



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF JKUAT)

(A Centre of Excellence)

Faculty of Applied and Health Sciences

DEPARTMENT OF **ENVIRONMENT AND HEALTH SCIENCE**

DIPLOMA IN ENVIRONMENTAL SCIENCES

(DES 12S)

AES 2103: INTRODUCTION TO LABORATORY METHODS FOR CONSERVATIONIST

SPECIAL/SUPPLEMENTARY: EXAMINATIONS

SERIES: February 2013

TIME: 2 HOURS

INSTRUCTIONS:

You should have the following for this paper

- *Answer booklet*

This paper consists of **FIVE** questions.

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

This paper consists of 3 PRINTED pages

Question ONE

- a) Explain the information that a laboratory designer is expected to possess during the initial stage of designing a laboratory. **(4marks)**
- b) (i) Enumerate at least three(3) reasons for having sinks installed in a laboratory **(3marks)**
(ii) Draw and explain the wear system of sink **(4marks)**
(iii) State at least three reasons for installing catch pots or troughs below sinks. **(3marks)**
- c) Balance room requires careful installation. Explain **(4marks)**
- d) State at least FOUR types of laboratory bench tops **(4marks)**
- e) Describe the first-aid for a colleague who has fainted in the course of work. **(4marks)**
- f) The following items are found in a first-aid box. Explain their purpose
 - (i) Aspirin **(1mark)**
 - (ii) Dried milk **(1mark)**
 - (iii) Medicated charcoal **(1mark)**
 - (iv) Mustard **(1mark)**

Question TWO

- a) Draw and explain the use of four types of glassware used in laboratory. **(4marks)**
- b) Explain
 - (i) Safety precautions observed in carrying glass ware in the laboratory. **(2marks)**
 - (ii) How dirty glassware contaminated with obstinate dirt is made clean. **(4marks)**
 - (iii) Type of hazards emanating from glass-ware handling and safety precaution to be observed. **(3marks)**

Question THREE

- a) Describe at least eight items in a first-aid room and their use **(4marks)**
- b) (i) Explain the term poison **(2marks)**
(ii) Explain briefly the routes through which poisons enter the bodies **(4marks)**
- c) An accident victim shows the following symptoms
 - Shallow breathing
 - Weak, short and rapid pulse
 - Cold sweat
 - Nausea
 - Confusion
 - (i) Identify this condition **(1mark)**
 - (ii) Describe how the victim in c(i) above can be assisted. **(4marks)**

Question FOUR

- a) Explain the use of at least four types of safety wear used in a laboratory. **(4marks)**
- b) Explain the following terms used in first-aid treatment
 - (i) Emetic **(2marks)**
 - (ii) Demulcent **(2marks)**
 - (iii) Laxative **(2marks)**
 - (iv) Antidote **(2marks)**
- c) Discuss the first-aid treatment for a victim who has accidentally swallowed corrosive poison. **(3marks)**

Question FIVE

- a) A glassware like pipette has the following inscription written on it. Discuss their meaning:-
- (i) TC,EX,IN,TD and Ex-blown **(5marks)**
- b) (i) Distinguish between a dry burn and a wet burn. **(3marks)**
- (ii) Describe the first-aid treatment for a first-degree burn. **(3marks)**
 - (iii) Outline how an electrical wire with three wires, lives, neutral and earth can be connected to a 3-pin plug. **(4marks)**