



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

INSITUTIONAL BASED PROGRAMME (DECEMBER SESSION)

EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE

SCH 550: RESEARCH METHODOLOGY

DATE: Friday 29th April 2011

TIME: 9.00a.m – 12.00p.m

INSTRUCTIONS: Answer ALL Questions.

- Q1. a) i) Explain the steps of identifying a research problem.
ii) Briefly discuss the purposes of writing a research proposal. [10marks]
- b) Outline the main components of a research proposal, briefly explaining each component. [10marks]
- c) Reference is an important section in a research project.
i) Explain the purpose of this section in a report.
ii) Briefly discuss the different types of citing references in a research report or thesis. [8marks]
- Q2. a) i) Describe the steps followed in designing an experimental process.
i) Explain what you understand by interactive and additive effects of experimental factors. [8marks]
- b) i) Explain the importance of carrying out method validation before analysis.

- ii) Although correlation coefficient factor, r is used to determine the relationship between variables, it experiences certain challenges. Discuss these challenges. [10mark]
- c) Describe the processing of determining quality control in the process operation of an industrial process. [5marks]

- Q3. a) Four standard solutions were prepared, each containing 16.00% chloride, by weight. Three titration methods, each with a different technique of end point were used to analyses each standard solution. The order of experimentation was randomized. The results obtained (%) were:

Solution	Method		
	A	B	C
1	16.03	16.13	16.09
2	16.05	16.13	16.15
3	16.02	19.94	16.12
4	16.12	15.97	16.10

- i) Test whether there is a significant difference between the concentration of chloride in the different solutions.
- ii) Test whether there is a significant difference between the results obtained by the different methods. [10marks]
- b) i) Explain what causes some instrumental results to below detection limit and how such results are treated. [7marks]