

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING SECOND YEAR SECOND SEMESTER – 2018

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) State the causes of spoilage of food. How would you determine the total number of viable cells in a food sample 3+7
 - b) Classify foods on ease of spoilage. Explain about microbial examination of food by dye reduction technique 4+6

2. Explain with example: Intrinsic factor, Extrinsic factor, Implicit factor, processing factor. 2.5 x 4

3. Answer any one from (a) and (b).
 - a) Biological structure of food protects it from spoilage- Justify. Discuss the effect of moisture content of food on growth of microorganism. 4+6
 - b) Give one example each of halophilic bacteria, xerophilic mold, Osmophilic yeast, Psychrophilic and mesophilic organism.
Discuss about the antimicrobial constituents of food. 5+5

4. Answer any two from (a), (b) and (c)
 - a) Mention two water borne diseases indicating the microorganisms involved for these diseases. What are coliform organisms? Give two examples What is meant by selective media? (2+2) +(2+2)+2
 - b) How could you detect presence of coliform in a water sample? 10
 - c) Discuss about IMVIC Test 10

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Use Separate Answer Scripts for Part I and Part II

Part II (Marks-50)

1. Answer any **two** from (a), (b) and (c) 5+5=10
- a) Describe Whittaker's five kingdom system
 - b) Differentiate between D value and z value
 - c) Describe the process of fractional sterilization
2. Answer any **two** from (a), (b), (c) 20+20=40
- a) Describe how antimicrobial agents inhibit or kill microorganism. Differentiate the sterilization power of dry and moist heat. Describe the method of production of a cereal based fermented food. 5+5+10=20
 - b) Define food poisoning. What are the types and causes of food poisoning? Differentiate between bacterial infection and intoxication. Describe phosphatase test. 2+(3+5)+5+5= 20
 - c) Describe the reason and types of spoilage found in fruits or vegetables. Differentiate between slimy and colored milk spoilage. (7+8)+5=20