

**D 26242**

**Name**.....

**Reg. No.**.....

**THIRD SEMESTER M.Sc. DEGREE EXAMINATION  
SEPTEMBER/OCTOBER 2006**

**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. Explain in detail the *in vitro* **production and significance of "haploids" in plant improvement.**
2. Describe **parasexual** hybridization and briefly explain its utility in crop improvement.
3. Enumerate the factors influencing **somaclonal** variations and its practical applications.  
(2 x 10 = 20 marks)

**Section B**

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

4. What are the landmarks contributions in the history of plant tissue culture ?
5. Describe various sterilization methods.
6. Distinguish between "**synseed**" and "zygotic **seed**".
7. Explain the role of **triploid** in plant improvement.
8. Give an account of *in vitro* pollination and fertilization.
9. Distinguish between somatic hybrid and **cybrid**.
10. Distinguish between **organogenesis** and somatic **embryogenesis**.
11. What are the essential constituents of MS medium ?
12. Give an account of **cryopreservation**.
13. Define **biotransformation**. Explain its role *in vitro* production of secondary metabolites.
14. Explain hardening process.
15. How do you set-up a tissue culture laboratory on a commercial scale ?  
(10 x 5 = 50 marks)

**Section C**

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

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|------------------------------------|------------------------|
| 16. Hormone habituation.           | 17. Vitrification.     |
| 18. Robotics and automation.       | 19. Role of suspensor. |
| 20. Immobilization of plant cells. |                        |
- (5 x 2 = 10 marks)