

N-56095

Seat No. _____

M. Sc. (Part – II) Examination

April / May – 2003

Biotechnology : Paper - VII

(Bioprocess & Biochemical Engineering)

Time : 3 Hours]

[Total Marks : 75]

Instruction : All questions carry **equal** marks.

- 1** Discuss the principle and types of continuous culture batch system.

OR

- 1** Explain the following :

- (a) Yield coefficient
- (b) Maintenance Energy
- (c) Kinetics of product formation.

- 2** Give the comparison of batch and semi batch fermentation based on metabolic productivity. Discuss with examples.

OR

- 2** Discuss the kinetics of continuous culture ? Derive the equations for growth rate and yield value.

- 3** Give the design of batch sterilization process. Discuss the Del factor during heating and cooling.

OR

- 3** Discuss the rapid method for the design of sterilization cycles. Explain the scale up of batch sterilization process.

- 4** Explain the basic function of a fermenter. Discuss temperature control system of a fermenter.

OR

4 Explain the following :

- (a) Agitation
- (b) Two Aeration System.

5 Discuss the types of bioreactors. Describe Enzyme bioreactors.

OR

5 Write note on the following :

- (a) Oxygen requirements of Industrial Fermentation
 - (b) Rheology
 - (c) KL avales.
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