



Technical University of Mombasa

Faculty of Applied and Health Sciences

DEPARTMENT OF PURE AND APPLIED SCIENCES
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF
TECHNOLOGY IN APPLIED CHEMISTRY
BTAC 11M, 12J₂, & 12M₂

ACH 4301: RESEARCH METHODOLOGY

SEMESTER EXAMINATION

DECEMBER 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consists of **FIVE** questions

Answer question **ONE** (compulsory) and any other **TWO** questions

QUESTION ONE

- a) Distinguish between:
- (i) Concept note and research proposal (2marks)
 - (ii) Survey and census (2marks)
 - (iii) Research design and experimental design (2marks)
- b) Explain briefly the characteristics of research (3marks)
- c) Outline the factors to consider when selecting a research problem (4marks)
- d) Explain the application of the following types of research.
- (i) Empirical research (2marks)
 - (ii) Analytical Research (2marks)
- e) Explain the purpose of objectives in the research process (2marks)
- f) Discuss the importance of literature review in the research process (4marks)

- g) Discuss ethical issues relating to the researcher in data collection (4marks)
- h) Outline THREE statistical packages that are available for data analysis. (3marks)

QUESTION TWO

- a) Discuss the procedure for reviewing literature in the research process. (12marks)
- b) Explain the sources of literature in the process of literature review. (4marks)
- c) Referencing is a key step in process of literature review. Explain how to reference for:
 - (i) Books (2marks)
 - (ii) Journal articles (2marks)

QUESTION THREE

- a) Differentiate between “primary data” and “Secondary data”. (2marks)
- b) Discuss the questionnaire as a tool of collecting primary data (8marks)
- c) Discuss the steps involved in data analysis (10marks)

QUESTION FOUR

- a) Describe the components of a research report (10marks)
- b) Explain the features of good research (4marks)
- c) Discuss the features of a good research presentation. (6marks)

QUESTION FIVE

Following the massive exploration of oil in Turkana, there is speculation that there could be serious environmental effects of this process. Design a concept note to illustrate your desire to carry out a study in this area.

(20marks)