



FIJI NATIONAL UNIVERSITY
College of Agriculture, Fisheries & Forestry
School of Agricultural Sciences and Forestry
Department of Crop Production
Bachelor of Education (Secondary) (Agricultural Science)
Final Examination
Trimester 1 - 2019

HOR701 Post-Harvest Management and Value addition of Fruit and Vegetables

Writing Time: 3:00 hours

Reading Time: extra 10 minutes allowed at the beginning of the exam

Total Marks: 100

INSTRUCTIONS:

1. This paper consists of Four (4) pages.
2. Please check to see that all your paper is complete.
3. Answer all questions in the Answer Booklet only.
4. No written or printed material and mobile phones are allowed in the examination hall.
5. Marks allocated for each section appears at the side of each question so allocate your time accordingly.
6. This paper is divided into three section.

Section A: Multiple Choice

(10 Marks)

Section B: Short Answer

(30 Marks)

Section C: Long Answer

(60 Marks)

Section A: Multiple Choice

(10 Marks)

- A. There are ten multiple-choice questions in this part.
B. All are compulsory.
C. Each question is worth 1 mark.
D. For each question, circle the letter of the **best** answer on the grid provided in the Answer Booklet.

1. A method to kill surviving microorganisms by radiation is known as:
 - A. Asepsis
 - B. Filtration
 - C. Canning
 - D. Irradiation

2. Estimated level of post-harvest losses in Thailand is:
 - A. 20-50%
 - B. 17-35%
 - C. 40%
 - D. 20-50%

3. Which of the following is not an application of heat for preservation by drying?
 - A. Sun drying
 - B. Freeze drying
 - C. Use of sugar
 - D. Vacuum drying

4. Anthocyanin is main colouring compound in:
 - A. Cucumber
 - B. Tomato
 - C. Brinjal
 - D. Watermelon

5. Salt in Concentration of _____ or above act as preservative.
 - A. 15%
 - B. 10%
 - C. 8%
 - D. 6%

6. Which of the following is not main objective of storage?
 - A. Slow biological activity
 - B. Increase biological activity
 - C. Slow growth of microorganisms
 - D. Reduce transpiration

7. Which of the following fruit is not suitable for canning.
 - A. Pineapple
 - B. Guava
 - C. Mango
 - D. Lemon

8. Which of the following is non- climacteric fruit?
 - A. Mango
 - B. Grape
 - C. Banana
 - D. Lemon

9. Which of the following acts as a thickening agent in preparation of jelly?
 - A. Calcium pectate
 - B. Fatty acid
 - C. Pectin
 - D. Carbohydrates

10. Netting is used to judge the maturity of :
 - A. Mango
 - B. Muskmelon
 - C. Citrus
 - D. Grapes

Section B: Short answer

(30 Marks)

- **There are 6 questions in this section.**
 - **Answer only Five (5) questions.**
 - **Each question is worth 06 marks.**
 - **Answer each question in approximately 150 words in the answer booklet provided.**
1. Analyse the advantage of fruit and vegetable preservation.
 2. Utilise your knowledge to describe zero energy cool chambers and demonstrate by figures.
 3. Apply your knowledge to discuss advantages and disadvantages of mechanical harvesting.
 4. Apply your knowledge on use of vinegar in preservation of pickle.
 5. Compare between vacuum cooling and room cooling.
 6. Utilise your knowledge to differentiate between physiological maturity and horticultural maturity with suitable examples.

Section C: Long answers

(60 Marks)

- **There are 7 questions in this section.**
 - **Answer only five (5) questions.**
 - **Each question is worth 12 marks.**
 - **Answer each question in approximately 300 words in the Answer Booklet provided.**
1. Apply your knowledge to describe importance and scope of fruit and vegetable processing in Fiji.
 2. Utilize your knowledge to define Harvesting. Provide the important consideration to be taken, while preparing for harvesting.
 3. Apply your knowledge to define pre- cooling? Demonstrate in brief, different methods of precooling.
 4. Apply your knowledge to discuss pre-harvest factors responsible for deterioration of harvested fruit and vegetables.
 5. Utilize your knowledge to discuss the function, purpose and characters of cushioning materials in packaging.
 6. Provide benefits of storage and application of controlled/ modified atmosphere storage.
 7. Apply your knowledge on preparation of pickles and discuss various methods of preservations.

The End