

Name: \_\_\_\_\_

Index No: \_\_\_\_\_

1528/014

2022/204

ENVIRONMENTAL ANALYTICAL  
TECHNIQUES AND LABORATORY  
MANAGEMENT

Oct/Nov. 2014

Time: 3 hours

Candidate's Signature: \_\_\_\_\_

Date: \_\_\_\_\_



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN ENVIRONMENTAL SCIENCE AND TECHNOLOGY

MODULE II

ENVIRONMENTAL ANALYTICAL TECHNIQUES AND LABORATORY MANAGEMENT

3 hours

INSTRUCTIONS TO CANDIDATES

Write your name and index number in the spaces provided.

Sign and write the date of examination in the spaces provided.

You should have a non-programmable scientific calculator for this examination.

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 spaces provided in this question paper.

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

Candidates should answer the questions in English.

For Examiner's Use Only

SECTION A										Total	
Question	1	2	3	4	5	6	7	8	9		10
Candidate's score											

SECTION B						Grand Total
Question	11	12	13	14	15	
Candidate's score						

This paper consists of 16 printed pages.

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

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Turn over

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Answer ALL the questions in this section in the space provided.

Name: Four (writing technique) (10 marks)

(ii) Two solvents are equally suitable for recrystallization process. State two factors of preference in choosing one of them. (2 marks)

1. Explain the reason for sublimation of dry ice. (2 marks)

(b) Give two disadvantages of sublimation as a separation technique. (2 marks)

Explain two factors that govern the type of solvent used in Soxhlet extraction. (4 marks)

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501. Explain how a leader can be effective in the presence of a crisis. (10 marks)

2. State four reasons why the approach of a manager is important in the context of the organization. (4 marks)

3. Name four basic elements of a central organizational structure. (4 marks)

4. (a) Explain the term 'matrix structure'. (4 marks)

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(b) State three reasons that make people accept authority. (3 marks)

10. Name the type of management style that is ineffective when:

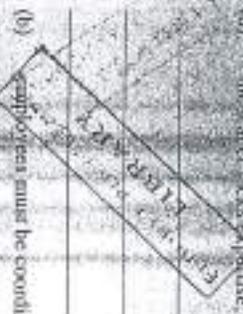
(a) the workers are apathetic. (1 mark)

(b) employees must be coordinated. (1 mark)

(c) employees are highly skilled. (1 mark)

(d) the leader is not credible. (1 mark)

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SECTION 15 (continued)

Answer each of the following questions in the space provided. Show your work.

- (c) Explain the difference between a physical and a chemical change.
- (d) Calculate the percent yield of the reaction between potassium permanganate and hydrochloric acid.
- (e) Write the balanced chemical equation for the reaction between aluminum and hydrochloric acid.
- (f) Calculate the molar mass of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (g) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (h) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (i) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (j) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
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- (s) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (t) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (u) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (v) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (w) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (x) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (y) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .
- (z) Calculate the percent composition of the compound  $\text{C}_2\text{H}_6\text{O}$ .



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