

**D 1594**

**Name** .....

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

**THRID SEMESTER M.Sc. DEGREE EXAMINATION, NOVEMBER 2009**

**General Biotechnology**

**GBT 213—PLANT TISSUE CULTURE**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer any **two** questions.*

1. Explain the stages and factors affecting **micropropagation**. Add a note on its commercial application.
2. Explain *ex situ* conservation methods.
3. Define **somaclonal** variations. Enumerate the factors influencing *in vitro* genetic variation. Add a note on **somaclonal** variation in crop **imporvement**.

(2 X 10 = 20 marks)

**Section B**

*Answer any **ten** questions.*

4. Discuss the factors influencing *in vitro* production of **haploids**.
5. Give an account of **protoplast** isolation and culture.
6. Distinguish between **hydrids** and **cybrids**.
7. Differentiate between zygotic embryos and somatic embryos.
8. What are the essential components in woody plant medium ?
9. What are the factors controlling **organogenesis** ?
10. Explain the role of **cytokinins** *in vitro* studies.
11. Explain the role of hairy root culture in secondary metabolite production.
12. How do you set a tissue culture laboratory on a commercial scale ?
13. Explain various strategies to avoid contamination.
14. How do you manipulate 'embryo rescue' *in vitro* ?
15. Describe hormone habituation.

(10 x 5 = 50 marks)

**Section C**

*Answer all questions.*

16. **PCV**.
17. **Chimeras**.
18. **Vitrification**.
19. **Role** of suspensor.
20. **Xylogenesis**.

(5 x 2 = 10 marks)