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
DIPLOMA IN ARCHITECTURE**

EBC 2304: RESEARCH METHODOLOGY & PROJECT

SPECIAL/SUPPLEMENTARY EXAMINATON

SERIES: OCTOBER 2011

TIME: 2 HOURS

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

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
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question 1

a) (i) Define the term research
   (ii) State purposes of research (10 marks)

b) Distinguish the following terms as applied in research:
   (i) Experimental design and correctional design
   (ii) Descriptive statistics and inferential statistics (6 marks)

c) Describe the **THREE** qualities of an investigation (6 marks)

d) The following data was obtained from research. Determine the law relating X to Y (8 marks)

X	1	2	3	4	5	6	7	8	9	10
Y f(x)	0	10	23	40	61	80	115	148	185	226

SECTION B (Answer *any TWO questions from this section*)

Question 2

a) Outline the procedure for hypothesis testing stating possible errors (10 marks)

b) Describe **THREE** types of Quantitative Research Design (16 marks)

Question 3

a) Describe the key measures of central tendency (8 marks)
b) Score marks obtained by two observers are as follows:

Observer A	63	70	56	35	50
Observer B	69	65	60	40	50

   (i) Compute Pearson's product moment correlation coefficient
   (ii) Compute the spearman's rank correlation coefficient
   (iii) Compare the results obtained and make necessary comments (12 marks)

Question 4

a) Explain action that can be take to increase accuracy of an experiment (5 marks)

b) Weights gained by pigs were recorded as follows
   A 94   89   80   88
   B 65   87   73   79   81   69
   C 75   69   83   81   72   79   90
   D 59   78   67   62   83   76

Determine if these data is sufficient evidence the difference in mean weights for the four dig 5 .
Take $\alpha = 0.05, \; F = 3.13$ (15 marks)

Question 5

Describe the main components of a final research report (20 marks)