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Total Number of Pages: 02

B.Tech
PCBT4307

6th Semester Regular / Back Examination 2015-16
INDUSTRIAL MICROBIOLOGY AND ENZYME TECHNOLOGY

BRANCH: BIOTECH

Time: 3 Hours

Max Marks: 70

Q.CODE: W107

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: **(2 x 10)**

- a) Define acrylate pathway.
- b) Explain turbidostat with example.
- c) Which phase of bacterial growth curve supports maximum for antibiotics fermentation?
- d) What is saccharification?
- e) Differentiate between feedback repression and feedback inhibition using flow diagram.
- f) In detergent industry protease engineering plays a significant role. Explain it.
- g) Name two lipids and aromatic compounds produced by fermentation processes.
- h) Discuss importance of mutation in strain improvement.
- i) Explain auxotroph with one suitable example.
- j) α -amylase differs from β -amylase in their mode of action. Explain it.

Q2 What do you mean by enzyme stability? Briefly explain the approaches of enzyme engineering increase the enzyme stability across and pH temperature? **(2+8)**

Q3 Write notes on **any two** of the following **(5+5)**

- a) Kinetics of continuous culture
- b) Site directed mutagenesis

Q4 a) Define Enzyme engineering . Draw the flow diagram for the production of acetic acid **(5)**

b) Describe purification of heterologous proteins **(5)**
Q5 Differentiate between:

- a) Natural Media and Synthetic media **(5)**
- b) Entrapment and Cross linking **(5)**

Q6 Discuss detail steps involved in alcohol fermentation. What are the precautionary measures must be taken during fermentation. **(7+3)**

Q7 Describe in detail the applications of enzymes in medical therapy. **(10)**

Q8 Write short notes on: **(5 x 2)**

a) Site directed mutagenesis

b) β -lactam antibiotics