NKT/KS/17/5121

Bachelor of Science (B.Sc.) Semester—III (C.B.S.) Examination

MICROBIOLOGY (Industrial Microbiology)

Paper—II

Time : Three Hours] [Maximum Marks : 50

Note :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Draw diagrams wherever necessary.

1. Discuss various methods of sterilization of ingredients of media and air. 10

OR

Describe various methods of primary screening of industrially important micro organism. 10

2. Discuss various factors affecting fermentor design. 10

OR

Describe various types of fermentation processes. 10

3. (a) Write a note on inoculum development. 5

(b) Explain any two methods of solid-liquid separation. 5

OR

(c) Discuss various nitrogen sources used in fermentation media. 5

(d) Discuss any one chromatography techniques for product recovery. 5

4. (a) What are advantages and disadvantages of single cell protein ? 2½

(b) Draw flow sheet diagram of citric acid production. 2½

(c) Draw flow sheet diagram of Baker's Yeast production. 2½

(d) Draw flow sheet diagram of ethanol production. 2½

OR

(e) Draw flow sheet diagram of vit B_{12} production. 2½

(f) Explain the role of hop flowers in beer production. 2½

(g) Explain the biochemistry of ethanol production. 2½

(h) Explain the recovery and purification of penicillin. 2½

5. Solve any ***ten*** :

(i) Name any two industrially important micro-organisms used in the production of antibiotics. 1

(ii) Give any two examples of mutagenic agents used in strain development. 1

(iii) Give significance of secondary screening. 1

(iv) What is the function of baffle ? 1

(v) What is air lift fermentor ? 1

(vi) What is sparger ? 1

(vii) What are black strap mollasses ? 1

(viii) What is scale up ? 1

(ix) What is fractional distillation ? 1

(x) What is sparkling wine ? 1

(xi) What are semisynthetic penicillins ? 1

(xii) What is malt ? 1