

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 154504

Roll No.

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B.Tech.

(SEM. V) THEORY EXAMINATION, 2015-16

PLANT BIOTECHNOLOGY

[Time:3 hours]

[Total Marks:100]

Section-A

1. Attempt **all** parts. All parts carry **equal** marks. Write answer of each part in **short**. (10×2=20)
  - (a) Define totipotency and multipotency.
  - (b) Differentiate callus from somatic embryo.
  - (c) What is continuous culture?
  - (d) Differentiate micropropagation from macropropagation.
  - (e) Differentiate IAA from IBA.
  - (f) Define importance of Agar in preparation of nutrient media.
  - (g) What is Laminar air flow?

- (h) What is dedifferentiation?
- (i) Differentiate hybrid from cybrid.
- (j) Preservation of plant material in liquid nitrogen is known as .....

**Section-B**

Attempt **any five** questions from this section. (10×5=50)

- 2. What do you understand by acclimatization? Explain with suitable example.
- 3. Define one standard plant tissue culture media along with components.
- 4. Define various types of calli reported in plant tissue culture and its importance.
- 5. Describe various mechanism of protoplasm fusion with suitable diagrams.
- 6. Define one technique of isolation of single cell with suitable diagram.
- 7. What are secondary metabolites? Write 5 secondary metabolites with plant source.
- 8. Define process of production of synthetic seeds with importance.
- 9. Write down 10 application of plant tissue culture.

**Section-C**

Attempt **any two** questions from this section. (15×2=30)

- 10. What is Somaclonal variation? How is it different from gametoclonal variation. Explain the importance of somaclonal variation in inducing genetic variability in plants.
- 11. Define the process of hardening in plant tissue culture. Why this stage is considered to be most crucial stage?
- 12. Explain of importance of plant tissue culture in transgenic development with 2 suitable examples.

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