



# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

*Faculty of Applied & Health Sciences*

DEPARTMENT OF PURE AND APPLIED SCIENCES

**DIPLOMA IN SCIENCE LABORATORY TECHNOLOGY**

END OF SEMESTER EXAMINATION

**LABORATORY SAFETY AND ETHICS**

**SERIES: AUGUST/SEPTEMBER 2011**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

- *Answer booklet*

Answer question **ONE (COMPULSORY)** and choose any other **TWO** questions

This paper consist of **THREE** printed pages

### QUESTION ONE (COMPULSORY) – 30 MARKS

- a) State **FOUR** general safety precautions regarding toxic compounds (4 marks)
- b) State **FOUR** precautions to be taken when handling caustic liquids (4 marks)
- c) State **FOUR** Criteria used to determine if a compound is a health hazard (4 marks)
- d) Why laser radiation is potentially dangerous to eye (retina) (4 marks)
- e) State **FOUR** sources of injurious radiation in laboratory (4 marks)
- f) Define the following terms:
  - i) Compressed gas
  - ii) Non-liquefied gases (4 marks)
- g) Briefly explain how you can maintain your first-aid kit in good working condition (4 marks)
- h) Why dangling neckties, unrestrained long hair not allowed in lab during practical (2 marks)

### QUESTION TWO

- a) State **FIVE** common source of hazards encountered in the laboratory (5 marks)
- b) Explain how each of the above mentioned hazards can be prevented in the lab (15 marks)

### QUESTION THREE

- a) State the **FIVE** major families of gases (5 marks)
- b) State **FIVE** general safety precautions regarding the use, handling of gases (5 marks)
- c) State the general safety precautions necessary for the handling and storage of corrosive (10 marks)

### QUESTION FOUR

- a) Suppose you are a head of department of pure and applied science of newly established university, state **TEN ROLES** you would assign to lab assistant (10 marks)
- b) Briefly explain how you can avoid accidental ingestion of chemicals in laboratory (4 marks)
- c) What should you do in case of large chemical spills on the lab benches or floor:
  - (i) If the material is volatile, flammable or toxic (3 marks)
  - (ii) If the material is not particularly volatile, nor toxic and poses no fire hazard (3 marks)

## QUESTION FIVE

- a) Explain the following as regards the handling of acids in the laboratory
- (i) State **ONE** precautions to be taken when diluting acid by pouring (1 mark)
  - (ii) Steps to be taken when chemicals spill on person; over a large area, small area and in the eye (9 marks)
- b) Explain how you can clean the following chemical spill; Acid and Mercury spill (6 marks)
- c) Define the following terms: flammable liquid and combustible liquid (4 marks)