UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: .   BACHELOR OF SCIENCE IN HORTICULTURE
                   YEAR III

COURSE CODE: HORT 305

TITLE OF PAPER: HORTICULTURAL EXPERIMENTATION

TIME ALLOWED: TWO [2] HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

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INVIGILATOR

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QUESTION 1

Describe the general guidelines to be followed when designing an experiment in horticulture. (14 marks)

Describe the conditions under which the randomised complete block design (RCBD) is preferred over a completely random design (CRD) (11 marks)

[25 marks]

QUESTION 2

Describe the situation that would require the following experimental concepts:
a) factorial arrangement in experimentation (15 marks)
b) Duncan's Multiple Range Test (DNMRT) as opposed to a t-test (5 marks)
c) control treatment (5 marks)

[25 marks]

QUESTION 3

With the aid of appropriate examples, discuss the following:
a) Randomisation (9 marks)
b) Replication (9 marks)
c) Treatment (3 marks)
d) Plot size (4 marks)

[25 marks]

QUESTION 4

Discuss in detail the design, treatments, parameters to measure for the following lettuce (*Lactuca sativa* L experimental scenario:
As a researcher you would like to accomplish the following at once:
a) You want to compare two lettuce (*Lactuca sativa* L) cultivars with each other.
b) You would like to evaluate the effect of transplanting date on the performance and yield of the cultivars.
c) You would like to determine if varying the transplanting date changes the relative performance and head mass of the cultivars, such that it would probably be advantageous to plant one cultivar earlier than the other.

[25 marks]

QUESTION 5

a) List the components of a research proposal   (8 marks)
b) Using appropriate example where necessary, describe each of the components of a research proposal listed above   (17 marks)

[25 marks]