



1ST SEM 2019/20

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UNIVERSITY OF ESWATINI

FINAL EXAMINATION

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

COURSE CODE: HRT301

TITLE OF PAPER: RESEARCH METHODS

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

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INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS

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Question 1

a) With the aid of examples discuss these terms:

- i. Factorial experiment [2]
- ii. Variable [2]
- iii. Experiment unit [2]
- iv. Replication [2]
- v. Treatment [2]

b) Discuss:

- i. Single factor experiment [7]
- ii. Multiple factor experiments [8]

[25]

Question 2

a) Discuss on-farm and on-station research.

[25]

Question 3

Hygro-Tech has three (3) new ginger cultivars that she would like to test its performance in the four agro-ecological zones of Eswatini. The cultivars are Imugan, Jamaica and Hawaiian.

- a) Design a treatment lay-out. [12]
- b) Draw a skeleton ANOVA table and solve for the degrees of freedom. [13]

[25]

Question 4

a) Discuss randomised complete block design (RCBD) and draw its skeletal ANOVA.

[25]

Question 5

- a) Discuss the test of significance (F-test). [5]
 - b) Discuss the Duncan's New Multiple Range Test (DNMRT). [10]
 - c) What are the mistakes done when planning and laying-out an experiment? [10]
- [25]