



2nd SEMESTER 2010/2011

PAGE 1 OF 2

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

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

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

Question 1

Describe briefly the following hydroponics methods:

- | | |
|-----------------------------|-------------------|
| (a) Ebb and flow | [5 marks] |
| (b) Sub irrigation | [5 marks] |
| (c) Grow bag technique | [5 marks] |
| (d) Nutrient Film Technique | [5 marks] |
| (e) Wick system | [5 marks] |
| | [25 marks] |

Question 2

Describe the care and maintenance of hydroponics systems.

[25 marks]

Question 3

Discuss the characteristics of any **FIVE** substrates used in hydroponics production.

[25 marks]

Question 4

You have a 1:150 injector in a greenhouse and want to use potassium nitrate (13%N-0%P₂O₅-44%K₂O) and calcium nitrate (15.5%N-0%P₂O₅-0%K₂O) to supply 200 ppm of N and K with each watering to an hydroponics system. How many **grams** of each fertilizer would you weigh out to make a litre of concentrate? (Given %K and %P equals 1.2 and 2.3 of K₂O and P₂O₅ respectively, and 10 as the conversion constant C).

[25 marks]

Question 5

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

[25 marks]