2022

Microbiology

[HONOURS]

(CBCS)

(B.Sc. Fifth Semester End Examination-2022)

PAPER-CC11T

Full Marks: 40 ***Time: 02 Hrs***

The figures in the right hand margin indicate marks

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

Illustrate the answers wherever necessary

Industrial Microbiology

Group-A

Answer any five questions of the following: **5x2=10**

1. Which type of micro organism are used in the production of streptomycin and Ethanol? 1+1
2. Difference between Batch culture and Fed batch culture? 2
3. Write down the name of two foam control agents in Fermentor. 1+1
4. What are secondary metabolites? 2
5. What is KLa? 2
6. Write down the culture preservation process of industrial importance microbes. 2
7. What is baffles? Write its importance. 1+1
8. Write down a short note on scale up process. 2

Group-B

Answer any four questions of the following: **4x5 = 20**

1. a) Write down two advantage of airlift bioreactor.

   b) Describe the significance of down stream processes of industrial fermentation. 2+3

2. a) Differentiate between solid state fermentation and liquid state fermentation.

   b) Explain any one techniques involved in downstream processing. 2+3

3. Differentiate turbidostat and chemostat? Distinguish between stationary and submerged fermentation. 2+3

4. Write down the biochemical pathway for the production of following products (i) Ethanol and (ii) vitamin B_{12}. 2+3

5. Briefly describe the methods of enzyme immobilization. What is the role of penicillin acylase enzyme? 4+1

6. a) What is cell immobilization?

   b) Mention one method of cell immobilization?

   c) Write down its advantages and disadvantages.

Group –C

Answer any one question: **1x10 = 10**

1. a) What is bio reactor? Explain with diagram.

   b) Write down a note on any two parameters for control of the fermentation process. $5+2\frac{1}{2}+2\frac{1}{2}$

2. Write short notes on the following

   a) Corn step Liquor.

   b) Packed-bed fermenter

   c) Baker's yeast

   d) Centrifugation $4\times2\frac{1}{2}$
