

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

P. Pages : 2

Time : Three Hours



**GUG/W/24/12012**

Max. Marks : 50

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- Notes : 1. All questions are compulsory & carry equal marks.  
2. Draw diagram wherever necessary.

**1.** Define fermentation ? Discuss batch and continuous fermentations with suitable examples. **10**

**OR**

- a) Add a note on scope of Industrial Microbiology. **2½**
- b) Draw well labelled diagram of fermenter. **2½**
- c) Write a note on Antifoaming agents. **2½**
- d) Explain the role of baffles in fermenter. **2½**

**2.** Describe various primary screening methods for the isolation of Industrially important microorganisms. **10**

**OR**

- a) Explain the inoculum build up produce in brief. **2½**
- b) Write short note on sulphite waste liquor. **2½**
- c) Give any one example of molasses as carbon substrate provider. **2½**
- d) Write about tolerance studies in industrial fermentation. **2½**

**3.** Describe cell disruption as a downstream process by physical & chemical methods. **10**

**OR**

- a) Explain the role of pure culture collection laboratories. **2½**
- b) Explain the process of centrifugation for cell mass removal. **2½**
- c) Add a note on quality testing of end product. **2½**
- d) How marketing of the product is done, explain with suitable example. **2½**

4. Describe in detail the production of Baker's Yeast with suitable flowsheet diagram. 10

OR

- a) Write about different types of wine. 2½
- b) Write in short about mechanism of fermentation. 2½
- c) Describe the industrial production of penicillin in short. 2½
- d) Write short notes on advantages of compressed yeast. 2½

5. Solve **any ten**.

- a) Define surface culture fermentation, give example. 1
- b) Write the use of agitator. 1
- c) Give the role of water jacket in fermenter. 1
- d) Name two nitrogenous raw materials. 1
- e) What is secondary screening? 1
- f) Give any three important microorganism for industrial production with examples of product. 1
- g) Why product recovery is important? 1
- h) What is use of antibiotics in recovery of the fermentation product. 1
- i) What is fermented mash? 1
- j) Write two uses of enzyme amylase. 1
- k) Write two uses of lysine 1
- l) What is maturation period in Bakers Yeast production. 1

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