



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL OF AGRICULTURAL AND FOOD SCIENCES**  
**UNIVERSITY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE**  
**IN FOOD SECURITY**  
**THIRD YEAR SECOND SEMESTER 2013/2014 ACADEMIC YEAR**

**REGULAR**

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**COURSE CODE: APT 3322**

**COURSE TITLE: Fruits and Vegetable Production**

**EXAM VENUE: LR 7**

**STREAM: BSc (Food Security)**

**DATE: 8/12/14**

**EXAM SESSION: 9.00 – 11.00 AM**

**TIME: 2.00 HOURS**

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**Instructions:**

- 1. Answer ALL question in Section A (compulsory) and ANY TWO questions in Section B.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**SECTION A [30 MARKS]**

**Question 1**

- (a) Differentiate between indigenous and exotic vegetables. Give two examples in each case. [2 marks]
- (b) Differentiate between mixed farming and multiple cropping systems of crop production. [2 marks]
- (c) Explain any three challenges facing the vegetables and fruits subsectors in Kenya. [3 marks]
- (d) Explain how concerns over food safety has influenced the marketing of fresh fruits and vegetables. [3 marks]
- (e) Describe how World War II stimulated the development of horticultural production and processing in Kenya. [4 marks]
- (f) Define the following two terms; a) vegetable b) fruit. [4 marks]
- (g) Discuss the concepts of chilling injury and Heat stress and show how they influence fruits and vegetables growth and development. [4 marks]
- (h) State any two differences between photoperiodism and Photomorphogenesis. [4 marks]
- (i) Show how vegetable and fruits can be classified based on temperature and photoperiod. [4 marks]

**SECTION B [40 MARKS]**

**Question 2**

- a) Discuss the role of independence to the horticultural sector in Kenya. [10 marks]
- b) Describe how vegetables are classified according to part consumed and at least give one example of each. [5 marks]
- c) Discuss the relevance of vegetables to human nutrition and diet. [5 marks]

**Question 3**

- a) JOOUST food security students conducted a market survey and identified the following vegetables. Complete the table by filling in the correct information. [10 marks]

Family	Botanical Name	Common Name
	<i>Amaranthus dubius</i>	Amaranth
Cucurbitaceae		Pumpkin Cucumber
	<i>Abelmoschus esculentus (L.) Moench</i>	
		Irish potato
Tiliaceae		Jews mallow
		Cabbage Radish

- b) Explain the concept of “Swynnerton Plan” developed in 1954 highlighting its contribution to development of small holder vegetables producers in Kenya. [10 marks]

**Question 4**

- Give an account of contribution of vegetables and fruit subsectors to Gross Domestic Product (GDP) and global food security. [20 marks]