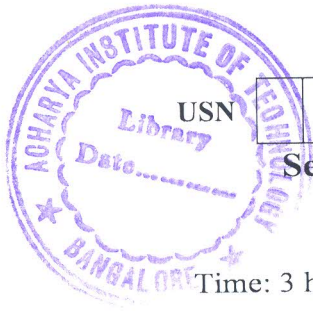


CBCS SCHEME

15BT71



Seventh Semester B.E. Degree Examination, Dec.2019/Jan.2020
Fermentation Technology

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the production of primary and secondary metabolite, with an example. (08 Marks)
b. Distinguish between submerged and solid state fermentation, with an example. (08 Marks)

OR

- 2 a. Discuss in detail the strategies to optimize the product yield by microbial kinetics. (08 Marks)
b. Write a note on brewing technology. (08 Marks)

Module-2

- 3 a. Explain immobilized cell culture. What are the applications and uses of root culture? (08 Marks)
b. Differentiate between monoclonal antibodies and polyclonal antibodies. Write the applications of monoclonal antibodies. (08 Marks)

OR

- 4 a. Write in detail a note on animal cell culture medium, its different ingredients and method of sterilization. (08 Marks)
b. Explain the hybridoma technology for monoclonal antibody production. (08 Marks)

Module-3

- 5 a. Explain the principle of fermentation process with the outline diagram and its different steps in the downstream processing of biochemical products. (08 Marks)
b. Discuss in detail the physical methods of cell disruption. (08 Marks)

OR

- 6 a. With the flow diagram, explain the requirements during the recovery of citric acid to achieve optimum feed in a cast effective manner. What are the cast cutting strategies? (08 Marks)
b. Describe the various electrophoretic techniques. (08 Marks)

Module-4

- 7 a. Discuss the principle and operational aspects of ultrafiltration. (08 Marks)
b. Explain isoelectric precipitation and its advantages. (08 Marks)

OR

- 8 a. Discuss the theoretical models applicable to membrane separations and explain the term rejection coefficient. (08 Marks)
b. Give an account of the theoretical principles and steps involved in the aqueous two – phase – extraction of an enzymes. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

Module-5

- 9 a. Describe the HPLC chromatography process. (08 Marks)
b. Explain the basic principle of gel filtration and how are the inner and void volumes of gel filtration column determined. (08 Marks)
- OR**
- 10 a. Discuss the principle of separation of charged species by ion exchange chromatographic technique. (08 Marks)
b. Write notes on dialysis, electrodialysis and pervaporation (08 Marks)

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