



2<sup>nd</sup> SEMESTER 2015/2016

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN HORTICULTURE  
YEAR IV

COURSE CODE: HORT 407

TITLE OF PAPER: HYDROPONICS

TIME ALLOWED: TWO (2) HOURS

INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS

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THE CHIEF INVIGILATOR

**INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS**

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**Question 1**

- (a) Describe how you will prepare a standard 780 ppm nutrient solution for a flood and drain hydroponics system using Hydro grow nutrient powder. [8 marks]
- (b) Calculate the electrical conductivity (EC) of the solution prepared above [5 marks]
- (c) What are the critical considerations in the nutrient formulation for hydroponics plants?

[12 marks]

[25 marks]

**Question 2**

Describe briefly the commercial hydroponics production of lettuce using the deep pool floating raft technique. [25 marks]

**Question 3**

Write briefly on 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**

Hydroponics is an ideal environment for crop production. Discuss the merits and demerits of this system.

[25 marks]

**Question 5**

(a) What are the factors affecting the choice of media for hydroponics production

[10 marks]

(b) What are the essential requirements in a commercial hydroponics production unit?

[15 marks]

**[25 marks]**