



KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**FOURTH YEAR SECOND SEMESTER
MAIN EXAMINATIONS**

FOR THE DEGREE OF

COURSE CODE: AEN 422

**COURSE TITLE: TECHNOLOGICAL APPLICATION IN AGRICULTURAL
PROCESSING**

DATE: 1ST SEPTEMBER 2022

TIME: 9 – 11 AM

INSTRUCTIONS TO CANDIDATES

- (i) Answer Question 1 (Compulsory) and any other TWO questions

This paper consists of 3 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

QUESTION ONE (30 MARKS)

- a) State the three principles used in preservation of food substances (3 marks)
- b) Highlight five reasons why the concept of moisture content is critical in food preservation (5 marks)
- c) Suppose you weighed 10 g of grains into a 4g container and then after drying the container plus the grains weighed 10.3 g. Determine the moisture content of the grains on wet basis and dry basis (4 marks)
- d) Give four quality factors for food substances (2 marks)
- e) Explain the process of blanching during food preservation (2 marks)
- f) Outline three benefits of using a packing house (3 marks)
- g) Highlight three equipment found in the packing house giving their use for each (5 marks)
- h) State six stages that may be involved from the time the produce is harvested to the time it is consumed to ensure quality and safety of the food substances. (6 marks)

QUESTION TWO (20MARKS)

- a. Describe the principle of operation of a refrigerator (10 marks)
- b. Explain five causes of food deterioration (10 marks)

QUESTION THREE (20 MARKS)

- a. Explain the 5 Good management practices during pre-cooling of fruits and vegetables in a packing house (10 marks)
- b. Discuss five design considerations for a packing house. (10 marks)

QUESTION FOUR (20MARKS)

- a. Packaging is important since it keeps the fruits, vegetable and root crops in good condition until it is sold and consumed. Discuss various methods of packaging fruits and vegetables. (10 marks).
- b. Explain five methods of food preservation under thermal processing (10 marks)

QUESTION FIVE

- a) Explain three strategies that can be used to estimate the capacity requirements of a packing facility **(6 marks)**
- b) Cleaning is one of the key operations in the packing house , explain four methods of cleaning fruits and vegetables**(8 marks)**
- c) Discuss three reasons why packing house facility should be constructed as close as possible to the production area **(6 marks)**