



2nd SEM. 2009/2010

PAGE 1 OF 2

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN HORTICULTURE
YEAR 4

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**

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

Question 1

- (a) Define hydroponics? [5 marks]
 - (b) Discuss the advantages and disadvantages of hydroponics. [20marks]
- [25 marks]**

Question 2

- (a) Discuss the different hydroponics systems. [15 marks]
 - (b) How would you maintain the systems for effective production? [10 marks]
- [25 marks]**

Question 3

- (a) What are the characteristics of a good hydroponics root environment? [10marks]
 - (b) What are the functions of planting medium in hydroponics production? [5marks]
 - (c) List five factors affecting the choice of medium in hydroponics production. [10 marks]
- [25 marks]**

Question 4

- (a) Discuss the role of major nutrient elements with respect to hydroponics plants. [15 marks]
 - (b) Explain the importance of pH and Total Dissolved Solids (TDS) in hydroponics. [10 marks]
- [25 marks]**

Question 5

- (a) Determine the benching efficiency of a greenhouse whose dimension is 8.5m by 30m and a height of 4.6m installed with eight NFT hydroponics systems each having a dimension of 2.0m X3.5m and a height of 1.2m. [10 marks]
 - (b) Calculate the EC (mS/cm) for the following hydroponics nutrients used in 5 treatments having the following TDS: 750; 830; 420; 535 and 681ppm, respectively. [15 marks]
- [25 marks]**