higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

PLUMBING
NQF LEVEL 2

(12020162)

28 November 2023 (Y-paper)
13:00–16:00

Calculators may be used.

This question paper consists of 5 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)
PLUMBING
NQF LEVEL 2
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. All work you do not want to be marked must be crossed out.
5. Use only a blue or black pen.
6. The sketch must be neat, reasonably large, in good proportion, fully labelled and a pencil must be used.
7. Write neatly and legibly.

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QUESTION 1: INTRODUCTION TO PLUMBING

1.1 What happens to water at the last stage of the water purification process? (3)

1.2 Give a description for the term *filtration.* (2)

1.3 How did the ancient Romans bring water from rivers and dams to areas where it was needed? (2)

1.4 List FOUR important roles of a plumbing manager. (4)

1.5 Give an alternate word for wastewater. (1)

1.6 Define the word *sludge.* (3)

[15]

QUESTION 2: PLUMBING PRINCIPLES AND CODE OF PRACTICE

2.1 Why are service reservoirs built on elevated places such as hills and slopes? (2)

2.2 By means of which TWO methods can water flow through a pipe? (2)

2.3 A water tank is placed on a platform that is 11 m high. The water level in the tank is 1,2 m above the top of the platform.

Calculate the pressure of a tap placed 8 m below the top of the platform. (6)

2.4 Choose an option from the list given below to complete each of the following sentences. Write only the answer next to the question numbers (2.4.1–2.4.5) in the ANSWER BOOK.

head; desalination; French drain; Part 1; 25

2.4.1 SANS 10252 … provides guidelines for water-supply installations for buildings in South Africa.

2.4.2 Every person should have the opportunity to use at least … litres of water every day.

2.4.3 The effluent of a septic tank runs out into a …

2.4.4 Water pressure is determined by the … of the water.

2.4.5 Seawater is treated and made fit for household purposes at … plants.

(5 × 1) (5)

[15]

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QUESTION 3: MATERIALS, TOOLS AND EQUIPMENT

3.1 Name a tool that could be used to check if walls are plumb. (1)

3.2 Give the use of each of the following:

3.2.1 A ladder

3.2.2 A scaffold

(2 × 2) (4)

3.3 List FIVE steps that should be followed when dismantling trestle scaffolding. (5)

[10]

QUESTION 4: WATER-PIPE ASSEMBLY

4.1 Name SEVEN items including materials that are needed to solder copper pipes. (7)

4.2 Name THREE types or classes of copper pipes that can be bent. (3)

4.3 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question numbers (4.3.1–4.3.7) in the ANSWER BOOK.

4.3.1 When joining a T-piece copper pipe, all three ends should be joined at the same time.

4.3.2 The part of the bending machine where a bend is made or formed, is called a former.

4.3.3 GMS pipes cannot be used for hot-water-supply pipes.

4.3.4 Non-metal pipes are pipes made through a chemical process that creates plastic.

4.3.5 Thermoplastics are made with a chemical compound called polymers.

4.3.6 Solvent cement is a type of flux that is used to join copper pipes.

4.3.7 There is only one method that can be used to join a multilayer pipe.

(7 × 1) (7)

4.4 List the procedures that should be followed when joining two copper pipes with capillary fittings. (8)

[25]

QUESTION 5: CUTTING AND JOINING OF METALS

5.1 Briefly explain the following terms:

5.1.1 Chimney stack

5.1.2 Parapet wall

5.1.3 Skirting

(3 × 2) (6)

5.2 Name FOUR types of brazed joints used to join sheet metal. (4)

[10]

QUESTION 6: SETTING OUT BELOW-GROUND DRAINAGE SYSTEMS

6.1 Make a neat, single-line longitudinal sectional sketch of a typical septic tank suitable for a domestic dwelling. Clearly indicate all the required detail, pipes, fittings and dimensions on the sketch. (10)

6.2 Write the meaning of the following abbreviations in full:

6.2.1 RE

6.2.2 IE

6.2.3 VP

6.2.4 G

6.2.5 WHB

6.2.6 WC

(6 × 1) (6)

6.3 What is the most common gradient for the following pipe diameters?

6.3.1 100 mm

6.3.2 150 mm

6.3.3 225 mm

6.3.4 300 mm

(4 × 1) (4)

6.4 Name FOUR types of materials that are used for bedding. (4)

6.5 On a construction site plan which direction is the best to be shown, north or south ? (1)

[25]

TOTAL: 100

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