higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

(11010091)

2 August 2021 (X-paper)
09:00–12:00

Drawing instruments and nonprogrammable calculators may be used.

This question paper consists of 6 pages.

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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. Only use a black or blue pen.
6. Write neatly and legibly.

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QUESTION 1

1.1 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.1.1–1.1.5) in the ANSWER BOOK.

1.1.1 Some of the health and safety risks and hazards from working on construction sites are …

A working at sideways.
B working at above.
C working at height.
D on corners.

1.1.2 Hearing protection is achieved by wearing …

A eye protectors.
B hearing protection.
C gloves.
D boots.

1.1.3 Personal protective equipment is equipment that will … the employee against health or safety risks at work.

A expose
B maintain
C protect
D overlay

1.1.4 There must be a convenient … in which to store tools and materials.

A hazard
B danger
C safety
D storage

1.1.5 There must be enough … for employees to work comfortably.

A time
B space
C danger
D dust

(5 × 1) (5)

1.2 Define the term *good housekeeping*. (2)

1.3 Make a neat freehand sketch of a bricklayer's trowel and label all the parts. (5)

1.4 List THREE types of jointing tools. (3)

1.5 Name FIVE types of cement. (5)

[20]

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QUESTION 2

2.1 Name TWO common methods of fixing glass. (2)

2.2 Explain the process of conducting a slump test to produce the three forms of slump. (7)

2.3 State FOUR uses of no-fines concrete. (4)

2.4 Complete the following sentences by choosing a word or words from the list below. Write only the answer next to the question number (2.4.1–2.4.5) in the ANSWER BOOK.

greater; dry; mortar; properties; strength; cohesion; stability; weathering

2.4.1 Colour may indicate the degree of … or the geological origin of the soil.

2.4.2 … refers to the ability of soil particles to stick together.

2.4.3 Stability is the ability of the soil to retain its … under varying conditions.

2.4.4 An increase in the clay content increases the … strength.

2.4.5 The more compacted the soil, the … the dry density of the soil will be.

(5 × 1) (5)

2.5 Name TWO basic building drawings. (2)

[20]

QUESTION 3

3.1 Label the setting-out sketch in FIGURE 1 below. Write only the answer next to the letter (A–F) in the ANSWER BOOK.

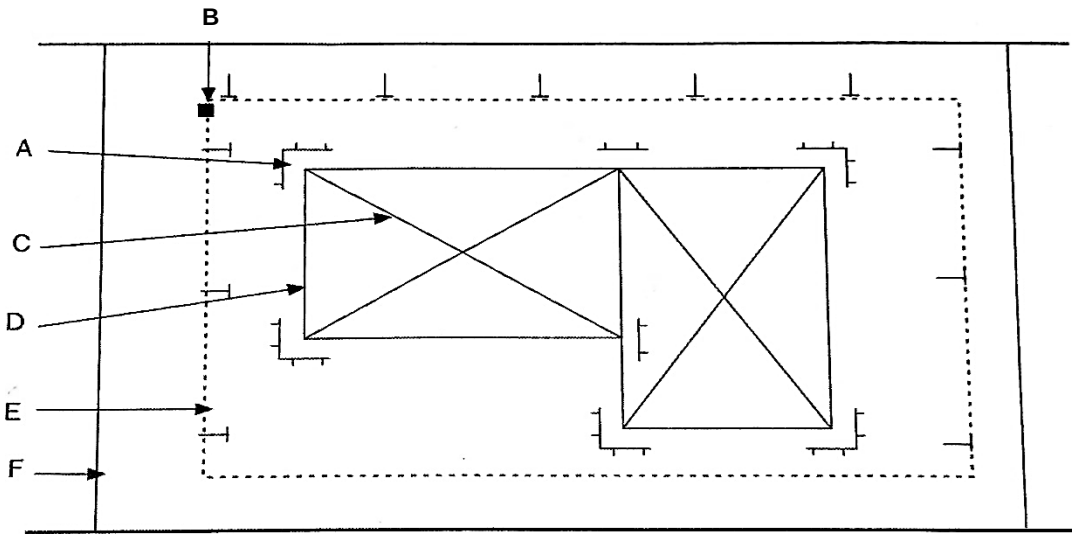

FIGURE 1 (6)

3.2 What is the distance from the street that a boundary can vary? (1)

3.3 List the steps used to mix concrete with a concrete mixer. (6)

3.4 The first course of stretcher bond cavity wall construction is provided below in FIGURE 2. Draw, to scale 1:10, the second course of cavity wall construction built in stretcher bond.

