PG Odd Semester (CBCS) Exam., December—2016

MICROBIOLOGY

(3rd Semester)

Course No. : MIBCC–304

(Bioinstrumentation and Computer Application)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. *(a)* Write down the principles, types and application of potentiometric titration. 7

(b) Write down the principles of different types of electron microscopy and their applications. 7

2. Write notes on the following : 7×2=14

(a) Fluorescent microscopy

(b) Cytophotometry

UNIT—II

3. *(a)* Describe how subcellular organelles can be separated by centrifugation. 7

(b) What is gel filtration? Describe how the molecular weight of a protein can be determined by gel filtration. 2+5=7

4. Write notes on the following : 7×2=14

(a) Gas chromatography

(b) Ultra-centrifugation

UNIT—III

5. Describe the essential components of a UV-visible spectrophotometer and its use in biochemical analysis. 7+7=14

6. Write notes on the following : 7×2=14

(a) MALDI-TOF

(b) X-ray diffraction

UNIT—IV

7. State the effects of SDS on proteins. Mention the working principle and application of SDS-PAGE electrophoresis. 2+6+6=14

8. *(a)* Differentiate between 1D and 2D gel electrophoresis. 7

(b) Write a note on Western blotting. 7

UNIT—V

9. *(a)* What are databases? Discuss about different types of database and add a note on their significances. 1+3+3=7

(b) What do you mean by measures of central tendency? Explain each type. 2+5=7

10. Write notes on the following : 7×2=14

(a) BLAST and FASTA

(b) Computer applications in microbiology

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