

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN HORTICULTURE

HORT 451: POST HARVEST PHYSIOLOGY AND TECHNOLOGY

STREAMS: Y4S2

TIME: 2 HOURS

DAY/DATE : WEDNESDAY 22 /09/ 2021

11.30 AM – 1.30 PM

INSTRUCTIONS TO CANDIDATES:

- The paper contains section A &B
- Answer all questions in Section A and any two from Section B
- Marks for each question are indicated in parentheses ()
- Total Marks =70

SECTION A (30 MARKS)

1. Which postharvest practices would you recommend to achieve the following goals:

- Minimize loss of sugar in sweet corn. [2 Marks]
- Protect cut carnation flowers from the effects of exposure to ethylene. [2 Marks]
- Prevent greening of potato tubers. [2 Marks]

2. (a) Leafy and succulent vegetables are more perishable than mature fruit vegetables and bulbs or root tubers. Describe the physiological

processes that contribute to the high perishability.

[5 Marks]

- (b) Briefly explain why immature fruits are highly susceptible to perishability compared to mature ones.

[3 Marks]

3. Describe the physiological factors that influence deterioration of horticultural commodities.

[7 Marks]

4. (a) Describe the components of compositional change in fruits or vegetables during post-harvest.

[3 Marks]

- (b) Briefly explain the importance of waxing of some fruits during post harvest handling.

[6 Marks]

SECTION B (40 MARKS) ANSWER ANY TWO QUESTIONS

5. Temperature control is the number one tool that the postharvest horticulturist has at his disposal to maintain the quality of fresh flowers, fruits and vegetables. Briefly describe how temperature management relates to the following:

a). Postharvest pathogens. [5 Marks]

b). Physiological disorders [5 Marks]

c). Water loss [5 Marks]

d). Respiration [5 Marks]

6. a) Discuss all the packhouse operations applicable in postharvest handling.

[10 Marks]

- b) Describe the main considerations that should be incorporated in the transportation method.

[10 Marks]

7. a) Describe five advantages and five disadvantages of modified atmosphere

storage of horticultural commodities.
[10 Marks]

b) Describe any four techniques of modified atmosphere storage. [10 Marks]

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