TDC (CBCS) Even Semester Exam.,
September—2021

BOTANY

(6th Semester)

Course No. : BOTDSE-601T

(Industrial and Environmental Microbiology)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *fifteen* of the following questions : 1×15=15

1. What is lyophilization?
2. What is centrifugation?
3. What is cell disruption?
4. What is spray drying?

5. Name one microbial biofertilizer.

6. Name one microorganism used for production of ethyl alcohol.

7. What is fermentation?

8. What is batch fermentation?

9. What is continuous fermentation?

10. What is a bioreactor?

11. What is a fermenter?

12. What is solid-state fermentation?

13. What is an immobilized enzyme?

14. What is hydrolysis?

15. Name one enzyme which can perform hydrolysis of cellulose.

16. Name one enzyme which can perform hydrolysis of starch.

17. Name one enzyme which can perform hydrolysis of casein.

18. State one application of immobilization.

19. Name one bacteria which may be considered as common pollutant of water.

20. What is sewage?

21. What is BOD?

22. What is COD?

23. What is TDS?

24. What is TOC?

25. What is ectomycorrhizal?

26. What is endomycorrhizae?

27. Name one bacteria which may be used in bioremediation.

28. Name one bacteria which is involved in root nodule formation.

29. What are arbuscules?

30. What is biological fixation?

SECTION—B

Answer any *five* of the following questions : 2×5=10

31. What is downstream processing?

32. State one use of downstream processing.

33. State two advantages of batch fermentation.

34. Mention two advantages of continuous fermentation.

35. What is an airlift fermenter?

36. What is a fluidized bed fermenter?

37. How would you check faecal coliform of a water sample?

38. What is a cesspool?

39. What is a root nodule?

40. How would you isolate root nodulating bacteria?

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SECTION—C

Answer any *five* of the following questions : 5×5=25

41. Write a note on the industrial production of citric acid.

42. Write a note on the production of ethyl alcohol from molasses.

43. Describe with diagram different components of a bioreactor.

44. Write a note on tower fermenter.

45. Write a note on large-scale application of immobilized enzyme.

46. Write a note on advantages of immobilized enzyme. Describe briefly any one method of immobilization of enzyme. 2½+2½=5

47. Write a note on the use of microorganisms as indicator of water quality.

48. Describe briefly two important methods of wastewater treatment.

49. Write a note on biological fixation of nitrogen by non-symbiotic method.

50. Write a note on arbuscular mycorrhizal colonization of plant roots.

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