

**D 90119**

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Name.....

Reg. No.....

**FIFTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2020**

(CUCBCSS—UG)

Biotechnology

**BTY 5B 09—BIOPROCESS TECHNOLOGY**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer any two questions.*

*Each question carries 10 marks.*

*Over all Ceiling 20 marks.*

1. Discuss about the industrial applications of microbes from soil.
2. Give an account on fermentation equipments and comment on the fermenter parts.
3. Comment on *any* two types of chromatography techniques and draw the structure.
4. Write about the microbial enzyme production in industrial level.

(2 × 10 = 20 marks)

**Section B**

*Answer at least seven questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall ceiling 35.*

5. Brief account on industrial fermentation in rDNA technology.
6. Write about the industrial use of microbes from air.
7. What is mean by protoplast fusion? Write with suitable example for strain improvement.
8. Discuss the growth factors in fermentation techniques.
9. Write about the fed-batch fermentation.
10. Discuss about the sedimentation and filtration.
11. Comment on the strategies of crystallization method.

**Turn over**

12. Briefly explain about protease production.
13. Write about the vitamin B12 fermentation process.
14. How to use the enzymes in fermentation technology.
15. Discuss about the microbial enzyme production.
16. Explain the uses of UV and NTG in cell disruption.
17. Write about the immobilized reactors.
18. Difference between the flocculation and flotation.

(7 × 5 = 35 marks)

### Section C

*Answer at least three questions.*

*Each question carries 5 marks.*

*All questions can be attended.*

*Overall ceiling 15.*

19. Differentiate Low volume-high value and High volume - low value products.
20. Discuss about the storage culture maintenance.
21. Explain about microbial growth kinetics.
22. Detailed in RO bioprocess and its application.
23. Write about the centrifugation process.

(3 × 5 = 15 marks)

### Section D

*Answer all questions.*

*Each question carries 10 marks.*

24. Enlist the various Preservation methods and its types.
25. Define Ion-exchange chromatography.
26. What do you understand by SCP ?
27. Define Microbial enzyme with example.
28. Give the various Ethanol fermentation processes.

(5 × 2 = 10 marks)