

**NTK/KW/15 – 5836**

**Third Semester B. Sc. Examination**

**MICROBIOLOGY**

**Paper - II**

**(Industrial Microbiology)**

Time : Three Hours ]

[ Max. Marks : 50

- N. B. : (1) All questions are compulsory and carry equal marks.  
(2) Draw Well labelled diagrams wherever necessary.

1. Describe any two methods used in primary screening of industrially important micro-organisms.

**OR**

Give an account of sterilization of fermentor along with suitable diagrams. 10

2. Discuss the reactors affecting fermentor design and draw the diagram of a typical fermentor.

**OR**

Describe different types of fermentation processes. 10

3. (a) Discuss scale up of fermentation process. 5  
(b) Write note on corn steep liquor. 5

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Contd.

**OR**

- (c) Write a note on raw materials used as carbohydrate source. 5
  - (d) Write a note on product harvesting. 5
4. (a) Write a note on bacterial SCP.  $2 \frac{1}{2}$
- (b) Give the flow sheet of ethanol production.  $2 \frac{1}{2}$
- (c) Write a note on different types of wines.  $2 \frac{1}{2}$
- (d) Discuss the recovery process of penicillin.  $2 \frac{1}{2}$

**OR**

- (e) Write a note on semisynthetic penicillins.  $2 \frac{1}{2}$
  - (f) Give the flow sheet diagram of citric acid production.  $2 \frac{1}{2}$
  - (g) Write a note on malting.  $2 \frac{1}{2}$
  - (h) Write a note on Vit. B12 production.  $2 \frac{1}{2}$
5. Solve any **ten** :—
- (i) Name any two industrially important solvents produced by fermentation. 1
  - (ii) Enlist any two salient features of secondary screening process. 1
  - (iii) Name any two mutagenic agents used in strain development. 1
  - (iv) What is baffler ? 1
  - (v) What is a sparger ? 1

- (vi) What is the role of draft tube in air lift fermentor? 1
- (vii) Name any two agents used as antifoam agent. 1
- (viii) What is seed tank ? 1
- (ix) What is whey ? 1
- (x) Name the organisms used in beer and wine production. 1
- (xi) What is top yeast ? 1
- (xii) What is active dry yeast ? 1