

BE - 4th Sem.  
Feb. 2023.

Exam. Code: 0908

Sub. Code: 6304

2023

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 Section.

x-x-x

- 1) a) What are crude medias ? Give two examples. (2)
- b) List two secondary metabolites (1)
- c) What are the main products obtained from *S. cerevisiae* . (2)
- d) Which organism is used for microbial production of streptomycin (1)
- e) Which organism produces pigments and name the pigment ? (2)
- f) Write the applications of citric acid (2)

SECTION-A

- 2) List and discuss the various components of an ideal growth medium. (10)
- 3 a) Discuss and draw a labeled sketch of a fermentor. Describe the role of each component.
- b) Discuss various modes of fermentation (7,3)
- 4a) Describe in detail the methods used to generate high yielding strains.
- b) How these strains are preserved. (7,3)

SECTION B

- 5 a) Describe in detail the microbial fermentation process for production of Proteases.
- b) Write its applications (7,3)
- 6 a) Describe the microbial production process of Lactic acid.
- b) Write its applications. (7,3)
- 7) a) Describe various methods of immobilization of enzymes studied by you.
- b) Write the advantages of immobilization (7,3)

x-x-x