higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

(11010091)

12 April 2021 (X-paper)
09:00–12:00

Nonprogrammable calculators and drawing instruments may be used.

This question paper consists of 6 pages.

120Q1A2112

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
BRICKLAYING AND PLASTERING THEORY N1
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

1.1 Name THREE types of safety signs. (3)

1.2 Give the purpose of the following colours used in safety signs:

1.2.1 Red

1.2.2 Yellow

1.2.3 Orange

1.2.4 Blue

(4 × 1) (4)

1.3 From the list below, choose FOUR groups into which bricklayers' tools can be divided.

setting-out tools; brick hammer; bricklaying tools; straight edge; jointing tools; brick-cutting tools; steel pegs

(4)

1.4 List FOUR criteria that should be considered when choosing a spirit level. (4)

1.5 List FOUR materials that can be used to make concrete. (4)

1.6 Name ONE way to care for steel tools. (1)

[20]

QUESTION 2

2.1 To ensure that the concrete mixture is consistent, workable and of the same required strength, a certain test is performed.

Name the test mentioned in the above statement. (2)

2.2 Explain the term *natural building stone*. (2)

2.3 Explain the FIVE steps according to which a sand test is conducted. (5)

2.4 Define the term *no-fines concrete*. (2)

2.5 What is the purpose of a weep hole? (2)

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2.6 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A–F) next to the question number (2.6.1–2.6.5) in the ANSWER BOOK.

COLUMN A		COLUMN B	
2.6.1	A combination of silt, sand and clay	A	sand
2.6.2	It is much finer than sand	B	clay
2.6.3	Soft rock can also contain	C	loam
2.6.4	It allows the free movement of moisture	D	sandstone
2.6.5	Tiny particles that can retain moisture	E	rock
		F	silt

(5 × 1) (5)

2.5 What is the purpose of using the 3-4-5 method? (2)
[20]

QUESTION 3

3.1 Explain the following words:

3.1.1 Gauge rod

3.1.2 Erf

3.1.3 Datum level

(3 × 1) (3)

3.2 Describe the difference between a *building line* and *boundary line.* (4)

3.3 Define the term *concrete.* (2)

3.4 It is very important that no segregation takes place when transporting concrete.

Indicate FOUR ways in which concrete can be transported around the site. (4)

3.5 Briefly explain the use of pilaster blocks. (2)

3.6 Name THREE common textures of blocks. (3)

3.7 By means of a drawing, explain what *quarter lap* is. (2)
[20]

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QUESTION 4

4.1 Name THREE types of bonds. (3)

4.2 Make a neat labelled sketch to an approximate scale of 1:10 of the front elevation of a wall built in stretcher bond. The wall must be SIX courses high.

The drawing must clearly show the following detail:
Bed joints

- Racking back
- Toothing
- Stretcher course
- Stopped-end on the one side (5)

4.3 Explain the words *first coat-rendering*. (2)

4.4 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (4.4.1–4.4.6) in the ANSWER BOOK.

4.4.1 Fixing surface refers to a solid and stable surface upon which tiles are fixed.

4.4.2 Bedding is a layer of adhesive material to set the tile in and attach to the background surface.

4.4.3 Durability is a characteristic of terracotta tiles.

4.4.4 Ceramic tiles are made of a fine aggregate, cement and water.

4.4.5 Screed is a mixture of cement and fine aggregate in a thin layer on the floor, separately or as a mixture with the adhesive mortar, before tilling is done.

4.4.6 Tiles can be laid in stacked, straight, herringbone, checkerboard, pinwheel or windmill patterns.

(6 × 1) (6)

4.5 State the purpose the of plastering walls. (2)

4.6 Arches are classified in three different ways.

(2)

State TWO different ways in which arches are classified.

[20]

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QUESTION 5

5.1 State THEE points to take into account when constructing arches. (3)

5.2 Name and describe TWO types of mouldings used in decorative work. (4)

5.3 Give FOUR disadvantages of using epoxy. (4)

5.4 Define the term *wastage.* (2)

5.5 A single wall to be built has a length of 20 m and a height of 1,6 m.

NOTE: 54 bricks for a single wall including wastage.
107 bricks for a double-skin wall including wastage.

Calculate the following:

5.5.1 Area of the single wall.

5.5.2 Number of bricks needed to build the single wall

(2 × 2) (4)

5.6 A concrete slab consisting of normal M5 grade concrete needs to be poured next to the house. The slab dimensions are 2,5 m x 3 m x 200 mm.

Calculate the volume of concrete slab. (3)
[20]

TOTAL: 100

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