



**TECHNICAL UNIVERSITY OF MOMBASA**

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

**UNIVERSITY EXAMINATION FOR:**

BACHELOR OF SCIENCE IN FOOD TECHNOLOGY AND QUALITY ASSURANCE YEAR 4

SEMESTER 1

AFS 4403 : VEGETABLES, FRUITS AND ROOT CROP TECHNOLOGY PAPER 2

SPECIAL/ SUPPLEMENTARY EXAMINATIONS

**SERIES:** SEPTEMBER 2018

**TIME:** 2 HOURS

**DATE:** Pick Date Sep 2018

**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 (Compulsory) and any other TWO questions**

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

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**Question ONE**

- a) Explain the primary classification of fruits and vegetables (**6 marks**)
- b) i. Explain **TWO** reasons why fruits are classified as perishable foods (**4 marks**)
- ii. Discuss the effects of oxygen on processing of fruit juices (**2 marks**)
- c) Explain the significance of the following steps in canned fruits and vegetables;
  - i. Exhausting (**3 marks**)
  - ii. Cooling (**2 marks**)
- d) Compare the quality parameters between mango pulp and orange juice (**3 marks**)
- e) ii. Explain **FOUR** objectives of blanching fruits and vegetables (**4 marks**)
- f) Discuss the mechanism of gel formation in jam manufacture (**6 marks**)

**Question TWO**

- a) Discuss the primary causes of post- harvest spoilage of fruits and vegetables **(10 marks)**
- b) Discuss the present scenario of fruits and vegetables processing industries in Kenya **(10 marks)**

### **Question THREE**

- i. Discuss the changes occurring during maturation and ripening of fruits **(10 marks)**
- ii. Discuss the economic importance of fruits using mango as a reference **(10 marks)**

### **Question FOUR**

- a) Discuss the factors that determine the final quality of dried fruits and vegetables **(12 marks)**
- b) Explain the term preserve as applied to fruit processing **(2 marks)**
- c) Explain why sucrose does not crystalize during jam manufacture despite the high concentration used **(3 marks)**
- d) Explain the term chilling injury giving an example of produce susceptible to the same **(3 marks)**

### **Question FIVE**

- i. Discuss the general processing of sauerkraut **(10 marks)**
- ii. Discuss the effects of processing on the nutrient value of root tubers **(10 marks)**