UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BACHELOR OF SCIENCE IN HORTICULTURE

YEAR III

COURSE CODE: HORT 302

TITLE OF PAPER: GREENHOUSE MANAGEMENT AND UTILIZATION

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

ANSWER ANY FOUR (4) QUESTIONS

Question 1

(a) What is a greenhouse? [5 Marks]

(b) What is the purpose of establishing a greenhouse in horticultural enterprise? [8 Marks]

(c) List the uses of greenhouse in horticultural enterprise? [12 Marks]

[25 marks]

Question 2

What factors will guide the choice of an area for a greenhouse enterprise?

[25 marks]

Question 3

a) List the physiological effects of temperature on greenhouse crop production. [10 Marks]

b) Calculate the number of lamps required to light up a greenhouse growing area of 28 m by 30 m during the winter period in Swaziland if the plant light requirement is 660 ft-candles. [Given 1 ft-c =10.8 lumens]. The 400 W metal halide lamp output is $36x10^3$ lumens. Show all your calculations. [6 Marks]

c) What criteria will you consider when choosing a covering for a greenhouse in your locality? [9 Marks]

[25 marks]

Question 4

Describe the maintenance operations you will carry out as the manager of ROYAL SWAZI GREENHOUSE Inc.

[25 marks]

Question 5

You have a 1:225 injector in a greenhouse and want to use potassium nitrate (13% N-0% P_2O_5-44% K_2O) and calcium nitrate (15.5% N-0% P_2O_5-0% K_2O) to supply 250 ppm of N and K with each watering. How many **grams** of each fertilizer would you weigh out to make **1-liter** of concentrate? (Given % K and % P equals **1.2** and **2.3** of K_2O and P_2O_5 respectively, and **10** as the conversion constant C).

[25 Marks]