



# TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE AND APPLIED SCIENCE

## UNIVERSITY EXAMINATION FOR:

BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND QUALITY ASSURANCE

AFS 4310: Edible Fats and oils technology.

## END OF SEMESTER EXAMINATION

**SERIES:** APRIL/2016

**TIME:** 2 HOURS

**DATE:** MAY/2016

### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of five questions. Attempt Question One and any other TWO

**Do not write on the question paper.**

---

### Question ONE

- Giving two examples in each case, differentiate between simple lipids and compound lipids. (4mks)
- Explain how degree of unsaturation of fatty acid affects the physical characteristics of fats and oil. (4mks)
- Describe the process of direct solvent extraction of oil seeds. (4mks)
- Differentiate between chemical refining and Physical refining. (4mks)
- State four advantages of dead-end converter over the recirculating system converter used in hydrogenation. (4mks)
- Describe the principle of dry crystal fractionation. (4mks)
- Explain how product composition influences plasticity and consistency of a plastic shortening. (6mks)

### Question TWO

Discuss five processing variables considered to affect winterization. (20mks)

**Question THREE.**

- a) Describe solvent fractionation of fats and oils. (10mks)
- b) Explain two type of isomerism among unsaturated fatty acids. (10mks)

**Question FOUR**

With the aid of a process flow diagram, describe shortening plasticization process. (20mks)

**Question FIVE.**

- a) State three purposes of the bleaching operation after hydrogenation. (3mks)
- b) Explain enzyme interesterification of fats and oils. (7mks)
- c) Describe the following hydrogenated basestocks;
  - i) Brush hydrogenated basestocks (5mks)
  - ii) Partially hydrogenated basestocks (5mks)