

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 ?