

Ref. No.: Ex/FTBE/BS/B/T/212/2023

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING SECOND YEAR FIRST SEMESTER EXAM- 2023

Subject: BASICS OF MICROBIOLOGY

Time: Three Hours

Full Marks: 100

Use Separate Answer Scripts for Part I and Part II

Part I (Marks-50)

Answer any **five** of the following:

5x10=50

1. How bacterial growth is estimated quantitatively on the basis of cell count– explain any one method. Describe any one method of bacterial culture maintenance. 6+4=10
2. How bacteria are classified on the basis of their temperature requirement? What is the difference between chemostat and turbidostat? 5+5=10
3. i. What is the difference between
 - a) Simple and complex media
 - b) Selective and differential media
- ii. What is hyphae? With diagram differentiate between the types of hyphae. (2.5+2.5)+1+4=10
4. Explain the structures attached outside the cell wall of bacteria. Also mention their function. 10
5. What is endospore? Name two endospore former bacteria. What is the function of capsule and flagella in the structure of bacteria? 2+2+6=10
6. Explain two physical and two chemical methods of isolation of pure culture. 5+5=10
7. Write a short note on vegetative and non vegetative reproduction methods of fungi. 10

[Turn over

B.E (FTBE) 2ND YEAR-1ST SEMESTER 2023**Basics of Microbiology**

Time: 3hours

Full Marks: 50

Part II

Answer any five questions from the following: 5x10

1. What is dye? Explain with an example. What is meant by chromogen? What is simple staining? 2+4+2+2
2. Define D value, F value and Thermal death time. How does composition of cell wall affect gram staining 4.5+5.5
3. What is sterilization? Explain Arnold sterilizer. How does dry heat act on microorganisms? 2+5+3
4. What is nitrogen fixation? Give one example each of Non symbiotic microorganism and Symbiotic microorganism. Explain Symbiotic nitrogen fixation. 2+2+6
5. Define with example light microscope and electron microscope. What is the difference between simple microscope and compound microscope? Write the full form of SEM and TEM. What is resolution? 2+2+2+2+2
6. Comment on disinfectant, germicide and bactericide. Classify disinfectants on the basis of mechanism of action. 1.5x3+5.5
7. Write short notes on (any two) : 2x5
 - a) Phenol coefficient method
 - b) Autoclave
 - c) Pasteurization