



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 2nd Semester Examination, 2022

**MCBACOR04T-MICROBIOLOGY (CC4)**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

**Answer Question No. 1 and any four from the rest.**

1. Answer any **four** questions from the following: 2×4 = 8
  - (a) What are the differences between BOD and COD?
  - (b) Define commensalism with proper example.
  - (c) What do you mean by phosphate immobilization? Give two examples of phosphate solubilizing bacteria.
  - (d) What do you mean by biodegradation of pesticides? Explain with suitable example.
  - (e) What is the importance of MPN test in the determination of water potability?
  - (f) What is Nematophagus Fungi? Give one example.
  - (g) What is Nitrification? Give examples of two nitrifying bacteria.
  
2. (a) What is THM? How it is originated? (1+1)+3+3
  - (b) How microbial degradation of cellulose occurs? Explain with proper example.
  - (c) What do you mean by nitrogen fixation? Explain with proper reactions and example.
  
3. (a) Why safety is concerned regarding drinking water? 2+(3+1)+2
  - (b) How completed test of water sample is performed? What is synergistic effect in the microbiological analysis of water?
  - (c) How UV ray works in most of the domestic water purification kit to kill bacteria?
  
4. (a) Write a short note on Composting. 3+(2+2)+1
  - (b) Mention the advantages and disadvantages of sanitary landfill.
  - (c) What do you mean by e-waste?
  
5. (a) What do you mean by amensalism? 1  $\frac{1}{2}$  +2  $\frac{1}{2}$  +4
  - (b) How microbes thrive in low pH? Explain with proper example.
  - (c) Write a comparative note on microbes in human body and ruminant body.

6. (a) Write a comparative note between symbiotic and non-symbiotic interaction with proper example. 3+3+2  
(b) Differentiate parasitism and predation with proper example.  
(c) Define ectendo-mycorrhiza with proper example.
7. (a) What are the various types of solid wastes? What are their sources?  $1\frac{1}{2} + 1\frac{1}{2} + 3 + 2$   
(b) What do you mean by symbiotic and non-symbiotic interactions between microbes-plants?  
(c) What is membrane filter technique?
8. (a) Define Phytoremediation with proper example.  $2 + (2+2) + 2$   
(b) What are organochlorine pesticides? Give two examples of bacterial genera that degrade organochlorine pesticides.  
(c) What are the strategies of pesticide remediation?

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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