

(20518)

Roll No. _____

B. Sc.(Biotech.)-III Year

3479(N)

B. Sc. (Biotech.) Examination, May 2018

Bioprocess Engineering & Technology

[B-307 (Old) & B-311(New)]

Time : Three Hours

[Maximum Marks : 100

Note: Attempt any *Five* questions. All questions carry equal marks.

1. ✓ Discuss in brief about the isolation, screening and maintenance of industrially important micro-organisms. 20
2. Discuss and compare mechanically agitated reactor and bubble column reactor as fermenter. 20
3. ✓ What is fed-batch culture and what are its benefits in microbial technology ? How is it different from a batch culture? 20

4. ✓ What is downstream processing ? Describe the steps involved in the modelling and simulation of bioprocess. 20
5. Write short notes on any two of the following : $10 \times 2 = 20$
 - (i) Physiochemical methods of cell disruption
 - (ii) Treatment of effluent and its disposal
 - (iii) Methods for determination of cell growth in a fermentation process.
6. What is centrifugation ? Discuss the various factors which affects sedimentation of a molecule during centrifugation. 20
7. ✓ Write short notes on any four of the following: $5 \times 4 = 20$
 - (i) Alexander Flemming
 - (ii) Air sterilization
 - (iii) Crystallization
 - (iv) Cheese making by proteases
 - (v) Beer mashing.
8. Define enzymes. Discuss production, recovery and scaling up of enzymes and their role in food and other industries. 20

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9. What is the use of chromatography in fermentation process ? Discuss the application of adsorption chromatography. 20

10 ✓ Write notes on the following : 10×2=20

- (i) Microbial improvement for increased yield
- (ii) Use of sterilization, aeration and agitation in bioprocess.