Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **B.Tech.**
PCBT4307

6th Semester Back Examination 2017-18
INDUSTRIAL MICROBIOLOGY AND ENZYME TECHNOLOGY
BRANCH : BIOTECH
Time : 3 Hours
Max Marks : 70
Q.CODE : C207
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer all questions :** **(2 x 10)**

a) What do you understand by the term fermentation?
b) Writ the role of α-amylase in saccharification?
c) What do you understand by the term stock culture and inoculum development?
d) Distinguish between batch and fed-batch fermentation.
e) Explain the term biocatalyst.
f) What is sterilisation and at what temperature sterilisation is made in an autoclave?
g) What is antibiotics and write its mode of action.
h) What is exponential phase growth? Discuss its importance.
i) What is immobilisation? Write any two matrix used in immobilisation?
j) Discuss the role of mutation in strain improvement.

Q2 **a)** Define the term bioreactor? Write the different types of bioreactors and their working principles with appropriate diagram. **(8 + 2)**

Q3 **a)** Briefly describe industrial methods for citric acid production. **(5)**
b) Write the different types of mutations that occurs in nature. **(5)**

Q4 **Write short notes on following (any TWO) :** **(2×5)**

a) Solid state fermentation
b) Submerged fermentation
c) Organic acids

Q5 **a)** Briefly describe the process of isolation, selection and characterization of bacteria for industrial application. **(5)**
b) Discuss briefly the methods involved in strain improvement of yeast. **(5)**

Q6 Write in detail about the various types of enzymes that have industrial applications. **(10)**

Q7 **a)** Explain the different types of immobilization techniques in detail with neat **(5)**

diagrams.

b) Write advantages and disadvantages of immobilized enzymes over native enzymes. **(5)**

Q8 **Write short notes on any TWO of the following :** **(2 × 5)**

a) Role of enzymes in medical therapy

b) Enzyme stabilization

c) Polysaccharides

d) Pigments and aroma