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ENVIRONMENTAL LABORATORY PRACTICE
Oct./Nov. 2018
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY

MODULE 1

ENVIRONMENTAL LABORATORY PRACTICE

3 hours

easynet.com



INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:

answer booklet;

non-programmable scientific calculator.

This paper consists of TWO Sections; A and B.

Answer ALL the questions in Section A and any THREE questions from Section B in the answer booklet provided.

Each question in Section A carries 4 marks while each question in Section B carries 20 marks.

Maximum marks for each part of a question are as indicated.

Candidates should answer the questions in English.

This paper consists of 3 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.



SECTION A (40 marks)

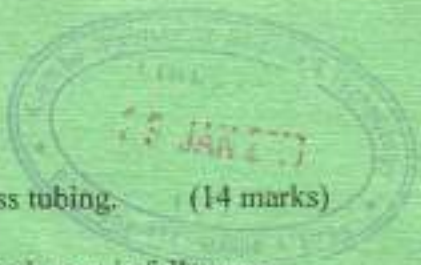

Answer **ALL** the questions in this section.

1. Name **four** chemicals used to disinfect water in the laboratory. (4 marks)
2. Identify **four** contents on the labels of laboratory chemicals. (4 marks)
3. Outline the procedure for cleaning a pipette stained with blood samples. (4 marks)
4. List **four** likely causes of failure of a spectrographic equipment to power up. (4 marks)
5. With the aid of a diagram, outline the procedure of bending glass tubing. (4 marks)
6. Describe the first aid procedure administered on a victim exposed to hydrochloric acid splash in the eye. (4 marks)
7. List **four** extraneous forces which can affect the accuracy of analytical balance. (4 marks)
8. Outline the first aid procedure to be administered to a victim who inhaled chlorine gas. (4 marks)
9. List any **four** factors that determine the choice of flooring material in the laboratory. (4 marks)
10. State **four** safety measures to be undertaken when a flammable gas leaks in the laboratory. (4 marks)

SECTION B (60 marks)

Answer any **THREE** questions from this section.

11. (a) Explain **five** precautions that a laboratory staff should observe when using a wall socket connected to an electrical equipment. (10 marks)
- (b) With the aid of a diagram, describe the process of deionizing stream water for use in the laboratory. (10 marks)
12. (a) With the use of a labelled diagram, describe the components of a sink trap. (10 marks)
- (b) With the aid of a diagram, explain how to unblock a sink trap using the following:
 - (i) a plunger; (5 marks)
 - (ii) emptying the sink trap. (5 marks)

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13. (a) Outline the procedure for producing a pasteur pipette from glass tubing. (14 marks)
- (b) Draw a labelled diagram of a burning bunsen burner when the air port is fully open. (6 marks)
14. (a) Explain **three** advantages of providing good ventilation in the laboratory. (6 marks)
- (b) Describe **three** sources of ventilation in the laboratory. (6 marks)
- (c) Explain **four** disadvantages of using glazed tiles on laboratory floors. (8 marks)
15. (a) Describe **five** biological materials that are hazardous in the laboratory. (10 marks)
- (b) Outline the procedure for preparing 1 g in 100 mL aqueous methylene blue stain. (10 marks)
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