

E 8227

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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2019

Fifth Semester

Core Course 17—INDUSTRIAL BIOTECHNOLOGY

(For B.Sc. Biotechnology)

[2013—2016 Admissions]

Time : Three Hours

Maximum Marks : 80

Part A

*Answer all questions.
Each question carries 1 mark.*

1. What are inducers ?
2. What is bioprocess engineering ?
3. What is ultrafiltration ?
4. Define Mutation.
5. What is anaerobic digestion ?
6. What is a sparger ?
7. Name commonly used carbon source in a culture medium.
8. Expand HPLC.
9. Name a defined medium for microbial culture.
10. Write about biomass.

(10 × 1 = 10)

Part B

*Answer any eight questions.
Each question carries 2 mark.*

11. Write about adjustment of pH in a medium.
12. Explain how medium can be sterilized.
13. Write a note on alcohol production.
14. What is Bioprocess technology ?
15. Explain use of centrifugation in bioprocessing.
16. What are antifoam agents ?

Turn over

17. Mention importance of temperature in fermentation
18. Explain protoplasmic fusion.
19. Write about a method for identification of a microbe with desirable character.
20. Write a note on precursors for metabolite production.
21. Give an account of production of a microbial metabolite.
22. Explain primary screening.

(8 × 2 = 16)

Part C

*Answer any six questions.
Each question carries 4 marks.*

23. Explain optimization of fermentation process.
24. Explain how microbes can be cultured.
25. Give an account of use of genetic engineering for improvement of bacterial strains.
26. Illustrate structure and parts of a bioreactor.
27. Describe how citric acid can be produced in industrial scale.
28. Differentiate continuous and fed batch culture.
29. Explain procedure for immobilization of microbial enzymes.
30. Write about designing of a medium for fermentation.
31. Give an account of components of microbial culture media.

(6 × 4 = 24)

Part D

*Answer any two questions.
Each question carries 15 marks.*

32. Describe how an industrially important bacteria can be screened.
33. Explain with examples how industrially important enzymes can be produced.
34. What is fermentation ? Explain different types of fermentation and applications.
35. Explain methods for downstream processing.

(2 × 15 = 30)