



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 saturated and unsaturated fatty acids. (4mks)
- Explain how the length of a carbon chain affects the physical characteristics fats and oils. (4mks)
- Explain polymorphisms and how it influences the quality a given fat. (6mks)
- Differentiate between prepress solvent extraction and direct solvent extraction. (2mks)
- State four advantages of enzymatic degumming. (4mks)
- Describe autoxidation reaction of fats and oils. (8mks)
- State the two main reasons for oil hydrogenation. (2mks)

Question TWO

Discuss how the following factors influence plasticity and consistency of a plastic shortening;

- a) Product composition (5mks)
- b) Crystal size (5mks)
- c) Super cooling (5mks)
- d) Mechanical working (5mks)

Question THREE

- a) Describe solvent winterization process of seed oils. (10mks)
- b) Describe with the aid of a process flow diagram, dead-end batch hydrogenation process. (10mks)

Question FOUR

Describe the following chemical interesterification of oil of oil;

- a) Random batch chemical interesterification(10mks)
- b) Directed continuous chemical interesterification (10mks)

Question FIVE

- a) State three conditions essential for plasticity of edible fats and oils. (3mks)
- b) Describe detergent fractionation as carried out in oil industry. (7mks)
- c) Explain five factors that affect the physical characteristics of fats and oils. (10mks)