

B.Sc. (CBCS Pattern) Sem-IV
USMBT07 - 10 - Microbiology Paper-I : Industrial Microbiology

P. Pages : 2

Time : Three Hours



GUG/W/22/12012

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Discuss in detail about various parts of bioreactor with diagram. **10**

OR

a) Discuss about batch fermentation. **2½**

b) Discuss the role of computer in fermentation process. **2½**

c) What is the scope of industrial microbiology? **2½**

d) Give the ideal characters of bioreactor. **2½**

2. Discuss in detail about secondary screening method. **10**

OR

a) Write notes on Auxanography technique for isolation of growth factor producing organism. **2½**

b) Describe crowded plate technique for isolation of antibiotic producing organism. **2½**

c) Discuss about corn steep Liquor as a raw material of fermentation medium. **2½**

d) Describe molasses as a raw material of fermentation medium. **2½**

3. Discuss in detail about upstream process in detail. **10**

OR

a) Discuss in brief about cell mass removal by centrifugation. **2½**

b) How the cell disruption is obtained by chemical method? **2½**

c) Discuss quality testing of end product of fermentation. **2½**

d) Give the information about marketing of product. **2½**

4. Describe an industrial production of an antibiotic Penicillin with flow sheet diagram. **10**

OR

- a) Discuss about the uses of citric acid. 2½
- b) Describe wine production in brief. 2½
- c) Give the information about fermented food Idli. 2½
- d) What is compressed yeast and active dry yeast write merits and demerits of active dry yeast. 2½

5. Solve **any ten** of the following.

- a) What is the function of sparger in bioreactor? 1
- b) Define continuous fermentation. 1
- c) What is dual culture fermentation? 1
- d) What is Sulphite waste liquor. 1
- e) Enlist any two microorganisms and their industrially important products. 1
- f) Define scale up process. 1
- g) Which physical method is generally used for cell disruption? 1
- h) Enlist the steps in upstream processing of fermentation. 1
- i) Which material is generally used for packaging of products? 1
- j) What is the name of Mould used for citric and production by fermentation. 1
- k) What is maturation period in Bakers Yeast production. 1
- l) Which microbial culture is used for Bakers Yeast production. 1
