higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T70**(E)**(A4)T

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

(11010091)

4 April 2019 (X-Paper)
09:00–12:00

This question paper consists of 5 pages.

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. Sketches must be large, neat and fully labelled.
5. Write neatly and legibly.

QUESTION 1

1.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (1.1.1–1.1.10) in the ANSWER BOOK.

1.1.1 Concrete is made by mixing cement and lime with water.

1.1.2 The proportion of each ingredient in a concrete mixture will determine the strength of the concrete.

1.1.3 Nonfine concrete consists of water, cement and sand only.

1.1.4 Curing is the process whereby newly placed concrete is kept moist for a period of at least seven days.

1.1.5 Compaction is the process whereby trapped air bubbles are removed from freshly placed concrete.

1.1.6 Clay particles in an aggregate can weaken the bonding force between the cement paste and the aggregate.

1.1.7 Mortar is a mixture of cement, stone and water.

1.1.8 Damp-proofing can also be called waterproofing.

1.1.9 A slump test is used to test the workability of concrete.

1.1.10 Jointing is the process of finishing joints by raking out the mortar with a building trowel.

(10 × 1) (10)

1.2 List FOUR materials used to make concrete. (4)

1.3 Give FOUR methods to cure concrete after it has been placed. (4)

1.4 Name TWO ways to obtain concrete. (2)

[20]

QUESTION 2

2.1 List FIVE tools that can be used to plaster a blank wall. (5)

2.2 State ONE function of each of the following tools:

2.2.1 Long jointer

2.2.2 Hand hawk

2.2.3 Steel square

2.2.4 Brick bolster

2.2.5 Spirit level

(5 × 2) (10)

2.3 Give ONE reason why selecting the correct tool for a specific type of job is important. (1)

2.4 A bricklayer is a tradesman who builds or completes the brickwork on a building project in different stages. The tools that a bricklayer use is divided into different groups depending on the stage of work.

Name FOUR main groups that a bricklayer's tools can be divided into. (4)
[20]

QUESTION 3

Draw, to an approximate scale of 1:10, an alternate plan course of a one-brick T-junction in Flemish bond. **[20]**

QUESTION 4

4.1 List THREE tests that can be carried out in the field to check the quality of mortar sand. (3)

4.2 Explain the term *admixtures*. (3)

4.3 Chemical admixtures may be classified in terms of their function.

List FIVE types of admixtures that can be used in concrete. (5)

4.4 Name THREE physical properties of firebricks. (3)

4.5 Explain the purpose of the holes in clay bricks which do not exist in solid cement bricks. (4)

4.6 Give ONE reason for using firebricks. (2)
[20]

QUESTION 5

5.1 Show by means of simple sketches the difference between *racking* and *toothing*.

NOTE: Show the racking and toothing on the right side of the drawings and stopped ends on the left side of the drawings (8)

5.2 Define each of the following civil-engineering terms:

5.2.1 Jointing

5.2.2 Bonding

5.2.3 Structural wall

5.2.4 Precast concrete

(4 × 2) (8)

5.3 Name FOUR types of joint profiles. (4)
[20]

TOTAL: 100