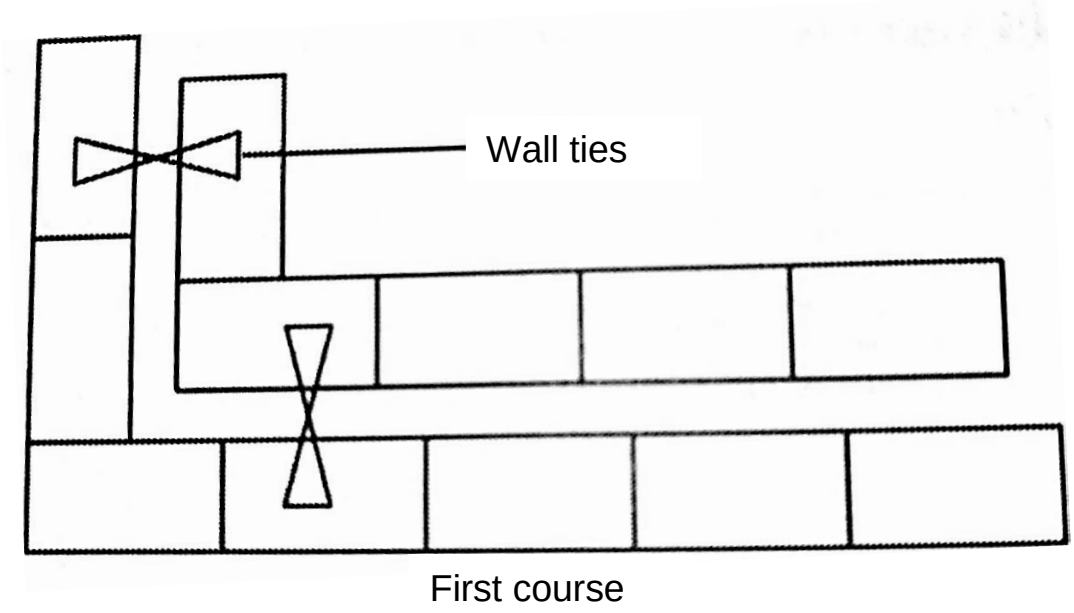

FIGURE 2 (5)

3.5 Explain the term *brick bonding.* (2)

[20]

QUESTION 4

4.1 Name THREE different ways of laying a course of bricks. (3)

4.2 Name FIVE types of material used for damp-proofing. (5)

4.3 In the fresh and hardened states, plastering mortar must meet specific requirements.

Name FOUR requirements of plaster in the fresh and the hardened state. (4)

4.4 There are various types of tiles.

Name THREE types of tiles. (3)

4.5 List THREE different patterns used to lay tiles. (3)

4.6 Define the word *soffit.* (2)
[20]

QUESTION 5

5.1 Briefly explain the difference between the *Welsh arch* and the *jack arch.* (3)

5.2 Name the FOUR categories of Greek moulding based on geometric shapes. (4)

5.3 State FOUR advantages of epoxy resins. (4)

5.4 **NOTE:** Single wall (1 brick deep) = 54 bricks per m^2 including wastage. Double skin wall (2 bricks deep) = 107 bricks per m^2 including wastage.

Calculate the number of bricks and the amount of mortar needed to build a double skin wall that is 6 m long and 3,5 m high. The thickness of the plaster is 19 mm. (5)

5.5 A floor is 7 m long and 2,5 m wide. The floor slab is finished with ceramic tiles.

NOTE: tile = 350 mm × 350 mm

Calculate the number of tiles needed to finish the floor. (4)
[20]

TOTAL: 100

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