

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

**T20(E)(M24)T
APRIL EXAMINATION**

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

(11010091)

**24 March 2014 (Y-Paper)
13:00–16:00**

This question paper consists of 4 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. Write neatly and legibly.
-

QUESTION 1

- 1.1 Name the FOUR main groups into which a bricklayer's tools can be divided. (4)
- 1.2 Name FOUR plastering tools. (4)
- 1.3 State ONE function of each of the following tools:
- 1.3.1 Hand hawk
 - 1.3.2 Wooden float
 - 1.3.3 Gauging towel
 - 1.3.4 Corner tool
- (4 x 2) (8)
- 1.4 Explain how you would check if the edges of a straight edge are accurate. (4)
[20]

QUESTION 2

- 2.1 Define the term *concrete*. (3)
- 2.2 Define the term *curing of concrete*. (3)
- 2.3 Name FIVE different methods that can be used to cure concrete. (5)
- 2.4 Briefly explain the procedure to mix concrete using a machine. (9)
[20]

QUESTION 3

Draw, to an approximate scale 1 : 10, the alternate plan courses of a corner formed by two one-and-half brick walls in English bond. [20]

QUESTION 4

- 4.1 Name TWO different methods commonly used to join new brickwork with the existing. (2 x 2) (4)
- 4.2 Name FIVE different methods to point face brickwork. (5 x 1) (5)
- 4.3 Give the EIGHT important properties of lime. (8 x 1) (8)
- 4.4 Give THREE physical properties of fire bricks. (3 x 1) (3)
[20]

QUESTION 5

5.1 State ONE function of each of the following admixtures:

- 5.1.1 Retarders
- 5.1.2 Accelerators
- 5.1.3 Air-entrainers
- 5.1.4 Plasticisers

(4 x 2) (8)

5.2 Name SIX types of sand known as 'fine aggregate'.

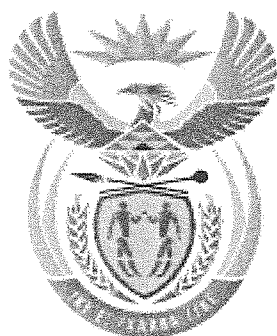
(6 x 1) (6)

5.3 Give SIX properties of fine aggregates.

(6 x 1) (6)
[20]

TOTAL: 100

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MARKING GUIDELINE

NATIONAL CERTIFICATE

APRIL EXAMINATION

BRICKLAYING AND PLASTERING THEORY N1

24 MARCH 2014

This marking guideline consists of 5 pages.

