THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

(A Centre of Excellence)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

DIPLOMA IN ARCHITECTURE
DIPLOMA IN CIVIL ENGINEERING
DIPLOMA IN BUILDING & CIVIL ENGINEERING

EBC 2304: RESEARCH & METHODOLOGY

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2012
TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*
- *Scientific Calculator/Mathematical Tables*

This paper consists of **FIVE** questions.

Answer any **THREE** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (20 marks)

a) Discuss the following sections for design of a research projects:
- **i)** Problem statement
- **ii)** Literature review
- **iii)** Justification of the study **(12 marks)**

b) Discuss each of the following types of research.
- i) Correlation
- ii) Case study
- iii) Historical
- **iv)** Descriptive **(8 marks)**

Question Two (20 Marks)

a) Discuss any **FIVE** features of a good questionnaire. **(5 marks)**
b) Describe any **FOUR** considerations in preparing research design. **(8 marks)**
c) Describe the stages a researcher would implement to ensure the research is successful.

(7 marks)

Question Three (20 Marks)

An Engineer Lectures a class on Monday through Friday, and wants to know if class attendance is the same every day of the week. The findings are:

DAY	**ATTENDANCE**
Monday	283
Tuesday	332
Wednesday	360
Thursday	307
Friday	243

Carry out a chi-square test at 0.05 level of significance using article value decision rule of:

Ho = The distribution of attendance is uniform (i.e. same for each of the five days). **(20 marks)**

Question Four (20 Marks)

a) Discuss the ethical challenges that one can encounter if Tana Delta were to be a research area.
(10 marks)

b) Explain each of the following terms giving examples where applicable.
- **i)** Independent variable
- **ii)** Dependent variable
- **iii)** Extraneous variable
- **iv)** Intervening variables
- **v)** Moderating variables **(10 marks)**

Question Five (20 Marks)

a) Determine the following if given mean as 50, coefficient of variation as 40% and Karl Peason coefficient of skewness as 0.4:
   i) Mode
   ii) Mean
   iii) Standard deviation **(5 marks)**

b) Errors in manuscripts sent to a publisher were as follows:

45	59	47	59	60	60	78	80	89	78	87
7	80	40	30	44	40	30	45	50	45	33

Determine:
   i) Mean
   ii) Median
   iii) Standard deviation
   iv) Comment on the results **(15 marks)**