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Name.....

Reg. No.....

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION
SEPTEMBER/OCTOBER 2005**

**General Biotechnology
GBT 215—GENETIC ENGINEERING**

Time : Three Hours

Maximum : 80 Marks

Section A

Answer any two questions.

1. Describe the **transgenic** and gene knockout techniques.
2. Write an essay on gene regulation.
3. Explain *site—directed* **mutagenesis** and protein engineering in detail.

(2 x 10 = 20 marks)

Section B

Answer any ten questions.

4. Explain DNA sequencing techniques.
5. Describe PCR and its applications.
6. Write about characterization of recombinant protein.
7. Explain chromosome **microdissection** and **microcloning**.
8. What is animal trafficking and poaching ?
9. Describe gene therapy.
10. Write about gene regulation and silencing ?
11. Explain DNA **microarray** technology.
12. How 'Ti' and 'Ri' plasmids are used as vectors.
13. Describe 35S **CMV** and other promoters ?
14. Explain the vector less or direct DNA transfer in plants.
15. Write about **chitinase** and 1, 3 beta **glucanase** gene transfer in plants.

x 5 = 50 marks)

Section C

Answer all questions.

16. What is patenting of life forms ?
17. What is SI' mapping ?
18. Explain RAPD analysis.
19. What is electroporation ?
20. Describe PR proteins.

(5 x 2 = 10 marks)