



# MACHAKOS UNIVERSITY

University Examinations for 2016/2017 Academic Year

SCHOOL OF AGRICULTURE AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF AGRICULTURAL EDUCATION AND EXTENSION

**FOURTH YEAR, FIRST SEMESTER EXAMINATION FOR BACHELOR OF  
AGRICULTURAL EDUCATION AND EXTENSION**

**KST 401: POST HARVEST TECHNOLOGY**

**Date:**

**Time:**

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**EXAM PAPER**

**Instructions**

**Instructions: Answer ALL questions in section A and ANY TWO questions in section B**

**Section A: 30 MARKS**

**Question 1:**

- (a) Explain SIX reasons of importance of food security in Kenya (**6 marks**)
- (b) Describe and explain FIVE pre-harvest factors which lead to food products spoilage (**5 marks**)
- (c) Explain importance of post-harvest physiology of agriculture products in packaging for the market (**7 marks**)
- (d) Explain THREE causes of post-harvest loss of most crop products (**6 marks**)
- (e) Explain the meaning and importance of senescence delaying techniques in crop product post-handling of export products (**6 marks**)

**SECTION B: 40 MARKS**

**Question 2:**

- (a) Explain briefly SIX non-chemical methods of controlling post-harvest spoilage in crop products (**12 marks**).
  
- (b) Describe FOUR reasons for cleaning and sorting of newly harvested produce (**8 marks**)

**Question 3:**

- (a) State and explain FIVE procedures of preparing fruit and vegetable produce for market (**10 marks**)
  
- (b) Explain FIVE grain products and indicate their equilibrium moisture content (%) levels required to deter spoilage (**10 marks**)

**Question 4:**

- (a) Explain physiological disorder prevention and management on crop produce (**10 marks**).
  
- (b) Explain the THREE major causes of spoilage of banana fruit (**3 marks**)
- (c) Explain SEVEN techniques of preventing spoilage of onion for export market (**7 marks**)

**Question 5:**

- (a) With the help of a graph (s) distinguish between climacteric and non-climacteric fruits (**6 marks**)
  
- (b) For each of the SEVEN crops indicated in the table below state the product and the post-harvest handling technique farmers carry out before delivery of produce to market (a) (**14 marks**)

| <b>Crop type</b> | <b>product</b> | <b>Post-harvest handling before marketing</b> |
|------------------|----------------|---|
| 1. Sisal         |                |   |
| 2. Orange        |                |   |
| 3. Ground nuts   |                |   |
| 4. Tea           |                |   |
| 5. Sorghum       |                |   |
| 6. Mango         |                |   |
| 7. Cabbage       |                |   |