PG Even Semester Exam, 2024

Microbiology

4th Semester

COURSE NO. MBCC- 653

[Industrial Microbiology & 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, selecting one from each unit.

UNIT-I

1. a. Discuss the milestone in the development of industrial microbiology. 7

   b. List out the essential parts of fermenter and write a note on each part. 7

2. Write short notes on any two of the following: 7x2=14

   a. Submerged Fermentation

   b. Photo bioreactors

   c. Economic aspects of fermentation

UNIT-II

3. Describe the steps involved in isolation, selection, improvement and maintenance of industrial important strains. 14

Turn over

4. Write short notes on any two of the following: 7x2=14

   a. Glycolytic pathways

   b. Secondary metabolites

   c. Protoplast fusion

UNIT-III

5. Describe in brief about growth kinetics of microorganisms and draw it's relation with Monad's equation. 14

6. Explain the effects of different environmental factors influencing fermentation. 14

UNIT-IV

7. a. Explain how the various process parameters are monitored in a fermenter? 7

   b. Physical and chemical environment sensors. 7

8. Write short notes on: 7x2=14

   a. Foam and antifoam-instrument control

   b. Oxygen transfer kinetics in fermentation

UNIT-V

9. Discuss the issues and topics of Bioethics. 14

10. Write short notes on any two of the following: 7x2=14

    a. Intellectual property rights (IPR)

    b. Chromatography

    c. Different stages of downstream processing

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