

B.Sc.-II (CBCS Pattern) Semester - IV  
**USMBT07 / 10 - Microbiology Paper-I (Industrial Microbiology)**

P. Pages : 2

Time : Three Hours



**GUG/S/23/12012**

Max. Marks : 50

- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw diagram wherever it is required.

1. Explain design and structure of typical Fermentor with function of different parts. **10**

**OR**

- a) Discuss the continuous fermentation and its types. **2½**
- b) Write a note on Air lift fermenter. **2½**
- c) What are antifoaming agents? Write the properties of antifoaming agents with examples. **2½**
- d) Explain surface culture and submerged culture? **2½**

2. Describe in detail secondary screening in fermentation process. **10**

**OR**

- a) Describe about Saccharine and starchy raw materials for fermentation. **2½**
- b) Write any five industrially important Microorganism. With their product. **2½**
- c) Write note on Tolerance studies. **2½**
- d) Write note on sulphite waste liquor. **2½**

3. Explain in detail about downstream fermentation process. **10**

**OR**

- a) Explain lyophilization process in downstream fermentation process. **2½**
- b) Write short note on enzymatic method of cell disruption. **2½**
- c) Explain ultrasonication method for the cell disruption. **2½**
- d) Describe precipitation method for the concentration of products. **2½**

4. Describe industrial production of Bakers Yeast with a flow sheet diagram. **10**

**OR**

- a) Explain the Biochemistry of Citric acid production. 2½
- b) Describe major steps of penicillin production. 2½
- c) Explain Lysine production in short. 2½
- d) Describe Wine production steps in brief. 2½
- 5.** Solve **any ten** questions (Each question carry one mark). **1x10**  
**=10**
- a) What is batch fermentation?
- b) What is submerged fermentation?
- c) What is agitator?
- d) What is screening of Microorganism.
- e) Enlist the any two name of nitrogenous material used in fermentation process.
- f) What is scale up?
- g) What is upstream processing?
- h) Give the name of two chemical methods used for the cell disruption.
- i) What is cation exchanger?
- j) What is active dry yeast.
- k) Enlist any two fermented product.
- l) Write name of strain used for Lysine production.

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