



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: AFT 202

COURSE TITLE: FATS AND OILS TECHNOLOGY

DATE: 25TH APRIL 2024

TIME: 8-10 AM

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:

1. Differentiate between fats and oils with regards to their sources and structure (4 mks)
2. With the aid of a diagram, explain the basic structure of lipid (3 mks)
3. With the aid of a diagram, distinguish the difference between trans fats and cis fats (4 mks)
4. Give 4 examples of each of the following:
 - i. Nuts (2 mks)
 - ii. Oil seeds (2 mks)
5. Explain how the following qualities of fats and oils play a role in the foods that we eat:
 - i. Appearance (2 mks)
 - ii. Melting point (2 mks)
 - iii. Emulsions (2 mks)
 - iv. Flavour (2 mks)
 - v. Heat transfer (2 mks)
6. Explain how storage pests affect the quality oilseeds and nuts (3 mks)
7. Explain the importance of the following preliminary steps in oil processing.
 - i) Cleaning (2 mks)
 - ii) Dehulling (2 mks)
 - iii) Delinting (2 mks)
 - iv) Cooking (2 mks)
8. Explain the following terms and their importance in the quality evaluation of fats and oils.
 - Iodine Value (2 mks)
 - Peroxide value (2 mks)

SECTION B (30 mks)

9. With the aid of a flow diagram, explain the basic steps involved in solvent extraction method of oil processing (15 mks)
10. Discuss the application of the biproducts of oil processing in the food industry. (15 mks)
11. i) With aid of a series of equations explain lipid oxidation (10 mks)
ii) Give two examples of antioxidants and explain the role they play in counteracting the lipid oxidation process. (5 mks)
12. i) Explain why it is important to preserve nuts and oilseeds (5 mks)
ii) With the aid of a diagram explain the radio frequency heating and its advantages as a method of preserving nuts and oilseeds (10 mks)