



FACULTY	AGRICULTURE, ENGINEERING AND NATURAL SCIENCES		
SCHOOL	AGRICULTURE AND FISHERIES SCIENCES		
DEPARTMENT	FOOD SCIENCE AND SYSTEMS		
SUBJECT	FOOD PROCESSING AND TECHNOLOGY		
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FIRST OPPORTUNITY EXAMINATION

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This question paper consists of **TWO (2)** pages excluding this front page.

Instructions:

- Answer all **six (6)** questions

QUESTION 1

- a) Given the following information, which of the food is likely to be highly perishable than the other? Bread: 40% moisture content, 0.96 water activity and Biscuits: 5% moisture content, 0.2 water activity [1]
- i) Biscuits
 - ii) Bread
 - iii) None of the above
- b) Which of the combinations is an example of vitamins found in food? [1]
- i) Vitamin A, F, C, K
 - ii) Vitamin A, B, K, G
 - iii) Vitamin A, D, K, B
- c) An example of a monosaccharide sugar [1]
- i) Starch
 - ii) Maltose
 - iii) Glucose
- d) What is a protein? [1]
- i) Protein is a chain of 50 or less amino acids joined together
 - ii) Protein is a chain of 50 or more amino acids joined together
 - iii) Protein is a chain of 49 or less amino acids joined together
- e) Which of the following combination is an example of minerals found in food? [1]
- i) Fe, Cu, Zn
 - ii) Fe, Ts, Cu
 - iii) Zn, K, Mk

QUESTION 2

- a) Define food preservation. [4]
- b) How does blanching affect food preservation, and why is it used? [4]
- c) Explain hurdle technology and provide examples of how it is used in food preservation. [8]

QUESTION 3

- a) Describe the role of pre-processing in food processing and give two (2) examples. [8]
- b) Describe the primary sectors of the food industry and their roles. [10]
- c) Explain the importance of packaging in food preservation and provide two (2) examples of packaging methods. [8]

QUESTION 4

- a) List the five (5) Namibian government ministries that are responsible for food safety according to the Namibian Food safety Policy. [5]
- b) Mention any five (5) of the information required on labelling and packaging under the Namibian food laws. [5]
- c) Explain the role of Codex Alimentarius Commission in establishing food safety standards and guidelines. [10]

QUESTION 5

- a) What is sorting in food processing? Give four (4) main physical properties used to sort foods. [5]
- b) Mention the three (3) basic forces used in size reduction unit operations. [3]
- c) List any five (5) different activities included in the unit operation of mixing. [5]
- d) Explain the effects of sterilisation on foods. [8]

QUESTION 6

Find the best match for each of the unit operations. One match per unit operation. [12]

Unit operation
a) Cleaning
b) Separation
c) Peeling
d) Disintegration
e) Materials handling
f) Mixing
g) Heating
h) Cooling
i) Milling
j) Homogenisation
k) Shredding
l) Distillation

- 1) Size reduction of liquid globules
- 2) Separation based on physical characteristics e.g. size
- 3) Removal of heat
- 4) Size reduction of a fibrous food to small strips by rubbing over a serrated surface
- 5) Removal of contaminants
- 6) Size reduction e.g. cutting peach halves into slices
- 7) Removal of e.g. fruit skin
- 8) Separation based on boiling point e.g. separation of ethanol from water
- 9) Separate components of the product, e.g. pit removed from flesh of a fruit
- 10) Transportation of ingredients or products to the filling station
- 11) Addition of heat energy to sterilize a product
- 12) Obtaining a homogenous mixture e.g. syrup blend
- 13) Size reduction of solids e.g. crushing grain into flour

END OF THE EXAMINATION