



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

**T1280(E)(A16)T
APRIL EXAMINATION**

NATIONAL CERTIFICATE

PLUMBING THEORY N1

(11022041)

**16 April 2015 (Y-Paper)
13:00–16:00**

**This question paper consists of 4 pages and a 1 diagram sheet and
2 plumbing schedules.**

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
PLUMBING THEORY N1
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. Write neatly and legibly.
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QUESTION 1

- 1.1 Briefly explain the main objective of the National Health and Safety Act. (2)
- 1.2 Name TWO responsibilities of a safety officer. (2)
- 1.3 Give FOUR causes of accidents. (4)
- [8]**

QUESTION 2

- 2.1 Describe with aid of sketches how a mushroomed cold chisel should be grind to a safe working tool. (5)
- 2.2 Show by means of sketch how a double insulation is represented in power tools. (3)
- 2.3 Explain the term *hardening* and *tempering* when related to tool steel. (4)
- [12]**

QUESTION 3

- 3.1 Define the following terminology:
- 3.1.1 Tenacity
- 3.1.2 Malleability
- 3.1.3 Brittleness
- (3 × 2) (6)
- 3.2 Choose the main element from COLUMN B that matches an alloy in COLUMN A. Write only the letter (A–D) next to the question number (3.2.1–3.2.4) in the ANSWER BOOK.

COLUMN A		COLUMN B
3.2.1	Brass	A iron and carbon
3.2.2	Soft solder	B copper and tin
3.2.3	Steel	C copper and zinc
3.2.4	Bronze	D lead and tin

(4 × 1) (4)
[10]

QUESTION 4

- 4.1 Briefly explain the process of tinning. (4)
- 4.2 List SIX components of gas welding plant and FOUR components of arc welding. (5)
[9]

QUESTION 5

- 5.1 Draw a sketch to illustrate the cold water supply from local authority to consumer and label all the pipe systems. (10)
- 5.2 Label parts of a stop cock in DIAGRAM SHEET 1 and show direction of flow. (7)
[17]

QUESTION 6

- 6.1 Explain TWO causes of water hammers and explain THREE methods to remedy them. (5)
- 6.2 Draw a sketch of a combination geyser and label parts 1–6 in the ANSWER BOOK. (15)
[20]

QUESTION 7

- 7.1 With aid of sketches show the difference between earthenware joint and cast iron joint. (4)
- 7.2 Draw a single-stack system in two storey building. (6)
[10]

QUESTION 8

- 8.1 Calculate the volume and capacity in litres of a hot-water cylinder with following dimensions: height 3 m and diameter 600 mm. (7)
- 8.2 The intensity of water at main at your house is 300 kN/m^2 .
What head creates this pressure? (7)
[14]

TOTAL: 100

DIAGRAM SHEET 1



