

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE**

BMCS 13J/YEAR3 BSSC 13S BTRE 13S BTAP 13S/ SEMESTER2

BMC 4303: RESEARCH METHODS

SEMESTER EXAMINATION

SERIES: APRIL/MAY 2016

TIME: 2 HOURS

Instructions to Candidates

This paper consists of FIVE questions

Answer question ONE (COMPULSORY) and any other TWO questions.

This paper consists of three printed pages.

SECTION A

Question 1:

- a) Define research (2mks)
- b) Describe the 2 major types of research methods (2mks)
- c) Give 3 benefits of a research (3mks)
- d) Write short notes on the following
 - i. Historical research (1mk)
 - ii. Case study (2mks)
 - iii. Rural rapidappraisal (1mk)
 - iv. Descriptive research (1mk)
- e) State measures of central tendencies (3mks)
- f) The following is information derived from a trader she received in 8 days :
20,45,15,45,50,5,45,20
 - i. Calculate mean (2mk)
 - ii. Calculate mode (1mk)
 - iii. Calculate median (1mk)
- g) What is a sample (2mk)
- h) Explain population (3mks)
- i) Give and explain 2 basic sampling techniques (4mks)
- j) c). Define validity and reliability (2mks)

SECTION B

2. The following information was derived from a clinic attendance register in a hospital from 2001-2004. In 2001 3600 patients attended medical clinic, 2500 patients attended surgical clinics and 2600 gynaecological clinic. In 2002, there were 6800 patients' attendance in all the three clinics out of which 3300 attended medical clinic, 2500 gynaecological clinic, and the remaining attended surgical clinic. The following year 2003, both medical and gynaecological clinics had the same attendance of 2900 patients with surgical clinic having 3200 patients. Total number of patients who attended medical clinic for the said period of 2001-2004 was 1100, in 2004 surgical and gynae clinics had 2600 and 2400 patients attendance respectively.

Using the above information

- a) Construct a table 10mks
- b) Draw a multiple component bar chart 5mks
- C) Draw a pie chart for the said period 5mks

- 3 .a Define convenience sampling 2 mks
- b. explain where convenience sampling would be appropriately applied 5 mks.
- c. Describe 4 probability sampling techniques 8 Mks.
- d. With brief explanation why, state 5 groups of target populations in which snowball is the best sampling method 5 Mks
4. when limitations of the study occur, the researcher should be able to defend the validity of the findings of such limitations .In the light of this statement,

- a) Describe 5 limitations which may be identified in a research study (5 marks)
- b)Identify 3 purposes of study objectives, and briefly describe how to formulate a good research objectives (6 mks)
- c. Explain 4 reasons why pretesting of tools is carried out before collection of data (4mks)
- d. Define research proposal 2 mks
- e. Give 3 reasons for research proposal 3 mks
- 5. Describe the steps of research process (10mks)**
- b Identify 3 major areas from which a good research topic can be drawn 6 mks**
- c. Explain 4 problems a relevant study seeks to address. 4 mks**