CODE NO: RR222302

2008 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

III B.TECH II SEMESTER SUPPLIMENTARY EXAMINATIONS
BIO PROCESS ENGINEERING-I
(BIO-TECHNOLOGY)

AUG/SEP 2008

TIME:3HOUR
MARK:80

ANSWER ANY FIVE QUESTIONS ALL QUESTIONS CARRY EQUAL MARKS.

MARK [16*5=80]

1. Mention different types of enzymes extracted from plant and their application.

2. (a) Explain the major components of a chemostat with the help of a diagram giving the notations used in modeling and analysis.

(b) Explain CSTR with recycle using a schematic diagram.

(c) Describe ideal plug flow tubular reactor giving notations used for analysis and modeling.

3. Describe in detail the theory of oxygen requirement and supply in industrial fermentation.

4. Explain the kinetics of medium sterilisation and obtain a mathematical expression for specific death rate.

5. Explain in detail the stoichiometry involved in the cell growth and product formation.

6. Enumerate the aerobic catabolism of glucose with emphasis on energetics.

7. (a) Enumerate the principle involved in the microbial growth taking an example.

(b) Differentiate between the growth in the batch and continuos systems.

8. Give brief notes on structured models for growth and product formation with relevant examples.