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Name.....

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Reg. No.....

**FOURTH SEMESTER M.Sc. DEGREE EXAMINATION
JUNE 2011**

General Biotechnology

GBT 215 – GENETIC ENGINEERING

Time : Three Hours

Maximum : 80 Marks

Section A

*Answer any **two** questions.*

1. What is gene therapy ? Explain the strategies employed with suitable diagrammatic representation.
2. Write detailed account on **PCR** and its applications.
3. Write in detail about **Transgenic** and Gene Knockout Technologies.

(2 x 10 = 20 marks)

Section B

*Answer any **ten** questions.*

4. Enumerate various types **PCR** with its applications.
5. Explain the production strategy of *Bt* cotton.
6. Write short notes on protein engineering.
7. Give short notes on pedigree analysis.
8. What are vectors? Mention about any *two* bacterial vectors with its **plasmid** map.
9. What is Insulin? How it is commercially produced?
10. Define Chromosome mapping and state its importance in gene mapping.
11. Explain random shot gun sequencer of whole **genome**.
12. Explain the strategies involved in sequencing the whole **genomes**.
13. What are **Ti** and **Ri** vectors? Explain its role in genetic engineering.
14. Plant viruses as vectors. Justify.
15. Write a short note on the production of insect resistance plants. Give some examples.

(10 x 5 = 50 marks)

Section C

*Answer **all** questions.*

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|---------------------------|---------------------------|
| 16. Coat Protein. | 17. Sulfonyl urea. |
| 18. Particle bombardment. | 19. Gene augmentation. |
| 20. Gene editing. | |

(5 x 2 = 10 **marks**)