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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MAY 2024

Fourth Semester

Complementary Course—BIOTECHNOLOGY–INDUSTRIAL AND ENVIRONMENTAL BIOTECHNOLOGY

(For B.Sc. Microbiology)

[2013—2016 Admissions]

Time : Three Hours Maximum Marks : 60

Part A

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

1. At high temperature, what happens to DO ?
2. Define strain.
3. What are air biofilters ?
4. Name the enzyme used in clarification of juice.
5. What is idiophase ?
6. Name two biofuels.
7. Which chemical is used to induce competence ?
8. Give the capacity of a pilot scale bioreactor in L.

(8 × 1 = 8)

Part B

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

9. What is an undefined medium ? Cite one example.
10. Give two examples of substrates used for solid state fermentation.
11. What is vermicomposting ?
12. How are protoplasts derived ?
13. What is secondary screening ?
14. Define site-directed mutagenesis.
15. Give the purpose of flocculation.

Turn over

16. What is biomethanation ?
17. What is FFS ?
18. What is TOC in waste water ?

(6 × 2 = 12)

Part C

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

19. Explain the working principle of a trickling filter.
20. Describe the components in a defined fermentation medium.
21. Differentiate submerged fermentation from solid-state fermentation.
22. What are the techniques used for purification of fermentation product ?
23. Describe the presumptive test for drinking water analysis.
24. What are the characteristics of waste water ?

(4 × 4 = 16)

Part D

Answer any **two** *questions.*
Each question carries 12 *marks.*

25. Write an account on aerobic and anaerobic processes in waste water treatment.
26. Describe in detail the methods of downstream processing.
27. Define bioprocess technology. Give a detailed account of types and applications of fermentation.
28. Write an essay on bacteriological analysis of drinking water. How are drinking water sources disinfected ?

(2 × 12 = 24)