Ref. No. : Ex/FTBE/PC/B/T/222/2023

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

Subject: Food Microbiology **Time: 3 hr** **Full Marks : 100**

Part I (50)

Instructions: Use Separate Answer scripts for each Part

Answer any five questions:

1. Explain the Whittaker's five kingdom system of classification of living organisms. How bacteria are classified in to four different classes? 6+4=10 (CO1)

2. Write the characteristics of an ideal antimicrobial agent? What is Food poisoning? Give examples of any two biological food poisoning agents.

5+1+4=10 (CO2)

3. What is the difference between high and low risk food? How microorganism got access to food products? What is the difference between bacterial endo and exo toxin? Describe the different types of bacterial exotoxins?

2+5+1.5+1.5=10 (CO4)

4. Identify the causes of spoilage of a dairy product/fruit/vegetable product. Describe the type of microorganism grown on that particular product. 5+5 (CO3 and CO4)

5. How microorganism get access to food products? Explain the characteristics any two types of bacterial food poisoning. 5+5=10 (CO4)

6. Explain how bacterial characteristics of dairy products are accessed? Explain how adequacy of pasteurization is measured? 5+5=10 (CO5)

7. With a flowsheet describe a cereal based fermented food and its benefit. 10 (CO4)

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BE (FTBE) 2 ND YEAR 2 ND SEMESTER EXAMINATION 2023

FOOD MICROBIOLOGY

Time: 3hours **Part II** **Full Marks: 100**

(Marks 50)

Answer any five questions from the following: 5x10

1.Define with example: Extrinsic factors, Implicit factors, Psychrophilic organism, perishable foods. 4x2.5

2.Explain about the role of microorganisms in food. Mention the antimicrobial constituents present in clove, garlic, cinnamon and mustard. 6+4

3.What is meant by food spoilage? Explain about microbial spoilage of cheese. What are the chemical changes occurring due to microbial spoilage of food. 2+2.5+5.5

4.Give two examples of lactic acid bacteria. What is the objective of alkaline phosphatase test of pasteurized milk. Explain Methylene blue reduction test for determination of microbial content in milk. 2+3+5

5. What are fecal and non fecal coliform organisms? Give an example of water borne disease with organism responsible for it. Explain MUG test. 3+2+5

6. Explain about determination of microorganisms in air by Anderson sampler. Comment on any three sources of food contamination. 7+3

7.Write notes on: (any two) 2x5

a)Associative growth of microorganisms.

b) IMViC tests.

c) Biological structure of foods.