



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR  
(MAIN EXAMINATIONS)**

**SECOND YEAR SECOND SEMESTER EXAMINATIONS  
FOR THE DEGREE OF:**

**BACHELOR OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY**

**COURSE CODE: AFS 202**

**COURSE TITLE: FOOD FERMENTATIONS AND  
BIOTECHNOLOGY**

**Date: 21<sup>st</sup> April 2022**

**TIME: 8.00-10.00 AM**

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**INSTRUCTIONS TO CANDIDATES**

**SECTION A:** Answer **ALL** Questions [30 Marks]

**SECTION B:** Answer **ANY TWO** Questions [40 Marks]

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ➡

**SECTION A: SHORT ANSWER QUESTIONS [30 MARKS]**

1. Outline five(5) health benefits of fermented foods [5 Marks]
2. Explain the role of biotechnology in food supply [5 Marks]
3. With relevant examples, differentiate between batch and fed-batch processes in food fermentations [5 Marks]
4. Highlight five(5) factors to consider for bioreactor design in food fermentations [5 Marks]
5. State the ethical issues associated with genetically modified foods [5 Marks]
6. Briefly describe the downstream process in the fermentation of a food product [5 Marks]

**SECTION B: LONG ANSWER QUESTIONS [40 MARKS]**

7. Discuss the production of single cell proteins (SCP) in continuous cultures [20 Marks]
8. Explain in detail the applications of immobilized enzymes in food production [20 Marks]
9. Discuss the socio-cultural factors that have hindered the acceptance of genetically modified foods [20 Marks]