THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

EMG 2415: RESEARCH METHODS

END OF SEMESTER EXAMINATIONS

SERIES: DECEMBER 2011

TIME: 2 HOURS

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

This paper consist of **FIVE** questions in **TWO** sections **A & B**
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

Question one 30 marks

The Food Processers Association in Kenya undertook a study of demand for locally processed food in the country. It was expected that the research findings would be of interest to food processers as well as government agencies related to agriculture, trade and industry. In the study demand for locally processed food was treated as a function of four variables namely locally processed food prices, income of consumers, government taxes on inputs and prices of other household needs like health and education. It was noted that there is heavy importation of low taxed food stuff that lowers demand for more expensive locally processed food.

In consideration of the above information answer the following questions.

a) State the research problem that would have guided the study. (4 marks)

b) Identify and label **FOUR** independent variables that were used in the study. (4 marks)

c) Identify and label the dependent variable that was used in the study. (1 mark)

d) Formulate **FOUR** objectives that the research wished to achieve. (4 marks)

e) What was the probable purpose of the study? (3 marks)

f) What was the significance of the study? (3marks)

g) Formulate a conceptual framework that could have been used in the study. (4marks)

h) Suggest and justify the most suitable data collection method for the study. (4 marks)

i) What could have been the target population? (3 marks)

SECTION B (ANSWER ANY TWO QUESTIONS)

Question two 20 marks

a) Good research hypotheses are essential in any research. What is a hypothesis? What are the qualities of a good research hypothesis? (8 marks)

b) (i) Distinguish between pure research and applied research (4 marks)

   (ii) Differentiate between 'survey research design' and 'experimental research design' (4 marks)

c) How would you improve the rate of return of a mail survey? (4 marks)

Question three 20 marks

a) Describe the meaning and application of the following sampling methods.

   i)   Stratified sampling (3 marks)
   ii) Cluster sampling (3marks)
   iii) Snowballing sampling (3marks)

iv) Simple sampling   (3 marks)

b) Why is it desirable to pretest a measurement tool in research?   (4 marks)

c) Highlight **four** basic rules that guide in construction of good questionnaire.   (4 marks)

Question four 20 marks

a) Distinguish between research methods and research methodology.   (4 marks)

b) Explain the following concepts as used in data processing.

  i)   Data editing   (2 marks)
  ii) Data coding   (2 marks)
  iii) Data classification   (2 marks)
  iv) Data tabulation   (2 marks)

c) Outline the advantages and disadvantages of using the face to face interview technique when collecting data.   (8 marks)

Question five 20 marks

a) Some students were overheard telling others that literature review should be avoided so that the researcher avoids being influenced by other authors' views. Do you agree with this statement? Support your answer.   (8 marks)

b) Using examples show how you can use descriptive statistics in data analysis.   (6 marks)

c) Explain probable causes of measurement errors in research.   (6 marks)