UNAM
UNIVERSITY OF NAMIBIA

FACULTY	AGRICULTURE, ENGINEERING AND NATURAL SCIENCES		
SCHOOL	AGRICULTURE AND FISHERIES SCIENCES		
DEPARTMENT	FOOD SCIENCE AND SYSTEMS		
SUBJECT	FRUITS AND VEGETABLE TECHNOLOGY		
SUBJECT CODE	F3711SF		
DATE	JUNE 2025		
DURATION	3 HOURS	**MARKS**	100

Second Opportunity Examination

Examiner: **Dr .P. Hiwilepo- van-Hal and Dr. W Embashu**

Internal Moderator: **Mr. S. Emvula**

This question paper consists of **three (3)** pages excluding this front page.

Instructions

- **Answer all five (5) questions**

QUESTION 1

a) Define what a vegetable is and give one (1) vegetable example of each part defined [16]

b) Give four (4) criteria which fruits are classified according [4]

QUESTION 2

a) How does pasteurization differ from sterilization in preserving fruits and vegetables, and what types of products are commonly pasteurized or sterilized? **[10]**

b) Give five (5) maturity indices and identify the instruments used to measure the content of each. **[5]**

c) How do staff hygiene practices impact the overall quality of fruit and vegetable products? **[6]**

d) What role does traceability play in the production of fruit and vegetable products, and why is it important? **[5]**

e) Write short note on the following:

i) Active MAP **[3]**

ii) Passive MAP **[3]**

QUESTION 3

a) Discuss five (5) methods used in fruit and vegetable processing to prevent enzymatic browning. **[10]**

b) Explain the role of canning in preserving fruits and vegetables. What are the advantages and limitations of this method? **[10]**

QUESTION 4

a) What are the key differences between freezing and drying as methods for preserving fruits and vegetables, and what are the advantages of each? **[10]**

b) Why is it important to control storage temperature and humidity when preserving fruits and vegetables? **[10]**

QUESTION 5

Choose the most appropriate answer from the list given **[8]**

i) Why is sanitation and cleanliness crucial in fruit and vegetable processing facilities?

A) It helps reduce production costs.

B) It ensures the safety and quality of the products by preventing contamination.

C) It improves the flavor of processed products.

D) It helps in reducing packaging material costs.

ii) What is the role of staff hygiene and training in Good Manufacturing Practices?

A) To increase worker productivity.

B) To ensure workers follow personal hygiene protocols to prevent contamination.

C) To enhance the flavor and color of the products.

D) To speed up the production process.

iii) What is traceability in the context of fruit and vegetable processing?

A) The ability to trace the origin and production details of raw materials and

finished products.
B) The process of cleaning and sanitizing equipment.
C) The inspection of raw materials for quality.
D) The technique used to freeze fruits and vegetables for long-term storage.

iv) What is the primary purpose of the Hazard Analysis Critical Control Points (HACCP) system in food safety?
A) To identify the target market for products.
B) To identify and control hazards that could compromise food safety during production.
C) To assess the marketing strategy of processed products.
D) To track the safety performance of the processing plant.

v) In HACCP, what is a "Critical Control Point" (CCP)?
A) A point in the production process where hazards can be evaluated.
B) A point where hazards can be controlled to prevent contamination or unsafe conditions.
C) A point where products are packaged for shipment.
D) A point where the product undergoes sensory evaluation.

vi) Why is monitoring important in HACCP?
A) It helps ensure critical limits are being maintained at key control points.
B) It speeds up the production process.
C) It increases the shelf life of products.
D) It allows for random product testing.

vii) What is the purpose of verification in HACCP?
A) To ensure that monitoring records are accurate and equipment is properly calibrated.
B) To increase production rates.
C) To improve the packaging materials.
D) To check the final flavor of the product.

viii) What does the Codex Alimentarius provide for fruit and vegetable processing?
A) Guidelines for effective marketing strategies.
B) International standards, guidelines, and codes of practice for food safety and quality.
C) Financial regulations for processing companies.
D) Packaging requirements for processed food products.

END OF THE MARKING SCHEME!