



MURANG'A UNIVERSITY OF TECHNOLOGY
SCHOOL OF HOSPITALITY AND TOURISM MANAGEMENT

DEPARTMENT OF HOSPITALITY, TRAVEL AND TOURS

TVET EXAMINATION

2023/2024 ACADEMIC YEAR

FIRST YEAR SECOND SEMESTER EXAMINATION FOR DIPLOMA

FOP-FT-CR-10-6- FOOD CHEMISRTY

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer question one and any other two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (40 MARKS)

- a. Define the following terms:
- i. Fats
 - ii. Waxes
- b. Distinguish between saturated and unsaturated fatty acids giving an example in each case. (4 marks)
- c. Using a formula explain the formation of a triglyceride. (4 marks)
- d. Explain the following properties of fats:
- i. Acid value. (2 marks)
 - ii. Peroxide value. (2 marks)
- e. State four nutritional values of fats.
- f. State four properties of emulsifiers. (4 marks)
- g. Describe the following:
- i. Flash point. (2 marks)
 - ii. Smoke point. (2 marks)
- h. Explain the term lipolysis in lipids. (4 marks)
- i. State four properties fatty acids have in common. (4 marks)
- j. Distinguish between a dispersed and dispersing phase of an emulsion stating an example for each. (4 marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

- a. Outline the procedure for measurement of melting point of a fat. (10 marks)
- b. Describe five functions of fats in the food industry. (10 marks)

QUESTION THREE (20 MARKS)

- a. Define the term lipid autoxidation. (2 marks)
- b. State four reasons why lipid autoxidation is not desirable in food product. (4 marks)
- c. Describe four steps involved in lipid autoxidation. (14 marks)

QUESTION FOUR (20 MARKS)

- a. Discuss 5 major components of fats and oils. (10 marks)
- b. Describe the hydrogenation process in fats. (6 marks)
- c. State two conditions necessary for hydrogenation. (4 marks)