PG Odd Semester (CBCS) Exam., December—2017

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. Write down the principles of different types of microscopy and their application. 14

2. Describe the essential components of a flow cytometer with the help of suitable diagrams and its use in microbiology. 14

UNIT—II

3. Write short notes on any *two* of the following : 7×2=14

(a) Ion-exchange chromatography

(b) Gel filtration chromatography

(c) Affinity chromatography

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

(a) Basic principle and application of centrifugation

(b) Density gradient and ultra-centrifugation

UNIT—III

5. Explain the essential components of a MALDI-TOF and its use in biopolymer analysis. 14

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

(a) NMR

(b) Atomic absorption spectroscopy

UNIT—IV

7. Describe the working principles of different types of electrophoresis and their application. 14

8. Write short notes on any *two* of the following : 7×2=14

(a) Western blotting

(b) Northern blotting

(c) Southern blotting

UNIT—V

9. What are databases? Explain the different types of databases and their application and significance in microbiology. 14

10. Write short notes on any *two* of the following : 7×2=14

(a) Mean, median and mode

(b) Standard deviation and standard error

(c) BLAST

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