



UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER

PROGRAMME; BSc. BSC AGRICULTURAL AND BIOSYSTEMS ENGINEERING 3

COURSE CODE: ABE 305

TITLE OF PAPER: RESEARCH METHODS

TIME ALLOWED: TWO (2) HOURS

SPECIAL MATERIAL REQUIRED: NONE

INSTRUCTIONS: ANSWER QUESTION ONE AND ANY TWO OTHER QUESTIONS

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CHIEF INVIGILATOR

QUESTION ONE: COMPALSORY QUESTION

- a) The pretest-posttest control-group experimental design is considered to be a strong design. Describe its features. Describe its features, highlighting how it can be used in research on adoption of an innovation to improve agricultural production. **(20 marks)**
- b) Using examples, discuss the difference between fundamental (pure) research and applied research. **(10 marks)**
- c) Describe the nominal, ordinal and cardinal levels of measurements in research. **(10 marks)**

QUESTION TWO

- a) Discuss five basic characteristics of a well formulated research objective. **(10marks)**
- b) Using practical examples, discuss what is meant by sampling frame, explaining how it can be used in research. **(10 marks)**
- c) Discuss how histograms and line graphs can be used to graphical represent data from research. **(10 marks)**

QUESTION THREE

- a) Discuss the difference between confidence interval and confidence level, indicating how the concepts are applied in research. **(10 marks)**
- b) Discuss how random sampling can be used in a research, highlighting conditions under which it can be used. **(10 marks)**
- c) Using examples, describe the difference between a null hypothesis and a hypothesis. **(10 marks)**

QUESTION FOUR

- a) Discuss the focus group discussions method, highlighting the practical areas of application, merits and shortfalls of the focus group method. **(20 marks)**
- b) Discuss how correlation is used in data analysis, indicating how correlation coefficient can be interpreted. **(10 marks)**