2019

PG Even Semester (CBCS) Exam., May—2019

MICROBIOLOGY

(4th Semester)

Course No. : MIBCC–402

(Industrial Microbiology and Fermentation Technology)

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. List out essential parts of fermenter and write note on each part. 14

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

(a) Recent development in industrial microbiology

(b) Photobioreactor

UNIT—II

3. *(a)* Discuss the role of site directed mutagenesis towards strain improvement in industrial microbiology. 7

(b) Genome shuffling in one of the novel genetic techniques for microbial strain improvement. Justify. 7

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

(a) Glycolytic pathway

(b) Secondary metabolites

UNIT—III

5. Describe the effect of temperature, nutrient concentration, pH, media formulation and other environmental factors on fermentation. 14

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

(a) Batch culture in fermentation

(b) Kinetics of thermal death of micro-organism

UNIT—IV

7. Explain how the various process parameters are monitored in a fermentor. 14

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

(a) Turbidostat and chemostat

(b) Oxygen transfer kinetics in fermentation

UNIT—V

9. Describe IPR and its relevance in life sciences industry. 14

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

(a) Chromatography

(b) Different stages of downstream processing

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