



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

**THIRD YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF
BACHELOR OF SCIENCE IN FOOD SECURITY - 2013/2014 ACADEMIC YEAR**

APT 3316: POST HARVEST TECHNOLOGY

Instructions:

1. This paper consists of **TWO** sections, **A** and **B**.
2. Answer **ALL** questions from section A and any **TWO** from section B.
3. Write all answers in the booklet provided.

SECTION A [30 MARKS]

Answer ALL questions.

1. (a) Outline the internal and external factors that influence respiration of fresh produce. [6 marks]
- (b) Briefly explain how endogenous ethylene would influence respiration in the following commodities:
 - i) Bananas [2marks]
 - ii) Oranges [2marks]
2. (a) What is chilling injury in fruits and vegetables and why is it difficult to control? [5marks]
- (b) Explain the principle of food preservation.[3marks]
- (c) Outline four challenges of value addition in Arid and Semi – Arid Lands (ASALs). [2marks]
3. (a) Outline the procedure in drying of leafy vegetables.[5marks]
- (b) Explain aflatoxin contamination and its impact on human health. [5marks]

SECTION B [40 MARKS]

Answer ANY TWO questions.

4. The words **Quality** and **Food Safety** have often been confused and there has been no clear distinction between the two. Define each and explain the two concepts according to the Food and Agriculture Organization (FAO). [20marks]
5. (a) What is respiration climacteric? How is the pattern influenced by ethylene and temperature? [8marks]
- (b) Briefly discuss each of the following precooling methods for fresh produce.
 - i) Hydrocooling. [6marks]
 - ii) Vacuum cooling. [6marks]
6. (a) Discuss the following in food preservation:
 - i) Freezing. [5marks]
 - ii) Fermentation. [5marks]
 - iii) Dehydration [5marks]
- (b) Explain why food processing is important to farmers. [5marks]