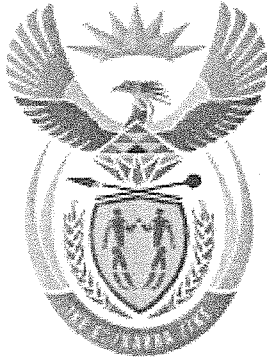
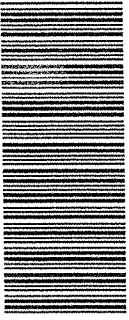


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# higher education & training

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Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

**T1360(E)(M25)T  
APRIL EXAMINATION**

**NATIONAL CERTIFICATE**

**PLUMBING THEORY N1**

**(11022041)**

**25 March 2013 (X-Paper)  
09:00–12:00**

**This question paper consists of 4 pages.**

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

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**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 describe the purposes of the following with regard to safety when working with scaffolding:
- 1.1.1 Toe boards (1)
  - 1.1.2 Guard rails (1)
- 1.2 Name FIVE factors to be considered in the lifting of a weighty object. State the factors in the correct order. (5)  
[7]

**QUESTION 2**

- 2.1 Name FIVE marking or measuring tools. (5)
- 2.2 Make a sketch to illustrate a waste-water drain plug and label all the parts. (8)  
[13]

**QUESTION 3**

- 3.1 Write down the following abbreviations in full:
- 3.1.1 UPVC (2)
  - 3.1.2 GMS (2)
  - 3.1.3 PVC (2)
- 3.2 Define the term *coefficient of expansion*. (2)  
[8]

**QUESTION 4**

- 4.1 Show THREE different types of flames in gas welding and explain their gas composition with the aid of sketches. (9)
- 4.2 Show with aid of sketches the TWO steps to make a Pittsburgh lock joint. (4)  
[13]

**QUESTION 5**

- 5.1 Give the chemical reaction of water and state its characteristics and physical properties. (4)
- 5.2 Define the term *relative density*. (2)
- 5.3 Name TWO ways of joining copper tubes. (2)
- 5.4 Name TWO products that a plumber uses to make joints on galvanised pipes leakproof. (2)
- [10]

**QUESTION 6**

- 6.1 There are THREE principles of heat transfer applicable to hot water installations.  
Name and explain them. (6)
- 6.2 Make a single line diagrammatic sketch of a balanced pressure system through the master box in a high pressure geyser. (8)
- [14]

**QUESTION 7**

- 7.1 Make a sectional drawing of the installation of a bath through a wall and the bath. (7)
- 7.2 Describe the difference between the following:
- 7.2.1 Ventilation pipe and ventilation valve (4)
- 7.2.2 Rodding eye and inspection eye (4)
- 7.2.3 Manhole and gully (4)
- [19]

**QUESTION 8**

Show by means of sketches how to fix flashing against a parapet wall of a pitched roof and label the parts of the flashing. [6]

**QUESTION 9**

Calculate the area of a semi-circular canopy with a diameter of 1,8 m. [10]

**TOTAL: 100**