EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

PHYSICAL SCIENCE **6888/03**

Paper 3 Practical Test **October/November 2021**

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.

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

For Question 1

Each candidate will require

(i) 2 test-tubes labelled **A** and **B** in a test-tube rack

(ii) 1 boiling test-tube labelled **C** in the test-tube

(iii) 1 test-tube labelled **D** containing ¼ full limewater

(iv) 1 retort stand

(v) 1 beaker

(vi) 1 × test-tube holder/tongs

(vii) 1 × dropper

(viii) 1 × stirring rod

(ix) 1 × stopper fitted with a delivery tube. The stopper must fit test-tube **C**

(x) 1 × 500 cm^3 plastic bottle with carbon dioxide labelled as such (use water bottle)

(xi) 1 × test-tube containing carbon dioxide labelled as such and always in an upright position in the test-tube rack

(xii) 2 × 10 cm^3 measuring cylinder

(xiii) 1 × 50 cm^3 measuring cylinder

(xiv) access to water

(xv) access to a Bunsen burner

(xvi) access to a clock

(xvii) pH chart with Universal Indicator solution

(xviii) 5 cm^3 aloe juice labelled **A**

(xix) 20 g copper(II) carbonate, labelled **B**

(xx) 100 cm^3 distilled water

(xxi) access to a spatula similar to a teaspoon

(xxii) protective clothing including safety goggles and laboratory coats

[Turn over

Note

Set-up apparatus shown in Fig. 1.1.

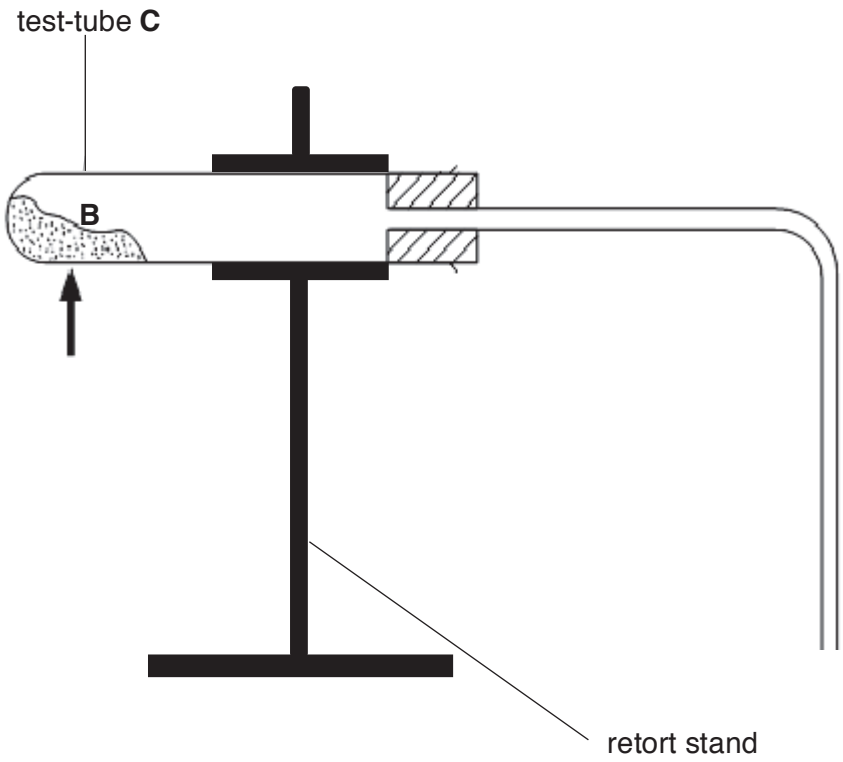


Fig. 1.1

For substance **B**, add about 3 spatula-full.

