours



GUG/W/24/13331

Max. Marks : 50

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

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

- a) Basic composition of culture media.
- b) Role of hormones in tissue culture.

OR

Write short notes on: **2½x4**
=10

- c) Outline of plant tissue culture procedure.
- d) Gamborg's media.
- e) Role of vitamins in plant tissue culture.
- f) Applications of plant tissue culture.

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

- a) Regeneration in plant tissue culture and its types.
- b) Somatic Embryogenesis.

OR

Write short notes on: **2½x4**
=10

- c) Totipotency
- d) Dedifferentiation
- e) Organogenesis
- f) Redifferentiation

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

- a) Define protoplast and write on protoplast isolation.
- b) Micropropagation

OR

Write short notes on:

**2½x4
=10**

- c) Shoot tip culture
- d) Protoplast fusion
- e) Advantages of secondary metabolite production
- f) Selection of somatic hybrids

4. Write notes on:

**5x2
=10**

- a) Anther culture.
- b) Cryopreservation

OR

Write short notes on:

**2½x4
=10**

- c) Ovary culture
- d) Triploid production
- e) Hardening
- f) *In situ* conservation

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

**1x10
=10**

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|-----------------|-------------------|
| a) Callus | b) Haberlandt |
| c) Explant | d) Synthetic seed |
| e) Caulogenesis | f) PEDC |
| g) Elicitors | h) Cryotherapy |
| i) PEG | j) Pollen culture |
| k) Thawing | l) Green house |
