

NAMIBIA SENIOR SECONDARY CERTIFICATE

CHEMISTRY ADVANCED SUBSIDIARY LEVEL

8224/3

PAPER 3 Advanced Practical Skills

2022

SUBJECT TEACHERS CONFIDENTIAL INSTRUCTIONS

- This document gives details of how to prepare for and administer the practical exam.
- The information in this document and the identity of any materials supplied by DNEA are confidential and must NOT reach candidates either directly or indirectly.

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



Republic of Namibia

MINISTRY OF EDUCATION, ARTS AND CULTURE

Instructions for the Chemistry Advanced Practical Skills Invigilator

A Assistance to candidates

The purpose of the Chemistry practical test is to assess the candidates' ability to apply their skills related to practical work. This is done by requesting the candidates to perform simple Chemistry experiments in the laboratory. Therefore, the candidates' ability to do practical work should not be hindered by the failure of apparatus. In order to overcome difficulties that candidates might experience during the practical test, the invigilator should, (or allow the Chemistry teacher to), assist candidates in cases where equipment is malfunctioning, or materials are not giving the expected results. Teachers should test the equipment like Bunsen burners regularly in advance.

The following regulations must be strictly adhered to.

- No assistance may be announced to the whole class.
- A candidate who is unable to proceed and require assistance must inform the invigilator and state the difficulty.
- A report must be written of any assistance given to a candidate, with the Candidate Name and Candidate Number.

B Number of sets of apparatus

Each work station should have enough equipment for one candidate at the beginning of each practical session. Candidates are not allowed to share equipment unless stated differently in the equipment list. It is advisable to have a few spare sets to avoid candidates from being delayed due to malfunctioning equipment.

The order in which a candidate attempts the questions is unimportant.

(For further instruction, see attached brief Guide of Invigilator's instructions)

Question 1

Each candidate should be provided with the following:

Apparatus

1 For each candidate

- 1 × 25 cm³ pipette
- Pipette fillers (or equivalent safety devices), suitable eye protection, lab coats and disposable gloves should be used where necessary.
- 1 × 250 cm³ volumetric flask
- 1 × wash bottle filled with distilled water
- 1 × 50 cm³ burette
- 2 × 250 cm³ conical flasks
- 1 × small funnel (for filling burette)
- 1 × white tile
- 1 × retort stand and burette clamp
- Paper towels
- 2 to 4 sheets / squares of kitchen paper
- 1 × permanent marker

Chemicals

hazard	label	per candidate	identity	preparation notes: (hazards given in this column are for the raw materials)
[C]	A	100 cm ³	0.100 mol dm ⁻³ sodium hydroxide	Dissolve 4.00 g of NaOH [C] in each dm ³ of solution.
[MH]	B	50 cm ³	1.00 mol dm ⁻³ hydrochloric acid	See preparation instructions in the current syllabus.
[F] [HH]	methyl orange indicator	20 cm ³	methyl orange indicator (pH range 2.9 to 4.6)	See preparation instructions in the current syllabus.

[C] = corrosive

[MH] = moderate hazard

[F] = flammable

[HH] = health hazard

Question 2

Each candidate should be provided with the following:

Apparatus**2 For each candidate**

- 2 × 250 cm³ polystyrene (foam-light) cups
- 3 × 250 cm³ beakers
- 1 × 50 cm³ measuring cylinder
- 1 × thermometer, 0 to +110°C, with 1 °C graduations
- balance, single-pan, direct reading, **minimum** accuracy 0.1 g weighing to 200 g
- 1 × glass rod
- 2 × spatulas (spoon-end or chattaway)

Chemicals

hazard	label	per candidate	identity	preparation notes: (hazards given in this column are for the raw materials)
[MH]	B	150 cm ³	1.00 mol dm ⁻³ hydrochloric acid	See preparation instructions in the current syllabus.
	D	1.1 g to 1.2 g	calcium oxide powder	Provide 1.1 g to 1.2 g to each candidate.
	E	1.9 g to 2.0 g	calcium carbonate powder	Provide 1.9 g to 2.0 g to each candidate.

[MH] = moderate hazard

Question 3

Each candidate should be provided with the following:

Apparatus**3 For each candidate**

- 1 × wash bottle filled with distilled water
- 2 × test-tubes
- 1 × gas burner (DO NOT use a spirit burner)
- 2 × boiling tubes
- 1 × test-tube holder
- 1 × permanent marker
- 1 × blue litmus paper
- 1 × red litmus paper

Chemicals

hazard	label	per candidate	identity	preparation notes: (hazards given in this column are for the raw materials)
[O]	F	2 spatula measures	chromium(III) nitrate	2 spatula measures of $\text{Cr}(\text{NO}_3)_3$ [MH] in a stoppered container to each candidate

[O] = oxidising agent, please use gloves.

ADDITIONAL MATERIALS FOR QUESTION 3

- anhydrous copper(II) sulphate, 10 g per candidate
- aqueous sodium hydroxide, 0.1 mol dm⁻³
- aqueous ammonia, 50 ml per candidate
- aluminium foil, 2 cm × 2 cm, one piece per candidate
- aluminium ribbon, 2 cm long, one piece per candidate

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REPORT FORM
Republic of Namibia
NAMIBIA SENIOR SECONDARY CERTIFICATE ADVANCED SUBSIDIARY

CHEMISTRY**8224/3**

PAPER 3 Practical Test

Question Paper & Examination Security Declaration

Region.....Date.....

Centre Number.....Centre Name.....

Principal (full name, print).....

Head of Examination Centre (full name, print).....

Hereby it is certified that this examination was conducted under appropriate measures and conditions as stipulated in the 'Rules & Regulations for the NSSC Examinations'.

Attached are the following details;

1 Subjects Teacher's Results

*Please submit details of the readings obtained in **all the questions** on a spare copy of the question paper clearly marked '**Subject Teacher's Results**' and showing the Centre Number.*

*It is essential that each packet of candidates' scripts contains a copy of the applicable '**Subject Teacher's Results**' as the candidates' work cannot be assessed accurately without such information.*

2 The Candidate Numbers of candidates attending each session were:

Please write them in their sitting order.

First Session	Second Session	Third Session



- 3 The supervisor is required to give details of any difficulties experienced by particular candidates, giving Candidates' Names and Numbers. This should include any reference to:
- any general difficulties encountered in making preparation
 - difficulties due to faulty apparatus or materials
 - accident to apparatus or materials
 - assistance with respect to colour-blindness

Other cases of hardship, e.g. illness, temporary disability, should be reported directly to DNEA through the regional offices on the normal ' Application for Special Consideration' form.

Report on any difficulties experienced by candidates.

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Principal's Signature & Date:

Head of Examination Centre's Signature & Date:.....

Subject Teacher's Full Name:

Subject Teacher's Signature & Date:

Supervisor's Signature & Date: