



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

BTAP13 / BTRE13 / BSFQ13

ACH 4104: LABORATORY SAFETY AND MANAGEMENT

SEMESTER EXAMINATION

DECEMBER 2013 SERIES

2 HOURS

Instructions to candidates:

This paper consist of **FIVE** questions

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

QUESTION ONE

- a) Give **THREE** main causes of fire in the laboratory **(3 marks)**
- b) State **THREE** ways in which danger from glass equipment may arise **(3 marks)**
- c) (i) Define the term “Carcinogen” **(1 mark)**

(ii) State **TWO** ways in which carcinogens mentioned in (ci) above can be controlled **(2 marks)**
- d) (i) Explain the hazard associated with acids and alkalies **(1 mark)**

(ii) Explain how to prevent the hazard associated with acids and alkalies as mentioned in (d(i)) above **(2 marks)**
- e) (i) State the **THREE** elements of fire **(3 marks)**

(ii) Illustrate the fire triangle **(1 mark)**

f) State any four roles of a safety officer **(4 marks)**

g) Explain the THREE importances of safety in the laboratory **(6 marks)**

h) Name the TWO types of purchasing systems in an organization **(2 marks)**

i) Give TWO hazards associated to laboratory animals **(2 marks)**

QUESTION TWO

Considering infection as the hazard posed by microorganisms discuss the precautions against infection under the following;

a) Safe persons behavior **(10 marks)**

b) Safe handling of specimen **(10 marks)**

QUESTION THREE

a) List FIVE types of fire extinguishers. Explaining the use of each **(10 marks)**

b) Name and explain the use of THREE firefighting equipment other than fire extinguisher that should be in the laboratory **(6 marks)**

c) Draw the structure of any named fire extinguisher **(4 marks)**

QUESTION FOUR

a) Explain FIVE factors to be considered in designing and planning a laboratory **(10 marks)**

b) With the help of diagrams discuss the three major laboratory layouts **(10 marks)**

QUESTION FIVE

a) What do the initial GLP stand for in the laboratory management. **(1 mark)**

b) Define a quality assurance program as per GLP **(1 mark)**

c) List THREE requirements for a quality assurance programme **(3 marks)**

d) State and explain SIX responsibilities of the quality assurance personnel according to GLP **(12 marks)**

e) State the THREE inspections in quality Assurance programmes based in GLP **(3 marks)**