

2053
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. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) What is secondary screening of organisms? (2)
- b) Give any two examples of primary metabolites (1)
- c) Write the different modes of fermentation (1)
- d) Which crude media has some content of pentose sugar? (1)
- e) Write the method of cryopreservation? (2)
- f) Write the organisms producing acetone-butanol (1)
- g) Write the applications of carotene (2)

UNIT - I

- II. Describe the various components of an ideal growth medium and types of antifoam agents for microbial fermentations. (10)
- III. Describe any two methods of microbial strain improvement. (5,5)
- IV. Describe the design and components of a fermenter with a diagram. (10)

UNIT - II

- V. Describe in detail the microbial fermentation process for production of penicillin. What are semi-synthetic penicillins? (8,2)
- VI. Discuss the microbiology, biochemistry and the production process of acetone - butanol. (10)
- VII. Define immobilization of enzymes. Describe the various methods of enzyme immobilization with diagrammatic sketch. (2,8)

x-x-x

