higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

(11010091)

28 November 2023 (X-paper)
09:00–12:00

Drawing instruments may be used.

This question paper consists of 4 pages.

120Q1E2328

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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. Use only a black or blue pen.
5. Drawings and sketches should be labelled, neat and clear. A pencil may be used.
6. Write neatly and legibly.

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QUESTION 1

1.1 List FVE categories of safety signs. (5)

1.2 Study the FIGURE below. What does this sign indicate? (2)



FIGURE 1

1.3 Which tool in the list below matches which description? Write only the question number (1.3.1–1.3.5) and the tool matching the description in the ANSWER BOOK.

hawk; plastering trowel; crowbar; laying on trowel; finishing trowel; gauging trowel; bucket; corner trowel; wooden float; plastic float; steel float; block brush

1.3.1 This is used to remove dust and dirt from the surface before plastering and to wet down a wall before plastering and during floating.

1.3.2 The handle is located at the centre of a 90° bend in the blade for balance and to allow one to apply even pressure to both sides of the corner.

1.3.3 The straight blade has tapered edges and a rounded nose.

1.3.4 This tool is used to carry mortar to a work area and to plaster.

1.3.5 The blade is thicker than that of other trowels to allow for heavy plastering.

(5 × 1) (5)

1.4 Briefly explain how you would check a steel square for squareness. (3)

1.5 Define the term *firebrick*. (2)

1.6 Name THREE classes of firebricks. (3)

[20]

QUESTION 2

2.1 Explain the difference between *quicklime* and *hydrated lime*. (2)

2.2 Describe the procedure to measure the bulking of sand. (5)

2.3 Sand should be tested to determine whether it can be used in mortar or concrete. Name TWO sand tests. (2)

2.4 State FOUR physical properties of no-fines concrete. (4)

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'false' next to the question number (2.5.1–2.5.7) in the ANSWER BOOK.

2.5.1 Static use vibratory rollers – generally, a vibrator mounted on a drum.

2.5.2 Compaction forces out all air and brings soil particles together.

2.5.3 Vibration involves small plates, each of which each is vibrated by a separate point unit.

2.5.4 Impact is produced by means of a block of iron or wood of about 5 kg.

2.5.5 Compacted sand and gravel form a very loose base.

2.5.6 Bricklayers use gauge rods to get the vertical height measurements of window sills and door heads.

2.5.7 A plumb bob may be used for deep trenches.

(7 × 1) (7)

[20]

QUESTION 3

3.1 How do you transfer levels from corner profiles to a concrete foundation? (6)

3.2 Define *reference point*. (1)

3.3 Name FOUR types of concrete mixers. (4)

3.4 Describe the *transportation* of concrete. (2)

3.5 With the aid of neatly labelled sketches, show how you would construct a cavity wall corner. (5)

3.6 Briefly describe the term *mortar*. (2)

[20]

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QUESTION 4

4.1 Give a short description of each of the following brick bonds.

4.1.1 Header bond

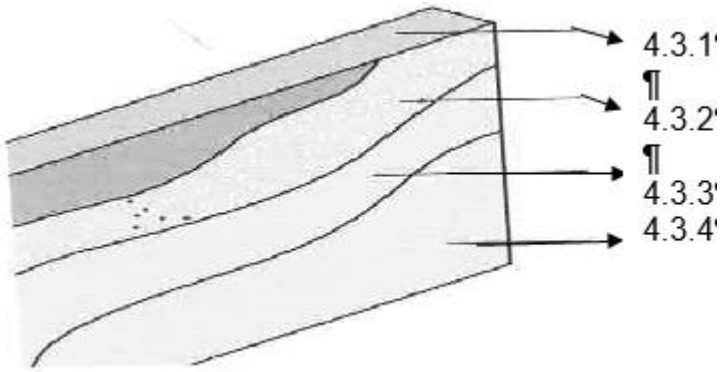
4.1.2 English bond

4.1.3 Stretcher bond

(3 × 1) (3)

4.2 Make a freehand sketch to illustrate toothing before joining two walls. (5)

4.3 Study the FIGURE below and name the parts of the third plaster coat (the finishing coat). Write only the name next to the question number.



(4 × 1) (4)

4.4 State SIX types of tiles. (6)

4.5 Name any TWO types of arch. (2)

[20]

QUESTION 5

5.1 State THREE methods of arch centering (temporary support). (3)

5.2 Explain how Greek and Roman mouldings are formed. (4)

5.3 What is bio-cement? (4)

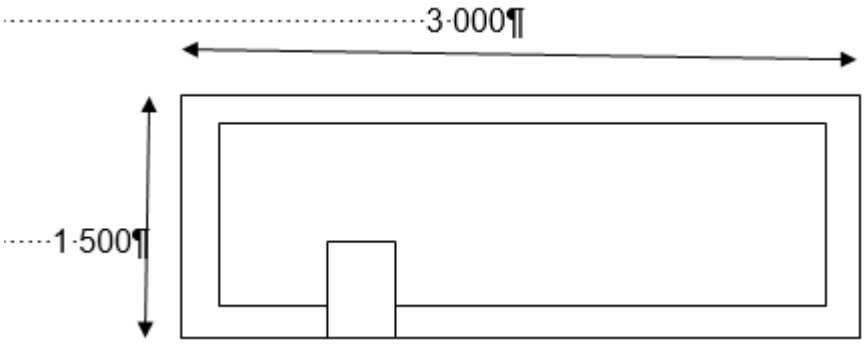
5.4 The FIGURE below shows the floorplan of a storeroom with a door.

Specifications:

The superstructure is a one-brick wall, 220 mm thick and 2700 mm high, built in stretcher bond.
The side door opening is 900 mm wide.

5.4.1 Calculate the total lengths of the skirting and quarter-round mouldings needed. (7)

5.4.2 Calculate the number of skirting lengths you would buy if the hardware store has only lengths of 2 000 mm in stock. (2)



[20]

TOTAL: 100

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