

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE  
IN HORTICULTURE**

**HORT 855: POSTHARVEST TECHNOLOGY OF HORTICULTURAL CROPS**

**STREAMS: MSC. HORT**

**TIME: 3 HOURS**

**DAY/DATE: TUESDAY 09/04/2024**

**11.30 A.M. – 2.30 A.M.**

**INSTRUCTIONS**

- **Answer ALL questions in section I and any other two in section II**
- **Do not write on the question paper**

**SECTION I (20 marks)**

1. a) Many pigment compositional changes take place even after harvest in many horticultural commodities. Elaborate (5 marks)  
b) As a postharvest expert what practices do you think can be adopted in a packhouse to inhibit synthesis and also the action of ethylene. (5 marks)
2. a) Ethylene affects many phases of plant growth and development. Equate the undesirable and desirable effects (4 marks)  
b) Using suitable examples illustrate the internal methods of determination of Maturity Indices of horticultural produce (6 marks)

**SECTION II (40 MARKS)**

3. a) Many fruits and vegetables are susceptible to chilling injury when placed at temperatures between 0 and 10°C. Using suitable examples showcase the symptoms of chilling injury. (10 marks)  
b) As a postharvest expert, do you think there are pre harvest factors affecting quality of horticultural produce. (10 marks)

4. a) Ethylene is released by plant tissues naturally and plays a major role in ripening and senescence. Illustrate the ethylene biosynthesis clearly showing the rate limiting steps. (12 marks)
- b) Detail on the new innovation that are being used in grading systems to maintain quantity and quality of the horticultural produce (8 marks)
5. a) Climacteric are different from non-climacteric fruits. Substantiate. (12 marks)
- b) Explicate on the essence of Tharaka Nithi County government investing in post-harvest technology. (8 marks)
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