



USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

10BT832

Eighth Semester B.E. Degree Examination, Aug./Sept.2020
Lab to Industrial Scaling

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART – A

- 1 a. Discuss fermentation as a biochemical process. (10 Marks)
b. Write short notes on:
 - i) Microbial enzymes of industrial value. (10 Marks)
 - ii) Applications of batch and fed batch culture. (10 Marks)
- 2 a. Explain the processes involved in the development of inoculum for industrial fermentation using enrichment culture technique. (10 Marks)
b. Briefly discuss the various methods adopted in the preservation of industrially important cultures. (10 Marks)
- 3 a. Discuss the major components of a fermentation media, highlighting their importance. (10 Marks)
b. Write short notes on:
 - i) Importance of media optimization. (10 Marks)
 - ii) Antifoams. (10 Marks)
- 4 a. Discuss the processes involved in the development of inoculum for bacterial processes. (10 Marks)
b. Briefly explain any two processes involved in the aseptic inoculation of a plant fermenter from a laboratory fermenter. (10 Marks)

PART – B

- 5 a. With a neat schematic diagram, discuss the basic functions of a fermenter for microbial cell culture. (12 Marks)
b. Explain the principle of air lift fermenters, with neat sketch. (08 Marks)
- 6 a. Explain the various methods of measurements and control of temperature during industrial fermentations. (10 Marks)
b. What is on-line analyser? Explain with a suitable abiotic parameter. (10 Marks)
- 7 a. Explain any two methods for determining K_L a value of the fermenter. Add a note on its significance. (10 Marks)
b. What is meant by scale up and scale down process? Discuss the factors to be considered during the scale up and scale down process. (10 Marks)
- 8 a. Discuss the various aerobic treatment processes involved industrial effluent treatment. (10 Marks)
b. Briefly explain the various methods used for cell disruption. (10 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.