QUESTION 1

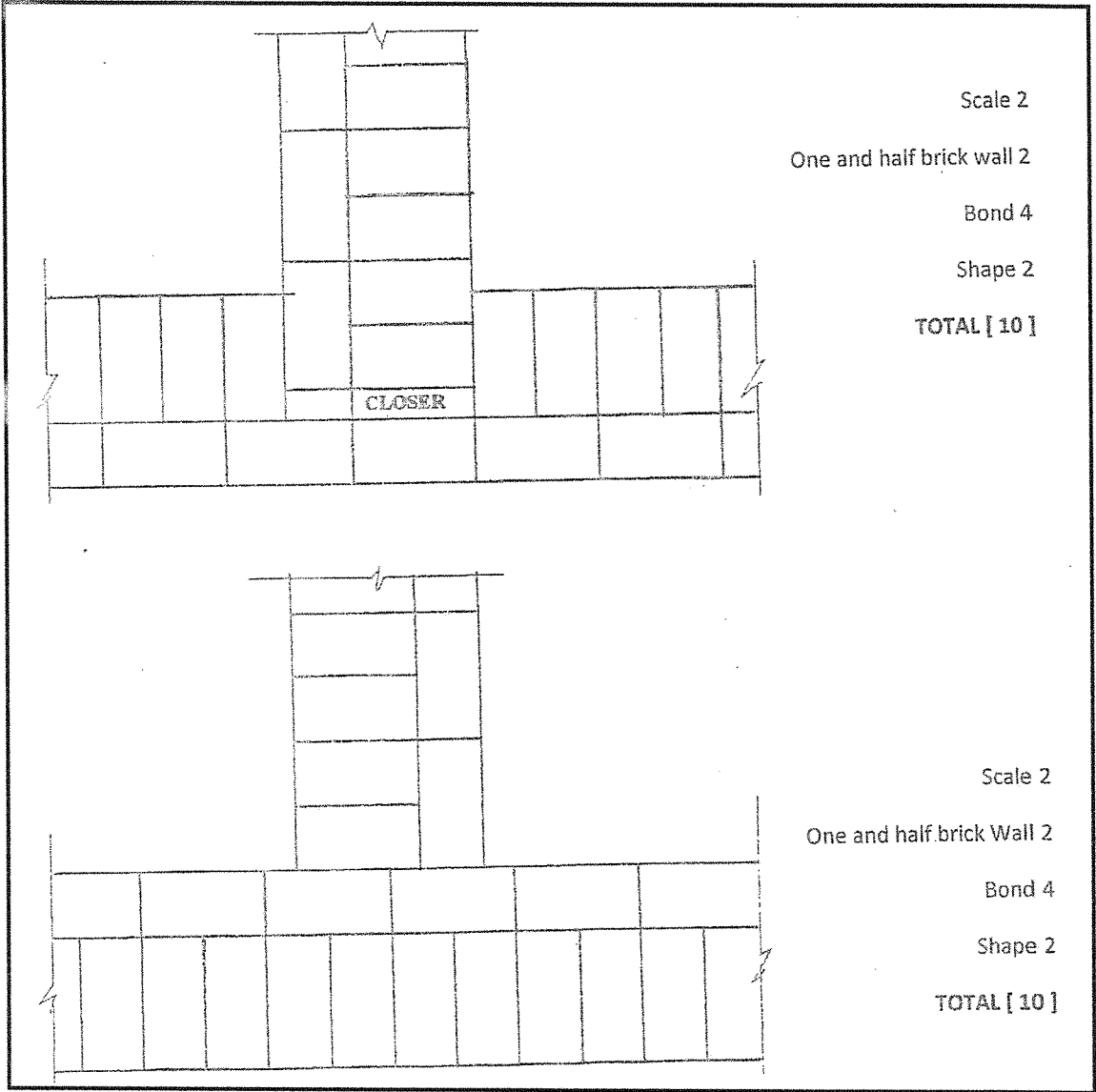
- 1.1
- Setting out tools
 - Bricklaying tools
 - Brick-cutting tools
 - Pointing tools
- (4 x 1) (4)
- 1.2
- Hand hawk
 - Plastering trowel
 - Wooden floats
 - Straight edge
 - Gauging trowel
 - Block brush
- (Any 4 x 1) (4)
- 1.3
- 1.3.1 It is used together with a plastering trowel to pick up plaster
- 1.3.2 To finish or float plaster or concrete surfaces
- 1.3.3 For patchwork where small amounts of plaster is required.
- 1.3.4 To finish the internal and external corners
- (4 x 2) (8)
- 1.4 Lay the straight edge on a flat surface.
 Draw a pencil line along one side of the straight edge.
 Turn the straight edge over so that the other side is lined up with the pencil line. If there is a difference the straight edge needs to be planed.
- (4)
[20]

QUESTION 2

- 2.1 Concrete is a mixture of stone, sand, cement and water in proportions. (3)
- 2.2 Curing means keeping the casted concrete wet for 28 days. (3)
- 2.3
- Retaining forms in place
 - Ponding of water
 - Covering with damp sand, or sawdust
 - Sprinkling with water
 - Covering with waterproof material
- (5)
- 2.4 First, half the stone plus half the water (2)
 Then the cement (2)
 Followed by the sand and the rest of the stone and water (3)
 Mix the materials for two minutes (2)
 [20]

QUESTION 3

3.1



Alternate plan courses of a one and half brick T- Junction in English bond.

[20]

QUESTION 4

- | | | | |
|-----|---|---------|--------------------|
| 4.1 | Block bonding
Toothing | (2 x 2) | (4) |
| 4.2 | <ul style="list-style-type: none"> • Hollow key joining • Square recessed • Weather joining • Flush struck • Tuck pointing | (5 x 1) | (5) |
| 4.3 | <ul style="list-style-type: none"> • Plasticity and workability • High water retention • Increased bond strength • Water permeability • Efflorescence • Elasticity and flexibility • Volume change • Durability | (8 x 1) | (8) |
| 4.4 | <ul style="list-style-type: none"> • Bulk density • Porosity • Resistance to high temperature | (3 x 1) | (3)
[20] |

QUESTION 5

- | | | | |
|-----|--|---------|-----|
| 5.1 | 5.1.1 Retarders: Slow down the setting process
5.1.2 Accelerators: Makes the concrete set faster
5.1.3 Air-entrainers: Add bubbles to the mix, which provide a lubricant allowing sand and cement to be packed closer
5.1.4 Plasticizers: Adds workability to a mix and reduces the water requirement | (4 x 2) | (8) |
| 5.2 | Riversand
Crusher sand
Pit sand
Building sand
Beach sand
Desert sand
Mine- dump sand | (6 x 1) | (6) |

5.3

- Grading
- Dust content
- Fineness modulus
- Chloride content
- Organic impurities
- Presence of sugar
- Soluble chemical impurities

(Any 6 x 1) (6)
[20]

TOTAL: 100