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 BUILDING & CIVIL ENGINEERING
DIPLOMA IN CIVIL ENGINEERING

EBC 2304: RESEARCH METHODOLOGY AND PROJECT I

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2012
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 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) Define research. **(2 marks)**

b) Discuss briefly the following sampling techniques.
   i) Self selection
   ii) Snow ball sampling
   iii) Systematic sampling
   iv) Cluster sampling **(8 marks)**

c) Explain how an interview is conducted. **(6 marks)**

d) Give **TWO** differences between hypothesis and problem statement. **(4 marks)**

Question Two (20 Marks)

The management of Mombasa Housing Corporation has realized the importance of management information systems training to its middle level managers. After the MIS training 500 middle level managers were graded in ranks A B C and D in their work attitude in the ratio 2:3:5:8

Grade	A	B	C	D
Middle Level Managers	46	75	126	253

The null hypothesis is that there is no significant improvement in the work attitude of middle level managers after MIS training.

   i) Calculate the Chi square **(17 marks)**
   ii) Calculate the degree of freedom **(1 marks)**
   iii) Given the table value at 0.05 level of significance is 7.8147. Comment on the hypothesis. **(2 marks)**

Question Three (20 Marks)

a) List **FOUR** sources of research topics. **(4 marks)**

b) Define the following terms:
   i) Mean
   ii) Mode
   iii) Population **(6 marks)**

c) An engineering student was required to take three tests, consisting of Test 1 (numeracy) Test 2 (literacy) and test 3 (general knowledge). Given the following results:
   i) Calculate the Z score for the candidate. **(6 marks)**

	Raw Score	Mean	Std. Deviation
Test 1 (Numeracy)	81	75	12
Test 2 (Literacy)	16	13	2
Test 3 (General Knowledge)	31	34	10

    ii) Which of the three tests did the student perform well? **(2 marks)**

d) Name **TWO** types of data. **(2 marks)**

Question Four (20 Marks)

a) Discuss **FIVE** ethical issues relating to the respondents in a research. **(10 marks)**

b) Give **TWO** disadvantages of using mean as a measure of central tendency. **(4 marks)**

c) Give **FOUR** reasons why sample study is preferred to census study. **(6 marks)**

Question Five (20 Marks)

a) Discuss the following sampling techniques.
    i) Snow ball sampling
    ii) Cluster sampling
    iii) Self selection sampling
    iv) Systematic sampling **(10 marks)**

b) Hazina investment was interested in the rates of return of two different funds. Grow bucks showed interest rates over the last five years of 12, 10, 13, 9 and 11%. While Dollarise yielded 13, 12, 14, 10 and 6%. Both funds offer an average return of 11%. Calculate the variance of each and indicate which one Hazina Investment should select for its clients. **(8 marks)**

c) Calculate the standard deviation for each. **(2 marks)**