

1st SEM. 2019 / 2020



UNIVERSITY OF ESWATINI

**FINAL EXAMINATION PAPER
2019**

PROGRAMME: BSC. ABE

COURSE CODE: ABE309

TITLE OF PAPER: POST HARVEST TECHNOLOGY

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: CALCULATOR

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER QUESTIONS.

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SECTION ONE: COMPULSORY

QUESTION ONE

(40 Marks)

- a) Modern crop production techniques such as use of hybrid seeds, application of chemical fertilizers, herbicides, improved tillage techniques, irrigation technology, pest and diseases control etc., have contributed tremendously to higher crop yields. Whilst this is an acceptable development in terms of food security, these modern systems have brought with them a lot of challenges. Outline post – harvest challenges that are faced by farmers who have adopted the new technologies. (10 marks)
- b) A farmer harvest 10 tonnes of maize at a moisture content of 18 % and stores it in an open storage for three weeks. When shelling the maize he realized that he had only 8.5 tonnes left. At what moisture content was the maize at shelling. (10 marks)
- c) Discuss five characteristics that show that fresh farm produce even after being harvested are alive. (10 marks)
- d) A contact insecticide is to be sprayed in a store room that is 20m x 5m x 5m. Calculate the total surface area that will have to be sprayed to control the insects. (10 marks)

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SECTION II: ANSWER ANY TWO QUESTIONS

QUESTION TWO

(30 Marks)

- a) Name five environmental factors that influence or enhance the deterioration of agricultural products. (10 marks)
- b) What is meant by senescence? (5 marks)
- c) Name the five main components of quality of agricultural produce. (10 marks)
- d) Give two reasons why maturity at harvest is the most important factor for agricultural products. (5 marks)

QUESTION THREE

(30 Marks)

- a) Discuss five reasons why it becomes necessary to develop quality standards for agricultural products. (10 marks)
- b) Discuss two biological factors that are involved in product deterioration. (5 marks)
- c) Why is water loss in a stored agricultural product considered the main cause of deterioration. (9 marks)
- d) Name three (3) physiological disorders that results from the exposure of the commodity from undesirable temperature. (6 marks)

QUESTION FOUR

(30 Marks)

- a) Discuss the feeding mechanism of the two most common types of pests and give two example for each case. (6 marks)
- b) Discuss why physical injury to an agricultural product is not desirable. (4 marks)
- c) Discuss five principles that can help minimize microbial food safety hazards for fresh fruits and vegetables. (10 marks)
- d) Discuss five primary characteristics of a packing house. (10 marks)