Exam.Code:0908
Sub. Code: 33365

2056

B.E. (Biotechnology) Fourth Semester

BIO-414: Industrial Bio-Technology

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section. State clearly your assumptions.

x-x-x

1. Write briefly: *(1×10 = 10)*

a) Write the applications of Lactic acid.
b) Write the names of crude media available for fermentation.
c) What is the role of baffles in a fermenter?
d) Write the applications of citric acid.
e) List two secondary metabolites.
f) Which organism is used for microbial production of streptomycin?
g) Which organism produces pigments?
h) Write the name of organisms used for production of amylases.
i) What is the role of sparger?
j) Write the applications of amylase enzyme.

SECTION-A

2 a. Discuss the types of carbon and nitrogen substrates for making a production media.
b. Explain the microbial production of citric acid. *(5, 5)*

3. Describe in detail the various components of a fermenter with labelled diagram, and the role of its each component. *(10)*

4. What do you mean by and strain improvement? Discuss various methods of strain improvement. *(10)*

SECTION-B

5. How can industrial enzymes are immobilized. Explain any two methods of enzyme immobilization. Write the advantages of immobilization. *(10)*

6 a. Explain the industrial production of beta carotene.
b. Discuss industrial production of penicillin. *(5, 5)*

7. Write note on following:
a. Microbial biotransformation.
b. Flavoring agents.
c. Proteases enzyme. *(4, 3, 3)*

x-x-x