

THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

SECOND SEMESTER EXAMINATION

DEPARTMENT OF AGRICULTURE – FOURTH YEAR DEGREE

AG410 – POSTHARVEST TECHNOLOGY

FRIDAY 30TH OCTOBER, 2020 (08.20 AM)

TIME ALLOWED: 3 HOURS

INFORMATION FOR CANDIDATES:

1. You have 10 minutes to read the paper. You must not begin writing during this time.
2. Answer **ALL FIVE** questions in numerical order.
3. Answers must be written in the book provided. No other written materials will be required.
4. Rules, calculators and correction fluids are required in the examination room. **Notes, textbooks and mobile phones are not allowed.**
5. Write your name and student number clearly on the front page of your answer book and examination attendance slip. **DO IT NOW.**
6. Each question answered carry **EQUAL** marks.
7. **Total marks = 100**

Question 1

(10x2=20 marks)

Define the following:

- | | |
|-----------------------------|----------------------|
| (i) Postharvest | (vi) Loss assessment |
| (ii) Postharvest technology | (vii) Curing |
| (iii) Postharvest handling | (viii) Pith curing |
| (iv) Postharvest loss | (ix) Disinfection |
| (v) Quality loss | (x) Sanitation |

Question 2

(5x4=20 marks)

Write clearly **FOUR** important points each on the following postharvest handling techniques to show their importance on fresh produce quality management:

- | | |
|---------------|--------------------|
| (i) Cleaning | (iv) Packing |
| (ii) Sorting | (v) Transportation |
| (iii) Grading | |

Question 3

(5x4=20 marks)

List **FIVE** important steps in crop production and explain how each step is undertaken to reduce postharvest losses.

Question 4

(20 marks)

- (i) List **FIVE** major postharvest losses at different steps during the marketing chain of fresh produce and evaluate at least two factors responsible for the losses at each step (**5x2=10 marks**).
- (ii) Demonstrate how the following biological factors lead to deterioration of fresh produce quality if not managed properly (**5x2= 10 marks**):
 - (a) Respiration
 - (b) Growth and development
 - (c) Compositional change
 - (d) Physiological break down
 - (e) Ethylene production.

Question 5

(20 marks)

- (i) Show how the **FIVE** different low cost methods of field curing can be used to cure root and tuber crops to minimize postharvest losses (**5x2=10 marks**).
- (ii) Point out how these low cost technologies can be used to prevent postharvest losses: (a) Solar driers (b) packing and shade (c) Distribution and display (d) Mound curing (e) Solar cookers (**5x2=10 marks**).