

2nd SEM. 2017

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UNIVERSITY OF SWAZILAND

**FINAL EXAMINATION PAPER
2017**

PROGRAMME: BSC. ABE

COURSE CODE: ABE 406

TITLE OF PAPER: CROP PROCESSING AND STORAGE

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

- (a) Discuss five reasons why there is a need for seed production in Swaziland. (5 Marks)
- (b) What is meant by primary and secondary insect pests. Give one example in each case. (5 Marks)
- (c) Discuss with the aid of examples five factors that have the most effect on seed viability and vigor. (10 Marks)
- (d) Name any five factors that have an effect on crop harvesting. Support how each factor is important. (10 Marks)
- (e) i) Calculate the moisture shrink when drying peanuts from 15 percent to 10 percent moisture content. (5 Marks)
- ii) if a farmer has harvested a 150 tonnes of peanuts at 15 percent moisture, what would be the weight after drying to 10 percent? (5 Marks)

SECTION II: ANSWER ANY TWO QUESTIONS

QUESTION TWO

- (a) State five advantages of processing agricultural products. Support each advantage by giving examples. (15 Marks)
- (b) State five reasons why metal containers are most preferred for storing seeds. (10 Marks)
- (c) Grains are hygroscopic and have a low thermal conductivity. What is the implication of these characteristics in grain storage. (5 Marks)

QUESTION THREE

- (a) You are requested to design and construct a maize crib. State five design parameters you must take into consideration and why they are important. (10 Marks)
- (b) Give five ways in which a farmer may lose his crop during storage. (10 Marks)
- (c) In most agricultural processing industries, electric motors are predominately used, what would you say is responsible for this? (6 Marks)
- (d) Give four examples of documents required during the transportation of grains. (4 Marks)

QUESTION FOUR

- (a) Discuss five undesirable effects of ethylene in crop storage. (10 Marks)
- (b) Discuss four reasons why dirt and dust are a problem in a grain storage environment. (10 Marks)
- (c) Modern crop production techniques such as use of hybrid seeds, application of chemical fertilisers, herbicides, improved tillage techniques, irrigation technology, pest and disease 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 related challenges that are faced by farmers who have adopted the new technologies. (10 Marks)