

Bankura University
B.Sc 4th Semester (Honours) Examination,2021

SUB: Microbiology

Course ID: 42212

Course Code: SH/MCB/ 402/ C-9

Course Title: Environmental Microbiology

Full Marks: 25

Time: 1h 15min

The figures in the margin indicate full marks

Answer all the questions.

UNIT I

1. Answer *any five* of the following questions: 1x5=5

- a) What are extremophiles?
- b) What is microbiomics?
- c) Define amensalism .
- d) Give an example of a nitrifying bacteria.
- e) What is COD?
- f) What do you understand by potability of water?
- g) Name the gene associated with luminescence in bacteria.
- h) Name one chelating agent.

UNIT II

2. Answer *any two* of the following questions: 5X2=10

- a) Discuss the process of degradation of cellulose and hemicellulose by microorganisms. 5
- b) Elucidate the methods of microbial bioremediation of xenobiotics. 5
- c) What are fecal coliforms. Schematically describe the MPN test? 2+3=5
- d) What is a sludge? Schematically describe the process of waste water treatment. 1+4=5

UNIT III

3. Answer *any one* of the following questions: 1x10 = 10

- a) What is leghemoglobin? Describe the mechanism of root nodule formation by Rhizobium.
What is an alternate nitrogenase? Give example. 2+6+1+1 =10
- b) What are thermozymes? Give example. Give an account of the diversity of fresh water and marine microflora. 1+1+4+4=10