

B.E. FTBE 1ST YEAR 2ND SEMESTER EXAMINATION- 2017

MICROBIOLOGY- I

Time: 3hrs

Full Marks: 100

Use Separate Answer Script for each Part

(50 marks for each part)

PART- I (50 Marks)

Answer question 1 and any two from the rest

1. A) Define: Decimal reduction time, F value, Disinfection, Fungicide. 8
- B) Distinguish between: 3
- i) Pasteurization and sterilization
- ii) Bactericide and Germicide.
- C) How microorganisms are examined by microscope in living condition?
When microorganisms are examined in living condition? 3.5+3.5
- D) What method of sterilization would be appropriate for each of the following:
Test tubes, inoculation needle culture media and milk? 2
2. Comment on: 3×5
- A) Characteristics of Ideal antimicrobial chemical agent.
- B) Symbiotic nitrogen fixation
- C) Evaluation of antimicrobial agent by phenol coefficient method.
3. Why microorganisms are stained? Explain Gram staining technique. 2+4+4+5
- State the differences between Gm+ve and Gm-ve bacteria. How do
Protoplasmic pH and composition of cell wall affect Gram staining?

[Turn over

4. Write short notes on (any 3):

3x5

A) Cl_2 and Cl_2 compounds as disinfectant

B) Acid fast staining

C) Sterilization by filtration

D) Plasmolysis

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING FIRST YEAR SECOND SEMESTER – 2017

Subject: MICROBIOLOGY- I

Time: Three Hours

Full Marks: 100

Use Separate Answer Scripts for Part I and Part II

Part II (Marks-50)

Question No.1 is Compulsory and answer any three questions from rest

1.

i. Write the difference between

a) Autotroph & Heterotroph

b) Simple and Complex media

ii. For a bacterial culture the initial number of microorganism is 100. Find the number of microorganism after 5hr if the organism has a generation time of 30 min. (1.5+1.5)+2=5

2. What is Selective and Differential Media? How microorganisms are classified on the basis of the following:

a) Temperature requirement

b) Gaseous requirement (2.5+2.5)+(5+5)=15

3. How quantitatively bacterial growth is measured? What are the techniques of maintenance and preservation of microbial cultures? (7.5+7.5)=15

4. Describe the morphological features of Fungi. What do you mean by pure culture? What are the methods of isolating pure cultures? (6+1+8)=15

5. What is Peptone, Beef Extract, Yeast Extract and Agar? Mention their function in medium. What is the difference between Pour plate and Spread plate technique? (2.5x4)+5=15

6. Write short notes on : (7.5+7.5)=15

i. Reproduction of Fungi

ii. Lytic and Lysogenic cycle of virus