



2ND SEM. 2006/2007

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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

PROGRAMME: **BACHELOR OF SCIENCE IN AGRICULTURAL
EDUCATION
BACHELOR OF SCIENCE IN AGRONOMY
BACHELOR OF SCIENCE IN HORTICULTURE**

COURSE CODE: **CP 205** /

TITLE OF PAPER: **CROP PHYSIOLOGY**

TIME ALLOWED: **TWO (2) HOURS**

INSTRUCTION: **ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL
QUESTIONS CARRY EQUAL MARKS.**

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN GRANTED
BY THE INVIGILATOR.**

INSTRUCTIONS: ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

QUESTION 1

Answer the questions sequentially as arranged below. There will be a penalty for non-sequential arrangement of answers.

- a. Name five phytohormones. (2.5 marks)
- b. Cite an international case where there was an abuse of phytohormones in world affairs. (2.5 marks)
- c. Discuss the agricultural importance of phytohormones. (20 marks).

[Total marks for question 1 = 25 marks]

QUESTION 2

Answer the questions sequentially as arranged below. There will be a penalty for non-sequential arrangement of answers.

- a. What do you understand by “an essential nutrient element”? (3 marks)
- b. Explain the essentiality of elements. (3 marks)
- c. Describe a foliar symptom of phosphorus deficiency in maize. (3 marks)
- d. Describe a foliar symptom of nitrogen deficiency in maize. (3 marks)
- e. Describe a foliar symptom of potassium deficiency in maize. (3 marks)
- f. Describe one symptom of calcium deficiency in maize. (3 marks)
- g. Differentiate between a mobile element and an immobile element. (7 marks)

[Total marks for question 2 = 25 marks]

INSTRUCTIONS: ANSWER A TOTAL OF FOUR [4] QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

QUESTION 3

Answer the questions sequentially as arranged below. There will be a penalty for non-sequential arrangement of answers.

- (a) With the aid of a large, labelled diagram, explain stomatal movement. (10 marks)
- (b) How is a stoma physiologically different from a hydathode? (5 marks)
- (c) Explain when (time of day) and the location in a named plant that one can observe evidence of the physiological activity that occurs in a hydathode. (5 marks)
- (d) Explain why the *Cactus* plant can survive in its environment whereas *Zea mays* might not survive in the same environment? (5 marks)

[Total marks for question 3 = 25 marks]

QUESTION 4

Answer the questions sequentially as arranged below. There will be a penalty for non-sequential arrangement of answers.

- a. What is seed dormancy? (2 marks)
- b. LIST four external factors that cause seed dormancy. (4 marks)
- c. LIST four internal factors that cause seed dormancy. (4 marks)
- d. List and briefly discuss four methods of breaking seed dormancy. (4 x 3 = 12 marks)
- e. Name three methods of determining the viability of seeds. (1 x 3 = 3 marks)

[Total marks for question 4 = 25 marks]

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QUESTION 5

- a. Discuss the concept of phytochrome and flowering in plants. (20 marks)
- b. Other than flowering, name five other physiological phenomena that might be mediated by phytochrome. (5 marks)

[Total marks for question 5 = 25 marks]