higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

PLUMBING
NQF LEVEL 2

(12020162)

22 November 2024 (Y-paper)
13:00–16:00

Calculators and drawing instruments may be used.

This question paper consists of 6 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. Start each question on a new page.
5. All sketches and diagrams must be neat, reasonably large, in good proportion, fully labelled, and drawn in pencil.
6. All the abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
7. Use only a black or blue pen.
8. Write neatly and legibly.

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QUESTION 1: INTRODUCTION TO PLUMBING

1.1 Which metal did the ancient Romans use in their plumbing? (1)

1.2 Provide a description of the term *plumbing.* (2)

1.3 Name TWO future developments in the plumbing industry. (2)

1.4 Briefly explain what the *water cycle* is. (2)

1.5 List THREE properties of water. (3)

1.6 Give ONE reason why chlorine is added to water. (1)

1.7 State FOUR roles of a plumbing project manager. (4)

[15]

QUESTION 2: PLUMBING PRINCIPLES AND CODE OF PRACTICE

2.1 Name THREE sources of water. (3)

2.2 State TWO ways of causing water to flow through a pipe. (2)

2.3 Briefly explain what a *water reticulation system* is. (2)

2.4 Explain why storage reservoirs are built on hills or slopes. (2)

2.5 State THREE systems that offer Certificates of Approval. (3)

2.6 Briefly explain the term *flow rate*. (2)

2.7 What does SANS 10252-part 1 stand for? (1)

[15]

QUESTION 3: MATERIALS TOOLS AND EQUIPMENT

3.1 The images below show various tools which are used in the plumbing industry. Identify each of the tools and write only the name next to the question number (3.1.1–3.1.3) in the ANSWER BOOK.

3.1.1



3.1.2 

3.1.3 

(3 × 1) (3)

3.2 Name TWO types of sanitary fixtures. (2)

3.3 Give THREE examples of waste-water. (3)

3.4 State the TWO most important things to remember when working with a ladder. (2)
[10]

QUESTION 4: SANITARY INSTALLATION

4.1 The sketches below show various GMS fittings as used in water supply systems. Identify the fittings and write only the name of each fitting next to the question number (4.1.1–4.1.6) in the ANSWER BOOK.

4.1.1 

4.1.2 

4.1.3 

4.1.4 

4.1.5 

4.1.6 

(6 × 1) (6)

4.2 Name THREE classes of copper pipe that you can bend. (3)

4.3 Give TWO ways in which we can join copper pipes. (2)

4.4 State THREE different ways to make bends in copper pipes. (3)

4.5 List THREE benefits of plastic pipe. (3)

4.6 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (4.6.1–4.6.6) in the ANSWER BOOK.

4.6.1 Thermoplastics are types of plastics generally used to make pipes for plumbing.

4.6.2 Polythelyne is used for making cold water cisterns.

4.6.3 uPvc is used for water mains, wastewater removal and to channel rainwater away.

4.6.4 Polythelyne is less expensive than other pipes.

4.6.5 Monolayer pipes are made of copper.

4.6.6 Monolayer means one layer.

(6 × 1) (6)

4.7 Name the special tool used for joining multilayer pipe. (1)

4.8 Give the name of the tool used to cut uPvc pipe. (1)

[25]

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QUESTION 5: CUT AND JOIN METALS

5.1 Briefly explain the term *flashing.* (2)

5.2 Give TWO types of material used to manufacture flashing. (2)

5.3 Give the most common hand tool used to cut sheet metal. (1)

5.4 Name FIVE types of flashing. (5)
[10]

QUESTION 6: BELOW GROUND DRAINAGE SYSTEMS

6.1 Briefly explain the term *storm water.* (2)

6.2 List the SIX main points to consider when laying out a drainage system. (6)

6.3 Explain the purpose of an inspection chamber in an underground drainage system. (4)

6.4 What is a *gully* and what is its purpose? (4)

6.5 The diagram in FIGURE 1 below shows a gully. Name the components labelled A, B and C by writing only the answer next to the letter (A–C) in the ANSWER BOOK.

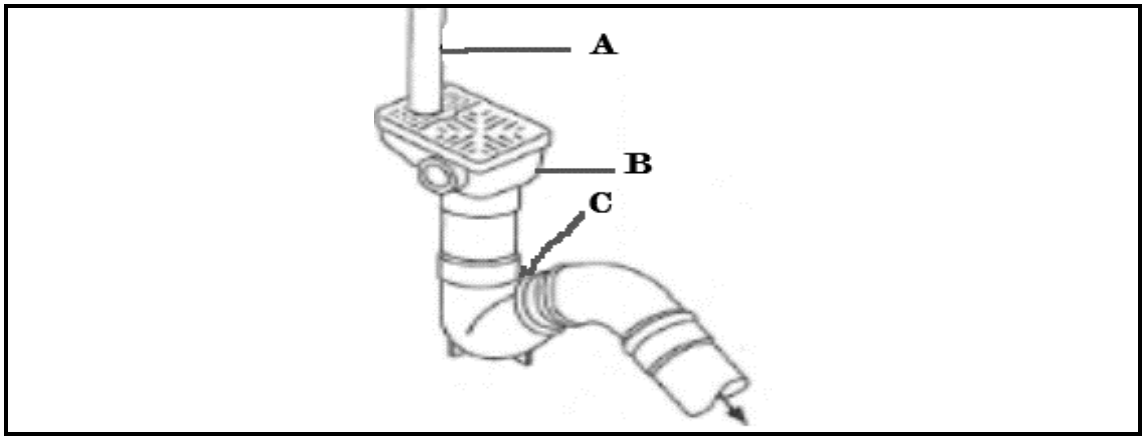

FIGURE 1

(3 × 1) (3)

6.6 What is meant by the *gradient* of a drain? (1)

6.7 Name TWO types of soil. (2)

6.8 Name THREE levelling instruments commonly used in the plumbing industry. (3)
[25]

TOTAL: 100

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