

**E 6177**



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Reg. No.....

Name.....

**B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, SEPTEMBER 2024**

**Sixth Semester**

Core Course—MICROBIOLOGY AND IMMUNOLOGY

(B.Sc. Zoology Model I and Model II B.Sc. Biological Techniques and Specimen Preparation)

[2012 Admissions]

Time : Three Hours

Maximum Weight : 25

**Part A (Objective Type Questions)**

*Answer all questions.*

*Each bunch of four questions carries a weight of 1.*

**BUNCH I**

1. Methane production is dependent on :
  - (a) Anaerobic condition.
  - (b) Aerobic conditions.
  - (c) Low pH.
  - (d) High nitrogenous waste.
2. Bacteria associated with biogas production :
  - (a) Methanobacterium.
  - (b) Lactobacillus.
  - (c) Azetobacter
  - (d) Aspergillus.
3. Which among the following is an organic pollutant ?
  - (a) Automobile exhausts.
  - (b) Heavy Metal.
  - (c) Sewage.
  - (d) Plastic.
4. Bacteria which use sunlight as its energy source is referred to as a :
  - (a) Oligotrophs.
  - (b) Phototrophs.
  - (c) Heterotrophs.
  - (d) Chemotrophs.





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BUNCH II

5. The process in which bacteria and other infected cells are tagged for destruction :
- (a) Neutralization. (b) Complement activation  
(c) Opsonization. (d) None of the above
6. Rod shaped bacteria are :
- (a) Cocci. (b) Bacillus.  
(c) Sarcinae. (d) Spirochetes.
7. Filamentous bacteria cause sludge to float is called :
- (a) Aeration. (b) Sludging.  
(c) Flocculation. (d) Bulking.
8. Which among the following spoilage is an aerobic process ?
- (a) Surface slime. (b) Putrefaction.  
(c) Taint. (d) Souring.

BUNCH III

9. Flocculation is :
- (a) Suspended colloid precipitation.  
(b) Reducing hardness of water.  
(c) Disinfection of waste water.  
(d) Removal of soluble wastes.
10. Surface plating is otherwise called :
- (a) Streak culture. (b) Stroke culture.  
(c) Carpet culture. (d) Stab culture.
11. Municipal waste is :
- (a) Biodegradable. (b) Non-biodegradable.  
(c) Liquid. (d) All of the above.





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12. HIV genome is \_\_\_\_\_.
- (a) SS RNA. (b) SS DNA.  
(c) DS RNA. (d) SS DNA.

BUNCH IV

13. Biological decomposers in a sewage treatment plant are used in :
- (a) Primary treatment stage.  
(b) Secondary treatment stage.  
(c) Tertiary treatment stage.  
(d) In primary and tertiary stage.
14. The safe distance of a well from a near by septic tank is :
- (a) 50 m. (b) 100 m.  
(c) 200 m. (d) 300 m.
15. Which among the following solid waste should not be used for landfill ?
- (a) Paper waste. (b) Plastic waste.  
(c) Organic waste (d) Glass waste.
16. The term 'Anesic' is used in the ecological classification of :
- (a) Solid wastes (b) Earthworms  
(c) Fungus. (d) Bacteria.

(4 × 1 = 4)

**Part B (Short Answer Questions)**

*Answer any five questions.*

*Each question carries a weight of 1.*

17. What is a waste ?
18. Explain bioreactor.
19. Explain any *two* uses of solid wastes.
20. What is vermiwash ?





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21. What is Biosorption ?
22. What is ETP ?
23. What is Tricking filters ?
24. Explain indicator organisms.

(5 × 1 = 5)

**Part C (Short Essays/Problem Solving Type)**

*Answer any **four** questions.*

*Each question carries a weight of 2.*

25. How the chemical and microbial characters of liquid wastes are assessed ?
26. Don't put a biodegradable waste to a fresh water body. Why ?
27. Describe the activated sludge process.
28. Write briefly on microbial deterioration of paints.
29. Describe Sewage treatments.
30. Give an account on paper mill effluent and its management ?

(4 × 2 = 8)

**Part D (Essay Type)**

*Answer any **two** questions.*

*Each question carries a weight of 4.*

31. Give an account of hospital waste management.
32. Discuss the municipal treatment process.
33. Detail the Vermicomposting procedure, its products and management.

(2 × 4 = 8)

