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2nd SEMESTER 2016/2017

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UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRONOMY YEAR 4

COURSE CODE: CP 405

TITLE OF PAPER: CEREALS/GRAIN LEGUME CROPS PRODUCTION

TIME ALLOWED: TWO (2) HOURS

**INSTRUCTION: ANSWER QUESTIONS 1 AND 2, WHICH ARE
COMPULSORY AND ANY OTHER TWO QUESTIONS OF
YOUR CHOICE**

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BY THE CHIEF INVIGILATOR**

QUESTION 1
(THIS IS A COMPULSORY QUESTION)

(a) Compare and contrast cereals and grain legume crops, in Swaziland, under the headings below:

[i] Economic importance (5 Marks)

[ii] Adaptation (5 Marks)

[iii] Morphology (5 Marks)

[iv] Physiology (5 Marks)

[v] Cropping system (5 Marks)

[vi] Yield (3 Marks)

[28 Marks]

QUESTION 2
(THIS IS ALSO A COMPULSORY QUESTION)

(a) What is drought? (4 Marks)

(b) What is the difference between drought resistance and drought tolerance? (6 Marks)

(c) Discuss four types of drought (4 Marks)

(d) List four mechanisms of drought tolerance in crops?

(4 Marks)

(e) Discuss four mechanisms that confer drought tolerance in sorghum

(10 Marks)

[28 Marks]

QUESTION 3

(a) Name two types of wheat that are grown in Swaziland

(2 Marks)

(b) What are the main factors limiting wheat production in Swaziland and how can these be addressed?

(8 Marks)

(c) What is vernalization in wheat?

(2 Marks)

(d) Describe vernalization process in wheat production

(10 Marks)

[22 Marks]

QUESTION 4

Distinguish between the following pairs of words/terms. Use examples and/or diagrams to illustrate your answers where possible.

(a) Type I and Type IV bean growth habit

(5 marks)

(b) Flint and dent maize varieties.

(5 marks).

(c) Effective and non-effective tillers in rice

(4 marks)

(d) Dry beans and French beans.

(4 marks)

(e) Hybrid maize and open pollinated maize

(4 Marks)

[22 Marks}

QUESTION 5

What is the difference between a nodule and a nematode? Use diagrams to illustrate your answer

[a] Describe four methods of seed inoculation in soybean

(5 Marks)

(4 Marks)

[b] Describe the nodulation process in dry beans

(9 Marks)

[c] What are the signs of efficient and effective nodulation in beans:

(4 Marks)

[22 Marks]