

D 92261

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Name

Reg. No.

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2015

(CUCBCSS-UG)

Core Course—Microbiology

MB 3B 04—ENVIRONMENTAL AND SANITATION MICROBIOLOGY

Time : Three Hours

Maximum : 80 Marks

Section A

Answer all questions.

Each question carries ½ mark.

1. Among the following organisms air-borne infection is caused by :
(a) **Rhabdo virus.** (b) ***Mycobaterium tuberculosis.***
(c) ***Salmonella typhi.*** (d) **Polio virus.**
2. Which of the following water treatment method is most likely to produce carcinogens as a byproduct ?
(a) **Chlorination.** (b) **Ozonation.**
(c) **Sand filtration.** (d) **UV-treatment.**
3. The process of extracting metals from ore-bearing rocks by using micro-organisms is called :
(a) **Bio-extraction.** (b) **Microbial extraction.**
(c) **Biofiltration.** (d) **Microbial leaching.**
4. **BOD** would be most directly affected by the presence of :
(a) **Heavy metals.** (b) **Organic wastes.**
(c) **Salt** (d) **Waste minerals from mining.**
5. The faecal pollution indicator in water sample is _____
6. The lowermost layer of atmosphere is called _____
7. The ultimate degradation and recycling of an organic molecule to its mineral constituents is called _____
8. Introduction of foreign organisms into natural environment for the purpose of increasing the **bioremediation** is called _____
9. Name the common filter used for air filtration.
10. Name the organism called “**superbug**” and used for cleaning oil spills.
11. Name the compound used as major component of anionic detergents.
12. Name the marine micro-organism considered to be the world's largest bacterium.

(12 x ½ = 6 marks)

Turn over

Section B

Answer **all** questions.

Each question carries 2 marks.

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|---|-----------------------|
| 13. BOD. | 14. Cometabolism. |
| 15. <i>Thiobacillus ferro-oxidans</i> . | 16. Redfield ratio. |
| 17. Algal blooms. | 18. Biomagnification. |
| 19. Landfills. | 20. Limnology. |
| 21. PCBs. | 22. Methanogenesis. |

(10 x 2 = 20 marks)

Section C

Write short notes on any **six** of the following.

Each question carries 5 marks.

23. Disease forecasting in plants.
24. Vermicompost.
25. Heavy metal tolerance in micro-organisms.
26. Factors influencing aquatic microflora.
27. Xenobiotics.
28. Estuarine microflora.
29. Microflora of indoor air.
30. Anaerobic sludge digestion.

(6 x 5 = 30 marks)

Section D

Answer any **two** of the following questions.

Each question carries 12 marks.

31. Discuss various sources of micro-organism in air. Add a note on methods used for enumeration of air microflora.
32. What is meant by bioremediation ? Discuss the role of micro-organisms in bioremediation.
33. What are the sources of micro-organisms in water bodies ? Describe the various steps involved in purification of water for municipal supplies.

(2 x 12 = 24 marks)