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1st SEMESTER 2016/2017

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UNIVERSITY OF SWAZILAND

MAIN EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN AGRICULTURAL
ECONOMICS AND AGRIBUSINESS YEAR TWO

BACHELOR OF SCIENCE IN ANIMAL SCIENCE
YEAR 2

BACHELOR OF SCIENCE IN ANIMAL SCIENCE
YEAR 2 (DAIRY OPTION)

COURSE CODE: CP 205

TITLE OF PAPER: PRINCIPLES OF CROP 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**

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QUESTION 1
(THIS IS A COMPULSORY QUESTION)

(a) With the aid of a map of Swaziland, discuss the agricultural potentials of each of the four main agro-ecological zones of Swaziland.

(14 Marks)

(b) If a farmer applied 400 kg/ha of a compound fertiliser, 5-1-5 (46) to butternut, how many kg/ha of nitrogen, phosphorus and potassium did the farmer apply?

(8 marks)

(c) If the inter-row and the intra-row spacings were 90 cm and 50 cm, respectively, how many grammes of the compound fertiliser did the farmer apply per plant?

(6 marks)

[28 Marks]

QUESTION 2
(THIS IS ALSO A COMPULSORY QUESTION)

Explain the following terms. Give examples to illustrate your answers, where necessary. Each question carries four marks.

(a) Methods of determining leaf area in crop plants.

(b) Yield components in maize.

(c) Botanical classification of crops.

(d) Types of plant competition.

(e) Seed viability tests.

(f) Criteria for essentiality of elements.

(g) Seed vigour tests.

[28 Marks]

QUESTION 3

- What is seed dormancy? [2 Marks]
- Name five types of seed dormancy [5 Marks]
- Discuss three methods of breaking seed dormancy in seeds [6 Marks]
- List three advantages and three and disadvantages of seed dormancy [9 Marks]
- (22 Marks)**

QUESTION 4

- What are organic manures? [3 Marks]
- Name five types of organic manures [5 Marks]
- Discuss the advantages and disadvantages of organic manures [14 Marks]
- (22 Marks)**

QUESTION 5

Distinguish between the following terms. Use examples and/or diagrams to illustrate your answers.

- (a) Major and trace elements. (4 marks)
- (b) Spot application and banding method of applying fertilizers. (4 marks)
- (c) Epigeal and hypogeal emergence of crops. (4 marks)
- (d) Relay intercropping system and catch cropping system. (4 marks)
- (e) Normal and abnormal seedlings (3 marks)
- (f) Carrier concept and mass flow in nutrient translocation in plants/crops (3 marks)

[22 Marks]