



2nd SEMESTER 2013/2014

PAGE 1 OF 3

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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BY THE CHIEF INVIGILATOR**

INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS

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

Discuss 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

- (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]**

Question 5

Discuss the environmental requirements of hydroponically grown plants

[25 marks]