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		
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DURATION	3 HOURS	**MARKS**	100

First Opportunity Examination

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

Internal Moderator: Mr. S. Emvula

This question paper consists of **four (4)** pages excluding this front page.

Instructions

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

QUESTION 1

Choose the most appropriate answer from the list given **[15]**

i. What is the starting ingredient of making cider
   a) Coconut
   b) Pear
   c) Apple

ii. The enzyme_____ is used in making juice
   a) Phenolase
   b) Pectinase
   c) Phytase

iii. An based on morphological classification _____is an example of aggregate fruit

   a) Grapes
   b) Mango
   c) Strawberry

iv. Fruits and vegetables have a water content of 80-95% and this contributes to being highly perishable
   a) False
   b) True

v. Bromelain is an enzyme used in meat tenderliser and it is from which fruits?
   a) Figs
   b) Pineapple
   c) Papaya

vi. What is the difference between fruit juice and fruit juice concentrate?
   a) Juice concentrate has more water content than juice.
   b) Juice concentrate is made by removing water from juice, making it more concentrated.
   c) Juice concentrate is made by adding more sugar to juice.
   d) There is no difference between juice and juice concentrate.

vii. What preservation methods are commonly used for fruit juices?
   a) Pasteurization and filtration
   b) Freezing only
   c) Sugar and pectin
   d) Dehydration

viii. What is the main difference between jam and jelly in terms of preparation?
   a) Jam uses fruit juice while jelly uses fruit pulp.
   b) Jam uses fruit pulp, while jelly uses fruit juice.
   c) Both use the same ingredients in equal amounts.
   d) Jam does not require sugar, but jelly does.

ix. Which ingredient is essential in both jams and jellies to help them set and achieve a gel-like consistency?
a) Pectin
b) Vinegar
c) Salt
d) Sugar

x. What is the primary preservative factor in tomato ketchup?
a) Salt
b) High sugar content
c) Vinegar
d) Pectin

xi. How does cooking tomatoes for ketchup help in preservation?
a) It adds sugar to the product.
b) It reduces moisture, thus helping to preserve the sauce.
c) It enhances the color of the tomatoes.
d) It makes the sauce thicker by adding starch.

xii. What is the primary function of packaging in food preservation?
a) To improve the taste of the product
b) To protect the product from contamination and maintain freshness
c) To make the product heavier
d) To add additional preservatives to the product

xiii. What information/s is typically included on a food label?
a) Nutritional value, storage instructions, and allergen information
b) Only the expiration date
c) Only the ingredients
d) Only the flavor profile

xiv. How does sugar act as a preservative in jams and jellies?
a) It inhibits microbial growth by reducing the water activity.
b) It adds color to the product.
c) It enhances the acidity of the product.
d) It increases the shelf life by acting as an emulsifier.

xv. Why is pasteurization used in fruit juice processing?
a) To add sweetness to the juice
b) To kill harmful microorganisms while retaining flavor and nutrients
c) To increase the shelf life indefinitely
d) To concentrate the juice

QUESTION 2

a) Give three (3) groups of pigments that give colour to fruits and vegetables [3]

b) Compare and contrast between wine and cider [12]

QUESTION 3

a) Discuss (5) five factors affecting enzymatic browning in fruits and vegetable processing [10]

b) Discuss (5) five principles used in preservation of fruits and vegetables. [10]

QUESTION 4

a) Using a sketch differentiate Active and Passive MAP. [6]

b) Discuss the correlation between fruit maturity, shelf life and quality. [9]

c) Describe the importance of continuous monitoring in maintaining food safety at Critical Control Points (CCPs). [5]

d) Discuss the following maturity indices and identify the instruments used to measure the content of each. [10]

i. Sugar content
ii. Acidity level
iii. Firmness
iv. Moisture content
v. Starch content

QUESTION 5

a) Why is it advisable to fry your French fries twice [6]

b) Discuss the importance of chilling the cut potatoes before frying. [5]

c) Discuss 3 can spoilages [9]

END OF THE EXAMINATION