

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING SECOND YEAR SECOND SEMESTER – 2019

MICROBIOLOGY- II

Time: Three Hours

Full Marks: 100

Use Separate Answer scripts for each part

Different parts of the same question should be answered together

Part-I

(Full Marks-50)

1. Answer any one from (a) and (b):

a) Explain the following:

2×5

i) Effect of moisture content of food on growth of microorganism.

ii) Antimicrobial constituents of food.

b) i) State with example Intrinsic factor, extrinsic factor and processing factor.

ii) Explain synergism with example.

6+4

2. Answer any one from (a) and (b):

a) State the objectives of microbiological testing of food. Explain SPC method for determination of total viable cells in a sample.

3+7

b) State the causes of spoilage of food. Classify foods on ease of spoilage. Give one example each of halophilic bacteria, xerophilic mold, Osmophilic yeast. 3+4+3

3. Answer any one from (a) and (b).

a) What are the sources of air pollution? Explain sediment method and slit sampler method for bacteriological examination of air.

5+5

b) Discuss about determination of microorganisms in air by Anderson sampler. Comment aerosol, aeroallergen and aeroallergy

6.5+3.5

[Turn over

4. Answer any two from (a), (b) and (c)

a) Mention two water borne diseases with organisms responsible for it. What are coliform organisms? Give two examples. Explain ONPG and MUG test for detection of coliform in a sample. 2+3+5

b) Discuss IMViC test. What is the objective of this test? 10

c) Discuss multiple tube fermentation method for testing of coliform in water sample. 10

**B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING SECOND YEAR
SECOND SEMESTER – 2019**

Subject: MICROBIOLOGY- II

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

1. Answer any **two** of the following:

5+5=10

- a) Write the difference between Sterilization and Tyndallization
- b) Define decimal reduction time and z value
- c) What are the causes of food poisoning?

Answer any **two** of the following:

20+20=40

2. Describe how antimicrobial agents inhibit or kill microorganism. Differentiate the sterilization power of dry and moist heat. Describe the method of production of a legume based fermented food. What are the advantages of a fermented food?

5+5+6+4=20

3. What is cold sterilization? Write about the methods in which we get sterility by application of heat. What is HEPA? What is Whittaker's five kingdom system-explain.

3+10+2+5=20

4. Describe the reason and types of spoilage found in fruits or vegetables. How milk quality is determined by MBRT and Resazurin Test? Explain the method of the determination of efficiency of pasteurization used in Dairy Industry?

7+7+6=20