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University of choice

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)
SCHOOL OF AGRICULTURE, VETERINARY SCIENCES AND TECHNOLOGY (SAVET)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS 2023/2024 ACADEMIC YEAR

MAIN EXAMS
OF
BACHELOR OF SCIENCE FOOD SCIENCE AND TECHNOLOGY

COURSE CODE: AFS 201

COURSE TITLE: FOOD MICROBIOLOGY AND TOXICOLOGY

DATE: 9TH APRIL 2024 **TIME: 3:00-5:00 PM**

INSTRUCTIONS TO CANDIDATES

This paper is divided into two sections, **A and B**. Answer ALL Questions in SECTION A and any Two in SECTION B

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over

SECTION A (40 MKS)

1. Define microbiology (2 mks)
2. Name 3 characteristics of microorganisms (3 mks)
3. What is the difference between a species and a strain of bacteria? (2 mks)
4. Define the following terms
   i) Bacteriophage (2 mks)
   ii) Medium (2 mks)
   iii) Culture (2 mks)
5. Describe the three forms in which media is prepared and the application of each (6 mks)
6. Briefly describe 5 economic importance of microorganisms in the food industry. (10 mks)
7. Name 2 areas where the preserved microbial cultures is applied. (2 mks)
8. Answer the following questions:
   i. What is bacterial staining? (2 mks)
   ii. Briefly describe the gram stain technique of staining (3 mks)
9. Explain the following principles of food preservation with an example of each:
   i. The inhibition principle (2 mks)
   ii. The killing principle (2 mks)

SECTION B (30 mks)

10. With the aid of a graph, explain the microbial growth stages (15 mks)
11. Discuss in detail the methods employed when isolating pure bacterial cultures (15 mks)
12. Discuss the various food borne illnesses, their symptoms, causes and the control measures (15 mks)
13. Discuss the modern methods of food preservation (15 mks)