



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

FACULTY OF HEALTH, APPLIED SCIENCES AND NATURAL RESOURCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION : BACHELOR OF HUMAN NUTRITION	
QUALIFICATION CODE: 08BOHN	LEVEL: 7
COURSE NAME: FOOD PROCESSING AND PRESERVATION	COURSE CODE: FPC721S
SESSION: NOVEMBER 2022	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY QUESTION PAPER	
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INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

PERMISSIBLE MATERIALS

Scientific calculator

THIS QUESTION PAPER CONSISTS OF 3 PAGES (Including this front page)

SECTION A

QUESTION 1

(12 MARKS)

- 1.1 Explain the following terms and concepts:
- 1.1.1 Food processing (2)
 - 1.1.2 Food preservation (2)
 - 1.1.3 Filtration (2)
 - 1.1.4 Intellectual property (2)
 - 1.1.5 Product shelf-life (2)
 - 1.1.6 Steady-state conduction (2)

QUESTION 2

(18 MARKS)

- 2.1 Write short notes about the following words.
- 2.1.1 Highly perishable foods. (2)
 - 2.1.2 Semi-perishable foods. (2)
 - 2.1.3 Non-perishable foods. (2)
- 2.2 Explain how the following processes affect food nutrient content.
- 2.2.1 Dehydrating. (2)
 - 2.2.2 Blanching. (2)
 - 2.2.3 Canning. (2)
- 2.3 Briefly discuss any two (2) types of shelf-life tests. (6)

SECTION B

QUESTION 3

(17 MARKS)

- 3.1 Calculate the total mass balance and component mass balance for mixing ingredients to make sweet potato puree having a 40 % carbohydrate content, and 20% protein content using sweet potato, water, and baby formula milk as ingredients. Usually, sweet potato contains 55 % carbohydrate, and 15% protein and 10 kg of baby milk contain 15% carbohydrates. Calculate the amounts of sweet-potato puree will you make. (10)

Let S = sweet potato, M= baby formula milk and P= sweet potato puree.

- 3.2 Reynold number is the unitless number which determines whether the flow is streamline or turbulent in each fluid. What are the factors that influence the Reynold number. (4)
- 3.3 Enumerate three (3) types of equipment used for dehydration. (3)

QUESTION 4

(23 MARKS)

- 4.1 The World Health Organisation (WHO) has made food safety one of the priorities, urging countries to integrate food safety as an essential public health function. Each food processing companies are required to have HACCP (Hazard Analysis critical control points) plan in their processing plant.
- 4.1.1 Briefly discuss the seven (7) principles of HACCP. (14)
- 4.2 List the sources of energy used in food processing. (4)
- 4.3 Describe five (5) factors to consider when choosing the heat application method. (5)

QUESTION 5

(30 MARKS)

- 5.1 Discuss five (5) factors affecting the shelf-life test. (10)
- 5.1 Describe any five (5) factors that influence the rate of heat penetration into a food. (10)
- 5.2 Explain any five (5) types of intellectual property. (10)

GOOD LUCK!!!