Roll No. ..... Total Pages : 2

MD/M-20 **18032**

Fermentation Technology

Paper - BTI-803

Time allowed : 3 Hours *Maximum Marks : 65*

Note : Attempt five questions in all, selecting two questions from each unit. However Question No. 1 is compulsory.

Compulsory Question

1. Define / Explain / Comment :
   (i) Auxotrophic v/s Analogue resistant mutants 2
   (ii) Solid state fermentation v/s Submerged fermentation 2
   (iii) Baffles v/s Impellers 2
   (iv) Bubble Column v/s Stirred tank reactor 2
   (v) Cell immubilisation 2
   (vi) Saccharimyces cerevisiae 1
   (vii) Oxygen transfer rate (OTR) 2

UNIT-I

2. Write down different techniques followed in the industry for the preservation of industrially important microorganism. 13
3. (i) Write a comprehensive note on types of industrial fermenters. 7

(ii) Write different classical mutation based approaches followed for improvement of industrially important microorganism. 6

4. Write note on :

(i) Foam formation and control 3

(ii) Batch v/s fed batch mode of fermentation 3

(iii) 1° v/s 2° metabolite3

(iv) Chemostat v/s Turbidastat 4

UNIT-II

5. Write industrial production of :

(i) Streptomycin 7

(ii) Lachi acid 6

6. Write note on :

(i) Industrial production of recombinant protein insulin 4

(ii) Two phase aqueous separation during DSP 4

(iii) Heat and Mass transfer 5

7. Write note on :

(i) Industrial production of Penicillin G acyclose 7

(ii) Different separation techniques during downstream processing of fermentation broth 6