



FACULTY OF SCIENCE
M.Sc. IV Semester Examination, April/May 2013
MICROBIOLOGY
Paper – I : Molecular Biotechnology

Time : 3 Hours]

[Max. Marks : 80

Note : Answer *all* questions. *Each* question carries 4 marks in Section **A** and 12 marks in Section **B**.

SECTION – A **(8×4=32 Marks)**
(Short Answer Type)

1. Enhancer
2. Sigma switch
3. Types of transposons
4. Designing of primers
5. Methods of gene transfer
6. Western Blot
7. IPR
8. Pharmacogenomics.

SECTION – B **(12×4=48 Marks)**
(Essay Type)

9. a) Give an account of signal transduction with suitable examples.

OR

- b) Explain the gene regulation of tryptophan operon.



10. a) Describe the principle of PCR. Write a note on RT-PCR and its applications.

OR

b) What are plasmids ? Describe plasmid transfer mechanisms.

11. a) Explain how to construct C-DNA library. Compare application potential of CDNA and genomic libraries.

OR

b) Describe various vectors used in genetic engineering with a note on expression vectors.

12. a) What are molecular markers ? Explain any two methods used for DNA fingerprinting.

OR

b) Give an overview of IPR and discuss importance of patenting.