higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T1250(E)(M24)T
APRIL EXAMINATION

NATIONAL CERTIFICATE

PLUMBING THEORY N1

(11022041)

24 March 2014 (Y-Paper)
13:00–16:00

This question paper consists of 5 pages.

ENGINEERING

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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 The National Health and Safety Act requires that where twenty or more people are employed, a safety officer must be appointed.

State TWO main responsibilities of the safety officer. (2 × 2) (4)

1.2 During excavations it is important that excavated material be deposited at a sufficient distance away from the edges of a trench.

1.2.1 Give reason for this action.

1.2.2 What should be done to prevent collapse? (2 × 2) (4)

1.3 Why should there be a first-aid box on site? (2)
[10]

QUESTION 2

2.1 When erecting scaffolding, one of the most important features is the soleplate.

Give the functions of the soleplate. (4)

2.2 Show, with the aid of a sketch, what a builder's trowel looks like. (4)

2.3 Name TWO types of power tools and state what each of them is used for. (2)
[10]

QUESTION 3

3.1 Explain the following terminology:

3.1.1 Chemical properties

3.1.2 Annealing (2 x 2) (4)

3.2 A plumber is busy excavating a trench and he/she uncovers polythene services with different colours.

Explain which service is represented by each of the following colours:

3.2.1 Blue

3.2.2 Yellow

3.2.3 Black and red

3.2.4 Grey (4 x 2) (8)
[12]

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QUESTION 4

4.1 What is the difference between *arc welding* and *gas welding?* (2 × 2) (4)

4.2 In arc welding, what is an electrode? (2)

4.3 Give the colours of oxyacetylene cylinders and name the gas represented by each colour. (2) **[8]**

QUESTION 5

5.1 Show, with aid of a sketch, how the cold-water supply to a domestic dwelling would be connected and label all the parts and relevant pipes. (8)

5.2 What does the term *potable water* mean? (2) **[10]**

QUESTION 6

Show, with aid of sketches, how the following valves would be represented according to SANS:

6.1 Pressure control valve

6.2 Combined pressure control and expansion control valve

6.3 Float valve

6.4 Vacuum control valve

6.5 Temperature and pressure safety valves (5 × 2) **[10]**

QUESTION 7

7.1 Name THREE methods to develop patterns in sheet-metal work. (3)

7.2 Using the radial-line method, develop a pattern of a frustum of a right cone with a diameter of 3 cm, a height of 5 cm and a frustum at 3 cm. (17) **[20]**

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QUESTION 8

Name the FIVE parts of flashing found around the area where a chimney stack passes through a roof. (5 × 2) **[10]**

QUESTION 9

Calculate the volume of a rectangular tank with the following dimensions:

Length = 16 m
Breadth = 90 cm
Height = 18 m **[10]**

TOTAL: 100

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