

2404/306

2407/306

2411/306

LABORATORY PRACTICE AND MANAGEMENT

June/July 2021

Time: 3 Hours

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THE KENYA NATIONAL EXAMINATIONS COUNCIL

**DIPLOMA IN APPLIED BIOLOGY**  
**DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY**  
**DIPLOMA IN ANALYTICAL CHEMISTRY**

LABORATORY PRACTICE AND MANAGEMENT

**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*You should have the following for this examination:*

*Answer booklet;*

*Battery operated 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.*

*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 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.**

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## SECTION A (40 marks)

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

1. Describe disposal of liquid nitrogen. (4 marks)
2. Explain gas ballasting in a vacuum pump. (4 marks)
3. State the colour code for the following gas shoulders:
  - (a) hydrogen; (1 mark)
  - (b) nitrous oxide; (1 mark)
  - (c) nitrogen; (1 mark)
  - (d) oxygen. (1 mark)
4. Distinguish between requisition note and purchase order. (4 marks)
5. Calculate the amount required to prepare 500 cm<sup>3</sup> of 0.2 M of KOH. (4 marks)  
(K = 39, H = 1 and O = 16)
6. Outline first aid treatment of a victim who has swallowed pesticide. (4 marks)
7. State **four** requirements for installation of a mercury barometer in a laboratory. (4 marks)
8. State any **four** functions of management. (4 marks)
9. Explain any **four** advantages of using committee as a tool of management in an organisation. (4 marks)
10. Outline the procedure of collecting blood from mice tail. (4 marks)

## SECTION B (60 marks)

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

11. (a) Explain **five** steps of decision making. (10 marks)
- (b) Draw a labelled diagram of a rotary vane/sealed pump. (10 marks)
12. (a) Outline dilution of 12 M hydrochloric acid. (8 marks)
- (b) State any **four** signs of Asphyxia. (4 marks)
- (c) Describe the use of film badge in measuring radiation exposure. (8 marks)

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13. (a) Explain the **three** phases of management by crisis. (9 marks)

(i) radioactive; (3 marks)  
(ii) flammable; (3 marks)

(ii) flammable chemicals. (3 marks)

(c) Describe proper storage of the following chemicals:

(i) phosphorous; (3 marks)  
(ii) potassium

(ii) potassium. (5 marks)

(2 marks)

14. (a) Describe the removal of foreign object/particle from an eye. (6 marks)

(b) Draw a labelled characteristic curve of a high sensitive film. (6 marks)

(c) State any **five** factors that can affect accuracy of an analytical balance. (5 marks)

(d) Distinguish between dispute of interest and dispute of right in labour law. (3 marks)

15/ (a) Outline steps for cleaning a spill in the biosafety cabinet. (10 marks)

(b) State any **five** disadvantages of chromic acid as a cleaning reagent. (5 marks)

(c) Outline any **five** information contained in a catalogue as a purchase document. (5 marks)

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$$\begin{array}{r} 25.5 \\ \underline{2} \\ 510 \end{array}$$

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