

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 steritization 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

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[Contd....

- 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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