

(20518)

Roll No. _____

B. Sc. (Biotech.)-III Year

NS-3478

B. Sc. (Biotechnology) Examination, May 2018

Industrial Biotechnology

(B-306)

(New)

Time : Three Hours]

[Maximum Marks : 75

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

1. Give an account of commercial production of Acetic acid and Lactic acid and their application. 15
2. Write notes on the following : 7½×2=15
 - (a) Biosensors
 - (b) Food adulteration with reference to dairy products.

3. Describe the following : 7½×2=15
 - (a) Selection of industrial microorganism for fermentation
 - (b) Metabolic Engineering.
4. What is Fermentation ? Explain the various stages of microbial growth curve with the help of suitable diagrams. 15
5. Describe in detail the commercial production of Insulin and Vitamin B₁₂ and their application. 15
6. Explain the following : 7½×2=15
 - (a) Product recovery
 - (b) Lactose utilization.
7. What do you mean by enzyme immobilization ? Describe the various methods of enzyme and cell immobilization and their application in industries. 15

8. Describe the basic design of a bioreactor. Explain the heat transfer and scale up bioreactors and their advantages. 15
9. Explain the following : $7\frac{1}{2} \times 2 = 15$
(a) Airlift Bioreactor
(b) Photobioreactor.
10. Explain the commercial production of Lipases and Proteases and their application in industry. 15

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