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DMI-ST. EUGENE UNIVERSITY

ZAMBIA

DEGREE EXAMINATION – JUNE 2024

Semester: III

357 FP 34 FOOD MICROBIOLOGY

Time: 3:00 Hours

Max. Marks: 100

Answer any FIVE Questions (5 x 20 = 100 Marks)

1. a) Explain the design and significance of Francesco Redi's experiment and discuss the contributions of Louis Pasteur's experiments to disproving spontaneous generation. (10 Marks)
- b) Define microbiology and explain two ways that microbiology is important in our daily lives. (5 Marks)
- c) Explain the four postulates of Koch. (5 Marks)
2. a) Elucidate environmental factors that affect microbial growth. (10 Marks)
- b) Describe the four main phases of a typical microbial growth curve and briefly explain what happens to the microbial population in each phase. (10 Marks)
3. a) Discuss the factors that influence microbial growth and strategies for preventing spoilage. (10 Marks)
- b) Describe two visual and two non-visual characteristics of spoiled food. (5 Marks)
- c) Identify two sources of contamination during food production and three sources of contamination that can occur at home. (5 Marks)
4. a) Explore the differences between sterilization and disinfection and their applications in various settings. (10 Marks)
- b) Discuss the principles of pasteurization, its benefits and limitations, and factors affecting its effectiveness. (10 Marks)
5. a) Briefly explain two reasons why cleanliness is essential in food handling and Describe one consequence of neglecting proper hygiene practices for facilities and equipment? (5 Marks)
- b) List and briefly explain three important aspects of facility maintenance for food hygiene and

Describe three essential steps involved in the proper sanitation of food processing equipment.

(5 Marks)

- c) Identify and briefly explain the roles of three different parties responsible for food hygiene at various stages of the food chain and explain why food hygiene is a shared responsibility, not solely the responsibility of one party? **(5 Marks)**
 - d) List and briefly explain three key actions that consumers can take to promote food hygiene at home and Describe two ways that collaboration between government agencies, food producers, and consumers can improve food safety. **(5 Marks)**
6. a) Describe two methods used to isolate pure cultures of microorganisms from a mixed sample and Explain the key steps involved in each method and Differentiate between the two methods you described. **(10 Marks)**
- b) Classify cell culture media based on consistency. **(5 Marks)**
 - c) Describe potential dangers associated with foodborne illnesses. **(5 Marks)**
7. a) Describe FIVE key characteristics that distinguish microorganisms from more complex organisms and Explain the significance of each characteristic for their survival and function. **(10 Marks)**
- b) Describe four ways Microbes are used in industries. **(10 Marks)**