

D 9082

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Name.....

Reg. No.....

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2010

General Biotechnology

GBT 213—PLANT TISSUE CULTURE

Time : Three Hours

Maximum : 80 Marks

Section A

*Answer any **two** questions.
Each question carries 10 marks.*

1. Define secondary metabolites. Describe various pathways of secondary metabolites production. List out the factors influencing *in vitro* production of secondary metabolites.
2. Give an account on haploid production and add a note on its application in plant improvement.
3. Describe isolation and purification methods of **protoplasts** and enumerate the factors affecting **protoplasts** yield and viability.

(2 x 10 = 20 marks)

Section B

*Answer any **ten** questions.
Each question carries 5 marks.*

4. Explain advantages of cell suspension culture.
5. Enumerate the factors affecting *in vitro* production of **triploids**.
6. How do you set a tissue culture laboratory on a commercial scale ?
7. Describe *in vitro* pollination.
8. Give an account on **somaclonal** variation.
9. Role of **bioreactors** in secondary metabolite production—Discuss.
10. How do you induce mutations *in vitro* cultures ?
11. Describe hormone habituation.
12. Explain the role of **biotransformation** in secondary metabolite production *in vitro*.
13. Compare and contrast **organogenesis** Vs. Somatic **embryogenesis**.
14. Describe factors affecting **organogenesis**.
15. How do you control endogenous microbial contamination *in vitro* cultures ?

(10 x 5 = 50 marks)

Turn over

Section C

*Answer all questions.
Each question carries 2 marks.*

16. **Chimeros.**
17. Robotics and automation.
18. Vitrification.
19. **Caesin hydrolysate.**
20. **Electroporation.**

(5 x 2 = 10 marks)