

Bankura University
B.Sc. 6th Semester (Honours) Examination,21
Subject: BOTANY

Course ID:61316

course Code: SHBOT/DSE-3

Course Title: Industrial & Environmental Microbiology

Full Marks: 25

Time: 1h15min.

Unit I

1. Answer any five of the following questions:

1x5=5

- a) What are the trapping techniques used to capture airborne microbes.
- b) Mention one difference between submerged fermentation and solid-state fermentation.
- c) What is the function of Impellers in the components of a bioreactor?
- d) During fermentation why generation of foam takes place?
- e) What is the full form of VAM?
- f) What is immobilization of enzymes.
- g) What do you mean by BOD?
- h) How do you identify that a microbes is producing lipase?

Unit II

2. Answer any two of the following:

5X2=10

- a) Give two uses of enzymes in paper and pulp industry. Where immobilized glucose isomerase enzyme is used? How do you screen cellulose hydrolytic bacteria and fungi separately?
2+1+2=5
- b) Schematically represent the steps of waste water treatment. Name one disease causing bacteria in water.
4+1=5
- c) Describe in short about the isolation of soil microflora. Why *E. coli* is known as an indicator of water pollution?
4+1=5
- d) What are the different components of the medium that are necessary for maximum yield?

Unit III

3. Answer any one of the following

1X10 =10

- a) Describe the various types of bioreactors used in bioprocess technology.
- b) Mention the role of microbes in bioremediation and biotransformation.