(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS

2020/2021 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS

YEAR ONE SEMESTER ONE EXAMINATIONS

FOR DOCTOR OF PHILOSOPHY IN

(INFORMATION TECHNOLOGY)

COURSE CODE: PIT 912

COURSE TITLE: ADVANCED RESEARCH METHODS IN COMPUTING

DATE:29/05/2021   **TIME: 9.00 A.M. – 11.00 A.M.**

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER TWO (2) QUESTIONS

QUESTION ONE [20 MARKS]

a) Discuss the following terms as used in research

    i)   Independent variable   [2 marks]

    ii)   Dependent variable   [2 marks]

    iii)   Confounding variable   [2 marks]

b) Identify **ONE** difference between an experimental and correlation research   [2 marks]

c) Outline **FOUR** levels of measurement   [2 marks]

d) Name and define three measures of central tendency   [2 marks]

e) With a relevant example, outline the use of measures of central tendency.   [2marks]

f) Discuss randomization as used research?   [2marks]

g) Differentiate between directional and non-directional hypothesis. For each outline when each one is suitably used.   [4 marks]

QUESTION TWO [20 MARKS]

a) With relevant examples discuss the following terms as used in research.

    i)   Inductive reasoning   [4marks]

    ii)   Deductive reasoning   [4marks]

b) With respect to his research topic, a postgraduate student in information technology was advised to use survey method in his research.

    i)   Outline to him **THREE (5)** merits and **THREE (5)** demerits of survey research.

                                                                  [6marks]

    ii)   Describe to him **TWO (2)** difficulties that he would encounter through the use of questionnaires. For each difficulty described, suggest **ONE (1)** remedy. [6marks]

QUESTION THREE [20 MARKS]

a) Name **THREE** measures of dispersion and explain what they are used for. [4marks]

b) Outline what is meant by reliability. [2marks]

c) Outline **FOUR** types of Probability sampling techniques and for each technique briefly discuss suitability in a given scenario [8marks]

d) Outline **THREE** factors determine sample size? [6marks]

QUESTION FOUR [20 MARKS]

a) When would you use a median rather than a mean? [3marks]

b) With reference to a particular research topic, outline the purpose of pilot study. [3marks]

c) Describe **TWO (2)** advantage of conducting literature review [4marks]

d) Outline **TWO(2)** reasons for sampling in research [4marks]

e) Outline the difference between a cross-sectional and a longitudinal research design.
[4 marks]

f) Define an extraneous variable and briefly discuss how it can affect the outcome of a research.
[2 marks]

Prof Martin wants
to

UESTION FIVE [20 MARKS]

a) Outline the key purpose of a case study. [3 marks]

b) Explain what is meant by 'operationalising' variables? Suggest two ways in which 'authentication' could be operationalised. [6marks]

c) With relevant examples explain the term "validity" as used in research. [5 marks]

d) Suppose the state department of ICT has developed a new instrument for evaluating network performance in the country. Outline **THREE** empirical evidence would provide strong support for the validity of the scores resulting from this instrument. [6 marks]