higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

PLUMBING
NQF LEVEL 2

(12020162)

11 March 2020 (Y-paper)
13:00–16:00

This question paper consists of 5 pages.

509Q1S2011

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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 section on a new page.
5. Use only a black or blue pen.
6. Write neatly and legibly.

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QUESTION 1: INTRODUCTION TO PLUMBING

1.1 Briefly explain the term *waste water*. (2)

1.2 List THREE phases or processes of the water cycle. (3)

1.3 Give TWO types of plumbing. (2)

1.4 List THREE stages of a public water-purification process. (3)

1.5 List FIVE steps to follow when taking on a construction plumbing project. (5)

[15]

QUESTION 2: PLUMBING PRINCIPLES AND CODE OF PRACTICE

2.1 Give THREE examples of surface water. (3)

2.2 Briefly explain the term *friction loss*. (2)

2.3 What is the difference between a *national standard* and a *code of practice*? (2 + 2) (4)

2.4 Explain the term *desalination plants*. (2)

2.5 Give THREE reasons why all plumbers should follow the plumbing industry code of practice. (3)

2.6 What is SANS 10252 Part 1 used for? (1)

[15]

QUESTION 3: MATERIALS, TOOLS AND EQUIPMENT

3.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (3.1.1–3.1.5) in the ANSWER BOOK.

3.1.1 A plunger is used for clearing waste that is blocking pipes.

3.1.2 Tinsnips are used for cutting galvanised pipes and uPVC pipes.

3.1.3 A spirit level is used to check if pipes are not vertical or horizontal.

3.1.4 A steel square is used to check whether corners are 90°.

3.1.5 Always wear PPE when operating a guillotine.

(5 × 1) (5)

3.2 Draw each of the following copper-pipe fittings:

3.2.1 Female compression elbow 90°

3.2.2 Compression equal tee

(2 × 1) (2)

3.3 Name TWO consumable materials needed before soldering copper pipes together. (2)

3.4 What is a stopcock? (1)

[10]

QUESTION 4: WATER-PIPE ASSEMBLY

4.1 Name FIVE types of plumbing fittings. (5)

4.2 Explain the procedure to follow when joining two copper pipes using a capillary fitting. (8)

4.3 Name TWO tools used to cut copper pipes. (2)

4.4 Differentiate between *monolayer* and *multilayer*. (2 + 2) (4)

4.5 State THREE ways of joining monolayer pipes. (3)

4.6 Write each of the following abbreviations in full:

4.6.1 MPVC

4.6.2 uPVC

4.6.3 PVC

(3 × 1) (3)

[25]

QUESTION 5: CUTTING AND JOINING OF METALS

5.1 Name SIX types of flashing. (6)

5.2 Name TWO flux substances used for brazing purposes. (2)

5.3 What is an *electrode*? (2)

[10]

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QUESTION 6: SET OUT BELOW-GROUND DRAINAGE SYSTEMS

6.1 Name FOUR instances where plumbers make access points for drains. (4)

6.2 Give TWO main functions of a gully. (2)

6.3 What is the maximum depth of an inspection chamber? (1)

6.4 Differentiate between a *septic tank* and a *French drain*. (2 + 2) (4)

6.5 Draw the symbol for each of the following:

6.5.1 Diameter inside

6.5.2 Invert level

6.5.3 Centre line

6.5.4 Datum level

6.5.5 North point

(5 × 1) (5)

6.6 Briefly explain the term *invert level*. (2)

6.7 Give TWO types of soil. (2)

6.8 What is the purpose of bedding? (4)

6.9 Who owns sewer pipes? (1)

[25]

TOTAL: 100

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