



2ND SEMESTER 2016/2017

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME:

BACHELOR OF SCIENCE IN HORTICULTURE YEAR IV

COURSE CODE:

HORT 406

TITLE OF PAPER:

SEED SCIENCE AND TECHNOLOGY

TIME ALLOWED:

TWO [2] HOURS

INSTRUCTIONS:

ANSWER ANY FOUR (4) QUESTIONS

DO NOT OPEN UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR

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QUESTION 1

- a) Specify the conditions required for the harvesting of dry seeds (5 marks)
 - b) Describe the following:
 - i) Seed separation (11 marks)
 - ii) Winnowing and cleaning techniques (9 marks)
- [25 MARKS]**

QUESTION 2

Describe winnowing of dry seed using the following techniques:

- a) Moving air (10 marks)
- b) Wind (15 marks)

[25 MARKS]

QUESTION 3

Provide the quality field standards for the onion (*Allium cepa* L) seed plants production following these guidelines:

- a) Isolation (7 marks)
- b) varietal purity (4 marks)
- c) species purity (8 marks)
- d) weeds and diseases (6 marks)

[25 MARKS]

QUESTION 4

- a) Discuss seed technology (15 marks)
- b) Explain the concept of "quality seed" (10 marks)

[25 MARKS]

QUESTION 5

Provide the specification for "field inspection" for okra seed (*Abelmoschus esculents* L) following these guidelines:

- a) number and timing (5 marks)
- b) technique before entry into the field (10 marks)
- c) technique inside the field (5 marks)
- d) technique after inspection (5 marks)

[25 MARKS]



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TITLE OF PAPER:

HYDROPONICS

TIME ALLOWED:

TWO (2) HOURS

INSTRUCTION:

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THE CHIEF INVIGILATOR**

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Question 1

- (a) Discuss the nutrient application and watering of hydroponics plants. [13 marks]
(b) What are the challenges facing hydroponics producers worldwide? [12 marks]
[25 marks]

Question 2

Describe the planning sequence for commercial hydroponics production. [25 marks]

Question 3

Describe the following:

- (a) Grow bag technique [5 marks]
(b) Nutrient film technique [5 marks]
(c) Flood and drain hydroponics system [5 marks]
(d) Criteria for nutrient essentiality [5 marks]
(e) Aeroponics [5 marks]
[25 marks]

Question 4

Discuss the merits and demerits of hydroponics. [25 marks]

Question 5

- (a) What are the factors affecting the choice of media for hydroponics production [10 marks]
(b) What are the causes of failure in commercial hydroponics production? [15 marks]
[25 marks]