higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY

(Second paper)

NQF LEVEL 2

(12050622)

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

Calculators may be used.

This question paper consists of 5 pages.

283Q2N2420

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ARCHITECTURAL GRAPHICS AND TECHNOLOGY
(Second paper)
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 section on a new page.
5. All drawing work must be done in pencil.
6. All drawing work must comply with the relevant SANS (SABS) recommended codes.
7. Brick sizes should be taken as 220 × 110 × 75 mm.
8. All abbreviations and symbols must comply with the latest National Building Regulations and all relevant SANS (SABS) codes.
9. Use only a black or blue pen.
10. Write neatly and legibly.

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QUESTION 1

1.1 Explain the meaning of the THREE categories of construction drawings according to their purpose or role. (3 × 2) (6)

1.2 Give FIVE contract documents that are associated with a construction contract. (5)

1.3 How do specifications influence contract documents and payment to contractors? (4)

[15]

QUESTION 2

2.1 Explain the meaning of the word, *servitude*. (5)

2.2 Contract documents consist of various sections depending on the type of contract. Give FIVE examples of contract documents. (5)

[10]

QUESTION 3

3.1 List the different TYPES of measuring instruments used to measure in the industry. (5)

3.2 List THREE key aspects of civil engineering. (3)

3.3 Write down THREE disadvantages of a synthetic tape measure. (3)

3.4 Explain how to measure successive intervals from the zero mark. (7)

3.5 Explain the limitations of using the 3-4-5 method to set out shapes. (2)

[20]

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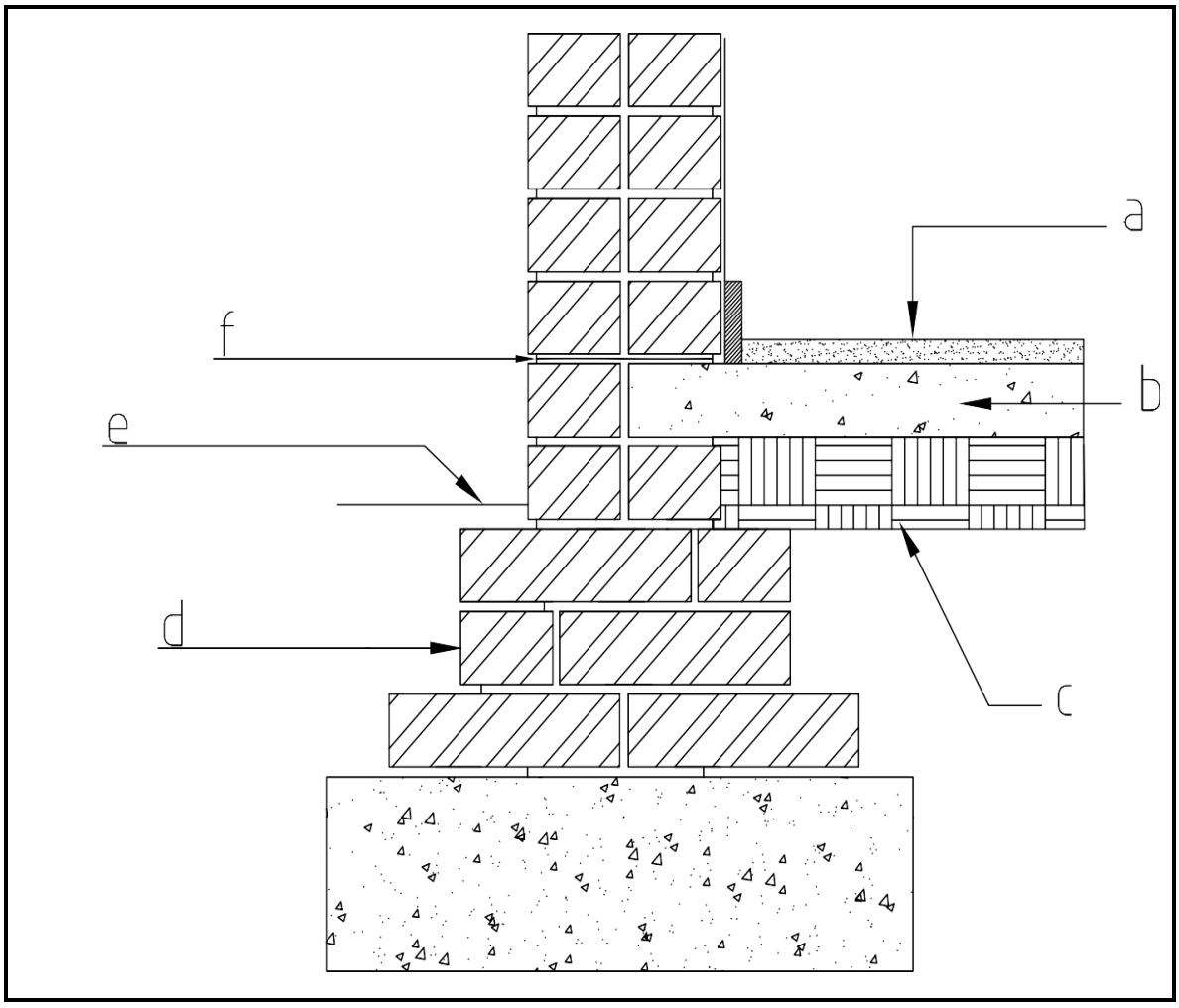
QUESTION 4

4.1 Describe the main functions of a foundation. (5)

4.2 Define the term, *pad foundation*. (3)

4.3 Explain the SIX steps used to set out a building after having identified the reference points. (6)

4.4 Name the elements labelled in the drawing below by writing only the answer next to the letter (a–f) in the ANSWER BOOK.



(6)
[20]

QUESTION 5

5.1 Describe a *wall tie*. (5)

5.2 Define the brick position in the following:

Stretcher, header, shiner (3 × 1) (3)

5.3 Make a freehand sketch for each of the positions in QUESTION 5.2. (3)

5.4 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (5.4.1–5.4.10) in the ANSWER BOOK.

5.4.1 The standard height for a non-structural wall in any storey is 3 meters.

5.4.2 Bricks were originally formed by placing moist clay in moulds by hand.

5.4.3 Hollow bricks are durable, but not fire resistant.

5.4.4 Reinforced or unreinforced single-wythe structural bricks are 76 to 102 mm in nominal thickness with void areas typically between 26 and 35 percent.

5.4.5 Clay and concrete bricks have the same function but each offer unique characteristics and have different benefits.

5.4.6 Clay bricks are normally limited to one shape, the rectangle.

5.4.7 Concrete bricks made with limestone are stronger than traditional concrete brick.

5.4.8 Bricks and concrete masonry is a modern invention.

5.4.9 A half-brick wall represents the same thickness as a single leaf wall.

5.4.10 The national building regulations are known as SANS 10400.

(10 × 1) (10)

5.5 Write a short paragraph to explain what a cavity wall is. (4)

5.6 Make a freehand drawing in good proportion to illustrate a concrete masonry lintel. Show the reinforcing, lintel block and shoring. (6)

5.7 Make a freehand drawing of each of the following: 3-centred arch, shouldered flat arch. (4)

[35]

TOTAL: 100

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