



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

**DIPLOMA IN CIVIL ENGINEERING & COMPUTER AIDED DESIGN
DIPLOMA IN BUILDING & CONSTRUCTION ENGINEERING**

EBC 2304: RESEARCH METHODOLOGY & PROJECT I

END OF SEMESTER EXAMINATION

SERIES: AUGUST/SEPTEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer booklet*
- *Scientific calculator*

This paper consists of **FIVE** questions

Answer question **ONE** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

- a) Define the term research and state its functions (12 marks)
- b) Describe any **THREE** key measures of central tendency (6 marks)
- c) Two engineers Kamau and Okello were assigned the duty of assessing the quality of various engineering projects. These projects were A, B, C, D and E whose scores were given as below

PROJECT	Scores for Eng Kamau	Scores of Eng. Okello
A	62	66
B	71	63
C	55	58
D	34	38
E	49	48

- (i) Compute Pearson's Product Correlation Coefficient (r_p) and the Spearman's rank Correlation Coefficient (r_s)
- (ii) Compare the two values of r_p and r_s and make the necessary comments (12 marks)

SECTION B (Answer any TWO questions from this section)

Question 2

- a) What are the reasons behind sampling (4 marks)
- b) What are the sources of research topics (6 marks)
- c) Describe **THREE** types of quantitative research designs (10 marks)

Question 3

Describe the key components a final research project (20 marks)

Question 4

- (i) A research study had the following data:

X	1	2	3	4	5	6	7	8	9	10
Y = f(X) = 0	0	10	123	40	61	86	115	148	186	226

Establish the relationship between X and Y (8 marks)

- (ii) Describe the **THREE** approaches to an investigation (6 marks)
- (iii) Explain **THREE** qualities of an investigation (6 marks)

Question 5

- a) Outline the procedures for the testing of hypothesis (10 marks)
- b) Mention the factors that must be considered in identifying and stating research problem (10 marks)