

**D 70205**

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Name.....

Reg. No.....

**FIFTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2019**

(CUCBCSS-UG)

Biotechnology

**BTY 5B 09—BIOPROCESS TECHNOLOGY**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer any two out of four questions in about 1,500 words.*

*Each question carries 10 marks.*

1. Discuss about the fermentation process of microbial aspects.
2. Detailed account on genetic engineering and protoplast fusion techniques and its applications.
3. Comment on various types of separation techniques with suitable examples.
4. Discuss the fermentation process in single cell protein (SCP) and its applications.

(2 × 10 = 20 marks)

**Section B**

*Answer any seven out of fourteen questions in about 750 words.*

*Each question carries 5 marks.*

5. Brief account of rDNA technology products.
6. Write about the preservation techniques of microbes.
7. What is meant by intercalating agents? Write with suitable example.
8. Discuss the structure of immobilized reactors.
9. Write about the sterilization techniques.
10. Discuss the application of downstream processing.
11. Comment on the strategies of biological drying methods.
12. Briefly explain about amylase production.
13. Write about the immobilization techniques.
14. Explain agar slant storage.
15. Discuss about the different stages of acetic acid production.
16. Explain in pH, DO and RPM.
17. Write about the cell disruption method in intracellular products.
18. Difference between the Low volume - high value and High volume - low value products.

(7 × 5 = 35 marks)

**Turn over**

**Section C**

*Answer all questions in about 300 words.  
Each question carries 3 marks.*

19. What are microbial fermentations ? Comment on its application.
20. Discuss about the screening method and its types.
21. What is lyophilisation ? Explain.
22. Detailed in RO bioprocess and its application.
23. Write about the encapsulation methods.

(5 × 3 = 15 marks)

**Section D**

*Answer all questions in about 200 words.  
Each question carries 2 marks.*

24. DNA mutating agents.
25. Packed bed reactor.
26. Flocculation.
27. Sedimentation.
28. Antibiotics - Penicillins.

(5 × 2 = 10 marks)