

**Microbiology [Honours]****[CBCS]****B.Sc. Fifth Semester End Examination-2023****(Regular & Supplementary Paper)****PAPER-C11T****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***Group A****Answer any FIVE questions of the following: 5x2= 10**

1. Name the suitable microbes for the production of protease, vit-B-12. 2(1+1)
2. Differentiate between aerobic and anaerobic fermentation.
3. Differentiate between freeze dried and spray dried method
4. What is Wort and Brewing? 1+1
5. Write the importance of yeast extract and peptone in media formation.
6. Write the name of bottom yeast and top yeast.
7. What is down stream processing.
8. What is air-lift bioreactor?

(2)

**Group B**

**Answer any FOUR questions of the following:  $4 \times 5 = 20$**

1. Describe the structure of typical bioreactor with suitable diagram. What is the role of sparger. 4+1
2. Write down the principle and applications of chemostate. 2.5+2.5
3. Write short note on
  - i) Fed batch fermentation
  - ii) Strain preservation 2.5+2.5
4. Write the advantages of encapsulation process.  
Write the applications of enzyme immobilization. 2.5+2.5
5. Write the strain improvement procedure (any one)  
State the importance of glucose isomerase. 3+2
6. What is inoculum? Write the step of inoculum preparation in industry. 2+3

**Group C**

**Answer any ONE question of the following:  $1 \times 10 = 10$**

1. Write the a) Name of suitable strain  
b) Suitable media  
c) product recovery procedure for citric acid production and wine production. (1+2+2)×2
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(3)

2. State the advantages and disadvantages of solid state fermentation.

Classify wine according to alcohol percentage.

Why biotin limiting condition essential for glutamic acid production? (2+2)+2+4

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