higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

PLUMBING
NQF LEVEL 3

(12030373)

7 December 2020 (X-paper)
09:00–12:00

This question paper consists of 5 pages.

371Q1N2007

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

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QUESTION 1: COLD-WATER RETICULATION

1.1 What purpose does a water meter serve in domestic or business dwellings? (2)

1.2 What is a good description of an indirect cold water cistern? List at least TWO facts. (2)

1.3 List SIX factors that needs consideration, when deciding on a suitable diameter for the plumbing pipe that will be used in a cold-water system. (6)

1.4 How are the nominal sizes of each of the following pipes measured?

1.4.1 GMS pipes (1)

1.4.2 Copper pipes (1)

1.5 Name THREE advantages of using an isometric drawing when calculating materials. (3)

1.6 What does the following terms refer to?

1.6.1 Stagnant water (1)

1.6.2 Pitting (1)

1.6.3 Friction loss (1)

1.7 Give a description for:

1.7.1 A flexible hanger (1)

1.7.2 A rigid hanger (1)

[20]

QUESTION 2: HOT-WATER RETICULATION

2.1 List FOUR facts to state why a bill of quantities is needed when installing residential hot-water systems. (4)

2.2 List FIVE advantages of a combination geyser. (5)

2.3 Why is following the SANS regulations important when installing a hot-water reticulation system and geyser? (3)

2.4 What are expansion joints? (2)

2.5 Give SIX working principles of a push-through hot-water geyser. (6)

[20]

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QUESTION 3: ABOVE-GROUND DRAINAGE SYSTEMS

3.1 Name FIVE sanitary fixtures and give the abbreviation of each. (5 × 2) (10)

3.2 List FOUR materials that can be used for the manufacturing of drainpipes. (4)

3.3 What do plumbers generally use to secure pipes to walls? (1)

[15]

QUESTION 4: SANITARY INSTALLATION

4.1 Which material type and diameter is best suited for the waste-water pipework underneath a shower tray? (2)

4.2 List FIVE of the steps that should be followed when preparing the bedding and brickwork for the installation of a conventional bath on the floor. (5)

4.3 Name THREE methods that can be used to connect the water supply to a urinal. (3)

4.4 What is the purpose of a splashback and which type of material can be used for its manufacture? (4)

4.5 Why is it not necessary for a water closet to be fitted with a water-seal trap? (1)

[15]

QUESTION 5: RAINWATER SYSTEM

5.1 Name FOUR advantages a plumber has, when using uPVC gutters for a rainwater system. (4)

5.2 List EIGHT steps in how fibre-cement downpipes and fittings are joined together. (8)

5.3 Describe using at least THREE facts the function of a rainwater system. (3)

[15]

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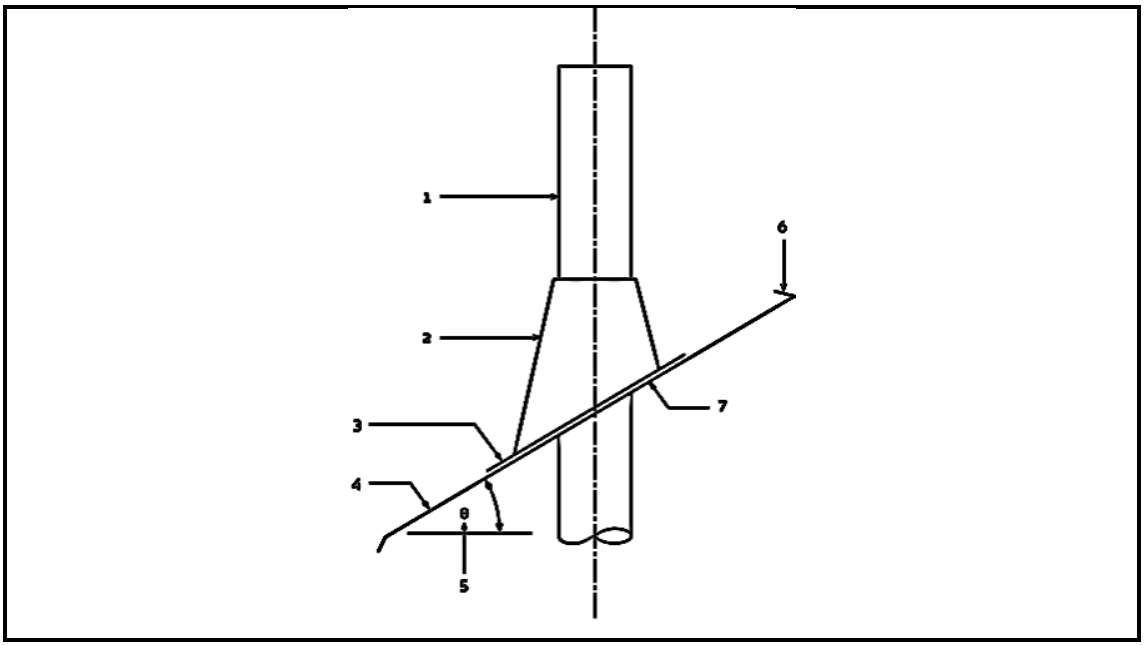
QUESTION 6: VENT-PIPE FLUSHING

6.1



Label the components of the given sketch and write only the answer next to the number in your ANSWER BOOKS. (7 × 1) (7)

6.2 Name the THREE methods that can be used to develop patterns in sheet metalwork. (3)

[10]

QUESTION 7: TRENCHING, EXCAVATION AND TRENCH SUPPORT

7.1 List a minimum of THREE regulations to explain why it is important to support the sides of trench excavations in accordance with the Occupational Health and Safety regulations. (3)

7.2 What is meant by excavating trenches to *line and level*? (2)

[5]

TOTAL: 100

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