EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

PHYSICAL SCIENCE **6888/03**

Paper 3 Practical Test **October/November 2024**

CONFIDENTIAL INSTRUCTIONS

Great care should be taken that any confidential information given does not reach the candidates either directly or indirectly.

The Supervisor's attention is drawn to the form on page 7 which must be completed and returned with the scripts.

This document consists of **7** printed pages and **1** blank page.

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Instructions for preparing apparatus

These instructions give details of the apparatus required by each candidate for each experiment in this paper. A summary of the questions that will be presented to the candidates is included, where appropriate, to allow the Physical Science teacher who is the supervisor to test the apparatus appropriately.

No access to the question paper is permitted in advance of the examination session.

If a candidate breaks any of the apparatus, or loses any of the material supplied, the matter should be rectified and a note made in the Supervisor's report.

It is assumed that the ordinary apparatus of a science laboratory will be available, including a supply of purified water (distilled or deionised).

If arrangements are made for different sessions for different groups of candidates, care must be taken to ensure that the different groups of candidates are effectively isolated so that **no information passes between them**.

Supervisors are advised to remind candidates that **all** substances in the examination should be treated with caution. Pipette fillers and safety goggles should be used where necessary.

C = corrosive substance
F = highly flammable substance
H = harmful or irritating substance
O = oxidising substance
T = toxic substance

Instructions for preparing apparatus

For Question 1

Each candidate will require:

(i) 1 × polystyrene cup containing 50 cm^3 of 1 M copper(II) sulfate solution **[C]**

(ii) 3 g × zinc granules

(iii) 1 × thermometer

(iv) 1 × dropper

(v) 2 cm^3 of 1 M barium nitrate **[O][H]** solution labelled as such

(vi) 2 cm^3 of 0.7 M nitric acid solution **[H]** labelled as such

(vii) 1 × stopwatch

(viii) 1 × filter funnel

(ix) 1 × filter paper

(x) 1 × conical flask

(xi) 1 × 50 cm^3 beaker

(xii) 1 × 250 cm^3 beaker or any suitable container containing tap water labelled **'rinsing water'**

(xiii) 1 × 250 cm^3 beaker or any suitable container labelled **'waste disposal'**

Notes:

Prepare the solutions as follows:

(a) **1 M copper(II) sulfate** – Dissolve 249.5 g of hydrated copper(II) sulfate **[C]** in each dm^3 of distilled water.

(b) **1 M barium nitrate** – Dissolve 261 g of barium nitrate **[O][H]** in 1 dm^3 of distilled water.

(c) **0.7 M nitric acid solution** – Dilute 44.8 cm^3 of 70% nitric acid **[C][O]** into a dm^3 of solution.

For Question 2

Each candidate will require:

(i) clamp on a retort stand

(ii) 1 × 250 cm^3 glass measuring cylinder or 500 cm^3 beaker

(iii) 1 × spring balance with accuracy of 0.1 N

(iv) 1 × 20 cm string

(v) 1 × stopper

(vi) 1 × test-tube marked into six equal divisions (150 mm by 25 mm)

(vii) access to water

(viii) 1 map pin

Notes:

For each candidate:

- Make a loop, using the string, that can be used to suspend the test-tube.
- Mark the test-tube into five equal divisions using a permanent marker.
- Label the markings as 1, 2, 3, 4 and 5.
- Set-up of the test-tube as shown in Fig. 2.1.

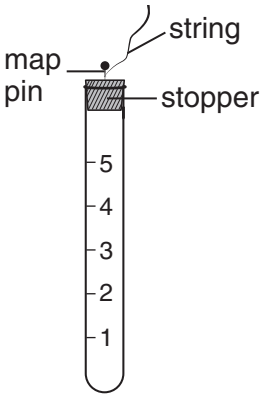

Fig. 2.1

- Suspend the spring balance on the retort stand as shown in Fig. 2.2.

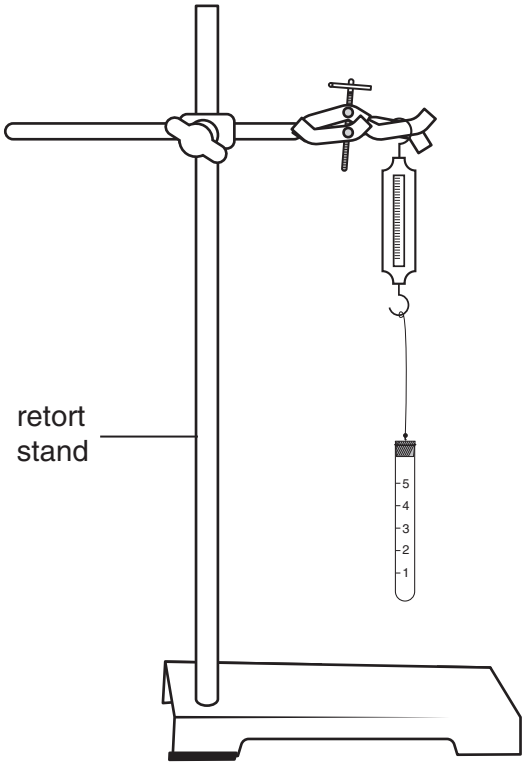

Fig. 2.2

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Information required from the Supervisor:

The Supervisor is asked to carry out the experiments and to enter the results on a spare copy of the examination paper, clearly marked 'Supervisor's Results' and showing the Centre number. This should be returned with the scripts. Failure to do so may cause the candidates to be penalised.

REPORT ON PRACTICAL PHYSICAL SCIENCE

October/November 2024 Examination

This form must be completed and returned in the envelope with the scripts together with the seating plan and the Supervisor's results.

General

The supervisor is invited to give details of any difficulties experienced by particular candidates, giving their names and candidate numbers. These should include reference to:

(a) difficulties due to faulty apparatus;

(b) accidents to apparatus or materials;

(c) physical disabilities, e.g. short sight, colour blindness;

(d) any other information that is likely to assist the Examiner, especially if this cannot be discovered in the scripts;

(e) any help given to a candidate.

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The supervisor is asked to supply the following information:

Plan of work benches, giving details by candidate number of the places occupied by the candidates for each session and a copy of the 'Supervisor's Results'.

NAME OF CENTRE .....

CENTRE NUMBER .....

NAME(S) OF SUPERVISOR(S) .....

.....

DECLARATION (to be signed by the Head of Centre)

The preparation of this practical examination has been carried out so as to maintain fully the security of the examination.

NAME .....
(in block letters)

SIGNED ..... (Head of Centre)

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