B.Sc.- II CBCS Pattern Semester-IV

USMBT07 - Microbiology Paper-I : Industrial Microbiology

P. Pages : 2 **GUG/W/23/12012**

Time : Three Hours * 6 9 0 6 * 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 fermenter with function of different parts. **10**

OR

a) Discuss steady state fermentation and its types. **2½**

b) Write a note on CSTF. **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 primary screening technique for isolation of industrially important microorganism. **10**

OR

a) Describe about Saccharine materials for fermentation medium. **2½**

b) Explain about industrially important microorganism with their product. **2½**

c) Write note on Tolerance studies. **2½**

d) Write note on sulfite waste liquor used in fermentation media. **2½**

3. Explain in detail solvent recovery 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 ultrasonification method for the cell disruption. **2½**

d) Describe precipitation method for the concentration of products. **2½**

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

OR

a) Explain the Biochemistry of Citric acid production. **2½**

b) Describe major steps of amylase production. **2½**

c) Explain Lysine production in short. **2½**

d) Describe wine production steps in brief. **2½**

5. Solve **any ten** questions. **1x10**

a) What is batch fermentation?

b) What is dual fermentation?

c) What is agitator?

d) What is enrichment culture technique pharmamedia.

e) Enlist the name of microorganism involved in baker yeast production.

f) What is upstream processing?

g) Give the name of two chemical methods used for the cell disruption.

h) What is cation exchanger?

i) What is red wine.

j) Write use of lysine in food industry.

k) Write name of strain used for lysine production.

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