



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

- a) Giving two examples in each case, differentiate between simple lipids and compound lipids. (4mks)
- b) Explain how degree of unsaturation of fatty acid affects the physical characteristics of fats and oil. (4mks)
- c) Describe the process of direct solvent extraction of oil seeds. (4mks)
- d) Differentiate between chemical refining and Physical refining. (4mks)
- e) State four advantages of dead-end converter over the recylulating system converter used in hydrogenation. (4mks)
- f) Describe the principle of dry crystal fractionation. (4mks)
- g) 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)