

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

P. Pages : 2

Time : Three Hours



GUG/S/25/12012

Max. Marks : 50

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

1. Describe design and structure of typical fermenter with function of different parts. **10**

OR

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

2. Explain in detail primary screening methods? **10**

OR

- a) Write note on Tolerance studies. **2½**
- b) Write a note on secondary screening. **2½**
- c) Write note on Nitrogenous materials in fermentation media. **2½**
- d) Describe about Saccharine and starchy raw materials for fermentation. **2½**

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

OR

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

4. Explain in detail about industrial production of Penicillin with a flow sheet diagram. **10**

OR

- a) Describe major steps of Amylase production. 2½
- b) Explain the Biochemistry of Citric acid production. 2½
- c) Describe Wine production steps in brief. 2½
- d) Explain the Biochemistry of Lysine production. 2½

5. Solve **any ten** questions (each question carry one mark). **1x10**

- a) What is agitator?
- b) What is submerged fermentation?
- c) What is batch fermentation?
- d) What is scale up process?
- e) What is screening of Microorganism.
- f) What is Pharma media.
- g) What is upstream processing?
- h) Give the name of two chemical methods used for the cell disruption.
- i) What is cation exchanger?
- j) Enlist the organisms used in Yeast production.
- k) Organism used in Wine production?
- l) Write name of mutant strain used for Lysine production.
