



**2<sup>ND</sup> SEM. 2007/2008**

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**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME: BACHELOR OF SCIENCE HORTICULTURE IV**

**COURSE CODE: HORT 407**

**TITLE OF PAPER: HYDROPONICS**

**TIME ALLOWED: TWO [2] HOURS**

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

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

**QUESTION 1**

Outline five (5) advantages and disadvantages of producing horticultural crops in hydroponic units as opposed to field production.

**[25 marks]**

**QUESTION 2**

Describe the following hydroponic methods:

- |   |            |
|---|------------|
| (a) Static Aerated Technique (SAT)            | (7 marks)  |
| (b) Ebb and Flow or Flood and Drain Technique | (8 marks)  |
| (c) Nutrient Film Technique (NFT)             | (10 marks) |

**[25 marks]**

**QUESTION 3**

Alongside the tomato (*Lycopersicon esculentum* L.), strawberry (*Fragaria spp* L.) is considered one of the most suitable crops for hydroponic production. Discuss this statement by providing details on the management of the crop in any hydroponic unit.

**[25 marks]**

**QUESTION 4**

Although hydroponics has frequently perceived to be crop production under 'soil-less culture', several media are used in some hydroponic units. Discuss the attributes of the following media:

- |                 |           |
|-----------------|-----------|
| (a) sawdust     | (8 marks) |
| (b) Rockwool    | (9 marks) |
| (c) vermiculite | (8 marks) |

**[25 marks]**

**QUESTION 5**

It is important to monitor the pH and EC of the solution used in hydroponics. Provide a detailed account on how to use the pH and EC 'pen' to monitor crop nutrition in greenhouses.

**[25 marks]**