



TECHNICAL UNIVERSITY OF MOMBASA
**Faculty of Engineering &
Technology**

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR DECREE IN:

BACHELOR OF SCIENCE IN CIVIL ENGINEERING (BSCE 11A)

ECE 2409: RESEARCH METHODOLOGY

END OF SEMESTER EXAMINATION

SERIES: APRIL 2015

TIME ALLOWED: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- Answer Booklet
- Pocket Calculator

This paper consists of **FIVE** questions. Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

Use neat, large and well labeled diagrams where required

This paper consists of **TWO** printed pages

Question One (Compulsory)

The transport section in Mombasa County has been experiencing serious problems. Traffic along the Mombasa-Nairobi highway has increased and has subsequently led to waste of valuable time with large financial implications. To improve the transport situation along the highway, the county government has contacted you to carry out a research study to establish and resolve the problem. Required:

- a) Explain the research approach that you will adopt and give reasons for your choice **(3 marks)**
- b) Identify the problem giving justification why it is a problem **(6 marks)**
- c) Formulate research objectives for your research **(5 marks)**
- d) Identify tentative transport problems in the roads and transportation sectors that will help you to conceive the hypothesis for the study. **(6 marks)**

- e) Construct a well formulated questionnaire to enable you collect data for your research (10 marks)

Question Two

Discuss the distinct sections found in a research report (20 marks)

Question Three

- a) Compare and contrast questionnaires and interviews as research instruments (12 marks)
b) Discuss the different categories of questions used in questionnaires (8 marks)

Question Four

- a) Differentiate between quantitative and qualitative research approaches (10 marks)
b) Explain the difference between experiment and non-experimental research (10 marks)

Question Five

- a) Outline the steps followed when carrying out literature review (6 marks)
b) Discuss any THREE types of graphical representation of frequency distributions (12 marks)