



1ST SEMESTER 2017/18

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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

**PROGRAMME: BACHELOR OF SCIENCE IN HORTICULTURE YEAR
3**

COURSE CODE: HRT301/HORT 305

**TITLE OF PAPER: RESEARCH METHODS/HORTICULTURAL
EXPERIMENTATION**

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

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INVIGILATOR**

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

QUESTION 1

- a) Why do we have to conduct research? [5]
 - b) With the aid of examples explain these terms:
 - i) Factor [2]
 - ii) Levels [2]
 - iii) Sampling unit [2]
 - iv) Block [2]
 - v) Experiment [2]
 - c) Discuss the factors to consider in experimental designs. [10]
- [25 marks]**

QUESTION 2

You have been directed to carry-out a field experiment at UNISWA Luyengo Campus on the growth and yield of three varieties of potato. The fertilizer treatments are 0, 30 and 60 kg N/ha and 0, 15 and 30 kg P/ha with four replications.

- a) Which experimental design will you use for this research and why? [7]
 - b) List the different treatments for the experiment. [6]
 - c) Sketch the ANOVA table for this experiment, indicating the estimates of degrees of freedom. [12]
- [25 marks]**

QUESTION 3

Discuss the Randomised Complete Block Design (RCBD) and draw its skeleton ANOVA.

[25 marks]

QUESTION 4

A research proposal is an important component of a successful research. Write a concise outline of your final year research proposal.

[25 marks]

QUESTION 5

- a) Discuss natural sources of error in field experiments. [10]
- b) What determines the number of replications? [5]
- c) Discuss the steps in experimentation. [10]

[25 marks]