2013

M.Sc.

3rd Semester Examination

MICROBIOLOGY

PAPER—MCB-301

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* questions from each group.

Group — A

[*Marks : 20*]

Answer any *two* questions.

1. Distinguish between endopeptidase and exopeptidase citing example. Tabulate the steps involved in a peptide sequence determination. Briefly describe Edman degradation procedure. Explain the role of "SDS" in SDS-PAGE. 2+2+4+2

2. Describe about the isolation of a gene having tissue specific expression with proper flow chart. Differentiate between cloning and expression vectors with examples. Enumerate essential properties of an ideal vector used for cloning. 4+3+3

3. Describe the principle & steps involved in Southern Blotting. Compare plasmid, cosmid and YAC vectors. What is transformation and transfection?

$(1\frac{1}{2}+2)+(1\frac{1}{2}\times 3)+2$

Group — B

[Marks : 20]

Answer any *two* questions.

4. What is DNA fingerprinting? Briefly describe any one method of DNA fingerprinting. Write down the application of genetic engineering in medicine. 3+3+4

5. What is cloning? Write short note on Agrobacterium mediated gene transfer method. What is transgenic plants? 3+5+2

6. Write notes on the following : 5×2

   (a) C DNA library ;

   (b) Liposome mediated gene transfer ;

   (c) Transgenic animal. 3+3+4