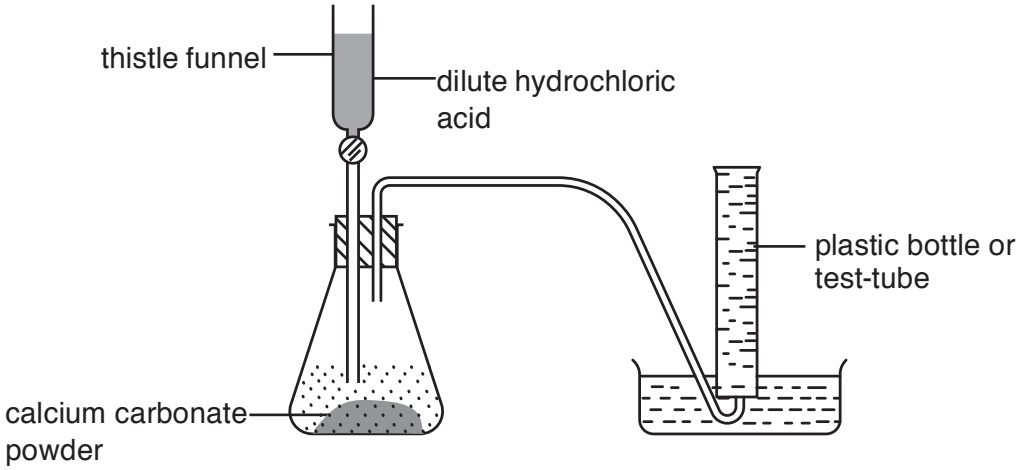


Fig. 1.2

- Teachers should prepare two samples of carbon dioxide gas, one in a closed plastic bottle and another in a stoppered test-tube per candidate. The plastic bottle should be flexible (easy to compress). The bottle should be between 300 cm^3 to 500 cm^3.
- To prepare carbon dioxide, you may react calcium carbonate powder with 2M hydrochloric acid as shown in Fig. 1.2.
- Other methods of preparing carbon dioxide are also acceptable.

Preparation of aloe juice

- To prepare aloe juice, add distilled water to sliced aloe leaves.
- This can be prepared the day before the practical.
- Wear gloves before slicing the aloe leaves.

For Question 2

Each candidate will require:

(i) 1 × retort stand

(ii) 1 × boss and clamp

(iii) thin string able to lift more than 1 kg

(iv) 1 × 1 kg mass having a plane bottom

(v) 3 × 1.60 mm x 75 mm nail

(vi) 1 × 8 cm sunlight bar soap

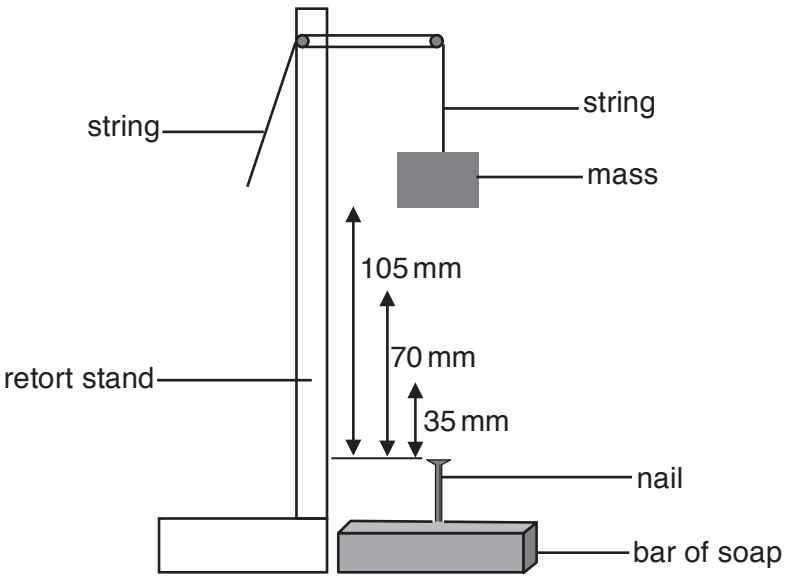
(vii) 1 × ruler (15 cm/30 cm)

(viii) 3 × stickers labelled 35 mm, 70 mm, 105 mm

(ix) 1 × permanent marker with a sharp tip

Note

- Place stickers at 35 mm, 70 mm and 105 mm heights from the top of the nail.
- For each candidate, the Supervisor must set up the apparatus as shown in the diagram.



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

OCTOBER/NOVEMBER 2021

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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