(Pages : 3)

T – 1886

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

Vocational Course

BB 1671 : INDUSTRIAL BIOTECHNOLOGY

(2019 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** the questions in a word or one or **two** sentences. **Each** question carries **1** mark

1. What is sparger?
2. What is lactic acid fermentation?
3. Define biomass.
4. What is Metabolic Engineering?
5. Write the function of amylase.
6. Comment on biogas.
7. What is airlift bioreactor?
8. Define lyophilization.

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9. Glive note on Biocon.

10. What is chemostat culture?

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. **Each** question carries **2** marks. (Answer not to exceed **one** paragraph.

11. How is the desired temperature maintained in a fermentor?

12. Comment on *Propionibacterium freudenreichii.*

13. What is Fed-batch fermentation?

14. Explain ultrafiltration.

15. What is ion exchange chromatography?

16. What is flocculation?

17. Explain downstream processing.

18. What is a batch reactor?

19. What is meant by chemical sterilization?

20. List the industrial applications of protease?

21. What are some potential applications of single cell proteins?

22. Write the advantages of using SSF.

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** questions. **Each** question carries **4** marks. (Answer not to exceed **120** words)

23. Explain the microbial production of citric acid.

24. Describe immobilization of cells and enzymes.

25. Explain the components of media for fermentation.

26. Discuss different methods of media sterilization.

27. Give a short note on microbial production of butanol.

28. Explain the methods of production of beer.

29. Write note on up flow anaerobic sludge blanket reactor.

30. Discuss the applications of alcoholic fermentation.

31. Explain screening of industrially important microbes.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. **Each** question carries 15 marks. (Answer not to exceed **3** pages).

32. What is a bioreactor? Explain its types and specific uses.

33. Give a detailed account on upstream processing?

34. Explain the microbial production of glutamic acid.

35. Explain microbial production of enzymes. Discuss its applications.

(2 × 15 = 30 Marks)
