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Name.....

Reg. No.

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, FEBRUARY 2009

General Biotechnology

GBT : 213—PLANT TISSUE CULTURE

Time : Three Hours

Maximum : 80 Marks

Section A

*Answer any **two** questions.*

1. Discuss the role of plant growth regulators *in vitro* regulation of morphogenesis.
2. Explain *ex situ* conservation methods.
3. Outline the biosynthetic pathways of secondary metabolites. Enumerate the factors influencing *in vitro* production of secondary metabolites.

(2 x 10 = 20 marks)

Section B

*Answer any **ten** questions.*

4. Describe various stages in micropropagation. Add a note on micropropagation in commercial perspective.
5. Discuss the factors influencing *in vitro* production of haploids.
6. How do you manipulate 'embryo rescue' *in vitro* ?
7. Give an account of protoplast isolation and culture.
8. Distinguish between hybrids and cybrids.
9. Define somaclonal variation. Enumerate the factors influencing *in vitro* genetic variations.
10. Explain the role of mutation in plant tissue culture system.
11. Differentiate zygotic embryos and somatic embryos.
12. Describe cell suspension culture.
13. What are the essential components in Gamborg medium ?
14. Describe laboratory set up and requirements for a tissue culture on commercial scale.
15. Explain various strategies to avoid contamination *in vitro*.

(10 x 5 = 50 marks)

Turn over

Section C

*Answer **all** questions.*

16. **Hormone habituation.**
17. **Direct organogenesis.**
18. **Xylogenesis.**
19. **Vitrification.**
20. **Triploids.**

(5 x 2 = 10 marks)