

E 1825

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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2015

Fifth Semester

Core Course 17—INDUSTRIAL BIOTECHNOLOGY

(For B.Sc. Biotechnology)

[2013 Admissions]

Time : Three Hours

Maximum : 80 Marks

Part A

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

1. What is chemostat ?
2. Name two industrially important microbial metabolite.
3. What is a cybrid ?
4. What is Centrifugation ?
5. Explain HPLC.
6. What is Rf value ?
7. Give a commonly used carbon source in culture media.
8. What is distillation ?
9. Name a microbe helps in alcohol production.
10. What is a vector ?

(10 × 1 = 10)

Part B

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

11. Explain downstream processing.
12. What is solid state fermentation ?
13. Write about role of filtration in downstream processing.
14. Give a note on applications of protease enzyme.
15. What are the differences between growth medium and production medium ?
16. Write a note on antifoam agents.
17. Differentiate inhibitors and inducers.

Turn over

18. Write about major criteria for designing a bioreactor.
19. Explain methods for product purification.
20. Give an account of medium agitation and its uses.
21. Write a note on cell separation techniques.
22. Write the importance of pH in culture media.

(8 × 2 = 16)

Part C

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

23. Give an account of immobilization of microbial cells.
24. Explain the principle and uses of chromatography.
25. Explain submerged fermentation and its applications.
26. Write about sources and applications of protease.
27. Explain how process of fermentation can be optimized.
28. Discuss significance of batch and continuous culture systems.
29. Explain citric acid production.
30. Outline methods that can be adopted for strain improvement.
31. Explain production of penicillin

(6 × 4 = 24)

Part D

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

32. Give an outline of media used in fermentation. How can we design a medium for fermentation ?
33. Describe isolation and screening of industrially important micro-organisms.
34. What is a Bioreactor ? Explain different types of bioreactors and their uses.
35. Explain how enzyme amylase can be produced through fermentation. Write about industrial application of amylase.

(2 × 15 = 30)