



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

**ACH 4301: QUALITY CONTROL ASSURANCE AND
WASTE MANAGEMENT**

SPECIAL/SUPPLEMENTARY EXAMINATION

MARCH 2014 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

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

QUESTION ONE

- a) (i) Write the acronym, 'ISO' in full **(1mark)**
- (ii) State the quality standards responsible for the following:
- I. Quality management systems and requirements **(2marks)**
- II. General requirements for the competence of testing and calibration laboratories
(2marks)
- III. The performance of a study that ensures the production of reliable results.
(2marks)

- b) Outline THREE values of quality planning **(3marks)**
- c) (i) Write the following acronym in full, 'CRM' **(1mark)**
(ii) Explain the term, 'CRM' mentioned in c (i) above **(2marks)**
- d) (i) Write the term, 'GMPS' in full **(1mark)**
(ii) Explain the role of GMPs mentioned in d(i) above **(2marks)**
- e) Outline FOUR uses of records in the laboratory **(2marks)**
- f) Explain the meaning of the following terms:-
(i) Repeatability **(2marks)**
(ii) Reproducibility **(2marks)**
- g) State FOUR types of control samples used for quality assurance during internal laboratory control **(2marks)**
- h) Explain the following terms:
(i) Judgment sampling **(3marks)**
(ii) A sub-sample **(3marks)**

QUESTION TWO

- a) (i) Write the term, 'HHWs' in full **(1mark)**
(ii) Define the term, 'HHWs' mentioned in a(i) above **(2marks)**
- b) (i) Outline FOUR sources of HHWs mentioned in a (i) above **(4marks)**
(ii) State THREE examples of each the three examples of the sources of HHWs **(13marks)**

QUESTION THREE

Explain the following quality standards:

- a) ISO 9001 **(6marks)**
- b) ISO /IEC 17025 **(7marks)**
- c) GLPs **(7marks)**

QUESTION FOUR

- a) Define the following according to the Association of official Analytical chemists (AOAC) international:
- (i) Quality management systems (QMS) **(2marks)**
 - (ii) Quality control (QC) **(2marks)**
 - (iii) Quality Assurance (QA) **(2marks)**
- b) (i) State the FOUR most important aspects that are demonstrated by QC in an investigated method **(4marks)**
- (ii) Explain each of the aspects demonstrated by QC mentioned in b(i) above **(8marks)**
- (iv) Outline any TWO applications of RMS **(2marks)**

QUESTION FIVE

- a) State one disadvantage of a shewhart chart. **(3marks)**
- b) Explain how the moving average chart can alleviate the problem of shewhart chart **(6marks)**
- c) Explain the term, 'laboratory best practise' **(11marks)**