

**Third Semester B. Sc. Examination**
**MICROBIOLOGY**
**Paper – II**
**Industrial Microbiology**

Time : Three Hours ]

[ Max. Marks : 50

N. B. : (1) All question are compulsory and carry equal marks.  
 (2) Draw diagrams wherever necessary.

1. What is primary screening ? Describe methods of primary screening.

**OR**

Discuss the process of sterilization of fermentor, production media and air. 10

2. Describe the different parts of fermentor. Draw a well labelled diagram of a typical fermentor.

**OR**

Discuss the different types of fermentation processes. 10

3. (a) What is scale up of fermentation process. 5  
 (b) Describe various methods for cell separation. 5

**OR**

(e) Discuss various raw materials used as nitrogen sources for fermentation processes. 5  
 (f) Discuss solvent extraction process for product recovery. 5

4. (a) Give the biochemistry of ethanol production. 2  $\frac{1}{2}$   
 (b) Give the flow sheet of bakers yeast production. 2  $\frac{1}{2}$   
 (c) Discuss the recovery of citric acid. 2  $\frac{1}{2}$   
 (d) Discuss the types of wines. 2  $\frac{1}{2}$

**OR**

(e) Give the biochemistry of penicillin production. 2  $\frac{1}{2}$   
 (f) Give the flow sheet of ethanol production. 2  $\frac{1}{2}$   
 (g) Discuss the production of Vit B12. 2  $\frac{1}{2}$   
 (h) Discuss the recovery of penicillin. 2  $\frac{1}{2}$

5. Solve any Ten :—

(i) Name any two industrially important microorganisms alongwith their products.  
 (ii) What is secondary screening ?  
 (iii) What is the significance of giant colony inhibition technique ?  
 (iv) What is dual fermentation ?  
 (v) What is the role of draft tube in Air lift fermentor ?  
 (vi) What is head space ?  
 (vii) Name any two methods used for cell disruption.  
 (viii) What is sulphite waste liquor ?  
 (ix) What is inoculum development ?  
 (x) What is bottom fermenting yeast ?  
 (xi) Give any two uses of citric acid.  
 (xii) What is SCP ?