THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE

IN CIVIL ENGINEERING

HRD 2114: RESEARCH METHODOLOGY

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2011
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer booklet*

This paper consists of **FIVE** questions
Answer question **ONE (COMPULSORY)** from **SECTION A** and any other **TWO** questions from **SECTION B**
Maximum marks for each part of a question are clearly shown
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

You have been engaged as a Research Assistant by the Kenya Association of Manufacturers. Your assignment includes sampling of various industrial building products to determine the severity of the counterfeit problem to the building and construction industry in Kenya.

(a) (i) Define the term Research   (2 marks)
　　(ii) Why is it important to carry out this Research?   (8 marks)

(b) Explain any **FIVE** types of research design that would be appropriate for this study   (10 marks)

(c) (i) Identify the total and target population for this study   (4 marks)
　　(ii) Identify the Dependant variable in this study; and the subsequent independent variables.
                                                                                                                                    (6 marks)

SECTION B (Answer any TWO questions from this section)

Question 2

(a) There are **FIVE** types of variables that a researcher is likely to find in a research study. Explain these variables giving appropriate examples (10 marks)

(b) Identify and explain the various sources of knowledge (10 marks)

Question 3

(a) Name and briefly describe the various measurement scales that a researcher can use in the operationalization of the variables in the study (8 marks)

(b) The distribution of marks obtained in a statistics test by 70 first year degree students in a university college were as follows:

Marks	No. of students (f)
10-20	1
20-30	3
30-40	6
40-50	10
50-60	14
60-70	18
70-80	12
80-90	4
90-100	2

   (i)   Construct a Histogram from the above information (10 marks)
   (ii)   From the Histogram you have drawn, estimate the mode of the distribution (2 marks)

Question 4

The following are the ages of the children belonging to employees at a water bottling firm. You are required to compute the standard Deviation and the Co-efficient of variation from the data

(20 marks)

Age (years)	0 – 10	10 – 20	20 – 30	30 – 40	40 - 50
No. of Employee's Children	7	6	15	12	10

Question 5

(a) (i) Describe the features of a good questionnaire as a tool for collecting primary data. (6 marks)
    (ii) Mention the other methods of collecting primary data (2 marks)

(b) Differentiate between;
  (i)   Descriptive and inferential statistics   (2 marks)
  (ii)   Type I and Type II Error   (2 marks)

(c) Explain **FOUR** Ethical considerations that a researcher should bear in mind   (8 marks)