



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

**UNIVERSITY EXAMINATIONS FOR THE DEGREE IN SCIENCE IN RENEWABLE
ENERGY TECHNOLOGY AND MANAGENT**

3RD YEAR 1ST SEMESTER 2018/2019 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TET 3318

COURSE TITLE: RESEARCH METHODS

EXAM VENUE: STREAM: BSc REN ENERGY TECH & MGT

DATE: ../12/2018 EXAM SESSION:

DURATION: 2 HOURS

Instructions

- 1. Answer question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (30 MARKS)

- a. Briefly explain the importance of the course. “Research Methods” to you as a student of Construction Management or Renewable Energy Technology and Management. **(6 Marks)**
- b. Originality is one of the most important characteristics of research. Briefly explain the scope and potential of originality as applied in research. **(6 Marks).**
- c. The following terms are used to qualify what Research Methods is. Briefly explain what they mean. **(8 Marks)**
- i. Research is controlled
 - ii. Research is systematic
 - iii. Research is empirical
 - iv. Research outcomes is critical
- A research project/study must have an outcome. Discuss the various possible outcomes of research undertaking. **(10 Marks)**

QUESTION TWO (20 MARKS)

- a. Briefly describe the different types of research listed below; **(10 marks)**
- i. Exploratory research
 - ii. Correlational research
 - iii. Explanatory research
 - iv. Quantitative research
- b. Briefly explain the importance of sampling in Research Methodology and describe the different possible techniques of sampling explaining their appropriateness. **(10 Marks)**

QUESTION THREE (20 MARKS)

- a. Explain what you understand by “Validity of experimental results”, hence briefly discussing various variables/factors that may render the results invalid. **(12 Marks)**
- b. With reference to specific examples, briefly describe the following types of variables as applied in research. **(8 Marks)**
- i. Ratio variables
 - ii. Ordinal variables
 - iii. Interval variables
 - iv. Independent variables

QUESTION FOUR (20 MARKS)

- a. Describe the following as applied to research problem identification process.
- i. Problem audit **(3 Marks)**
 - ii. Background analysis **(3 Marks)**
 - iii. Determination of research tasks **(4 Marks)**
- b. Outline the importance of data analysis in research; hence describe various ways of quantitative data analysis (use diagrams where applicable). **(10 marks)**

QUESTION FIVE (20 MARKS)

Explain the importance of the various components of a typical research proposal. **(20 Marks)**