

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T20(E))(J21)T
AUGUST EXAMINATION

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

(11010091)

21 July 2014 (Y-Paper)
13:00–16:00

This question paper consists of 3 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.
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QUESTION 1

- 1.1 Name the FOUR main groups into which a bricklayer's tools can be divided. (4)
- 1.2 Name THREE tools in each group. (4 x 3) (12)
- 1.3 Name FOUR tools that can be used for tiling. (4)
[20]

QUESTION 2

- 2.1 Briefly explain how building lime is manufactured. (10)
- 2.2 Name SIX different types of cement. (6)
- 2.3 Name FOUR methods that can be used to cure concrete after it has been placed. (4)
[20]

QUESTION 3

- 3.1 Name THREE physical properties of fire bricks (3)
- 3.2 Briefly describe the equipment required to form a concrete test cube. (8)
- 3.3 Briefly describe how a test cube is made. (9)
[20]

QUESTION 4

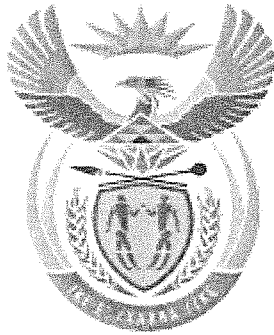
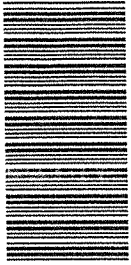
- 4.1 Briefly describe the procedure used to mix a gauge of plaster mortar by hand. (8)
- 4.2 Briefly describe the procedure to plaster and float finish a blank wall ready for painting. (12)
[20]

QUESTION 5

- 5.1 Draw, to an approximate scale of 1 : 10, the alternate plan courses of a one-and-half brick corner built in Flemish bond. [20]

TOTAL: 100

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MARKING GUIDELINE

NATIONAL CERTIFICATE

AUGUST EXAMINATION

BRICKLAYING AND PLASTERING THEORY N1

21 JULY 2014

This marking guideline consists of 7 pages.

QUESTION 1

- 1.1
- Setting-out tools
 - Bricklaying tools
 - Brick-cutting tools
 - Jointing tools
- (4)
- 1.2
- Setting-out tools**
- Tape
 - Mason's square
 - Level
 - Straight edge
 - Line
 - Pegs
- (Any 3 x 1) (3)
- Bricklaying tools**
- Brick trowel
 - Spirit level
 - Builder's line
 - Steel pins
 - Gauge rod
 - Corner blocks
 - Tingle
- (Any 3 x 1) (3)
- Brick-cutting tools**
- Brick hammer
 - Bolster
 - Club hammer
 - Cold chisel
- (Any 3 x 1) (3)
- Jointing tools**
- Long jointer (square)
 - Short jointer (square)
 - Long jointer (round)
 - Short jointer (round)
 - Pointing trowel
- (Any 3 x 1) (3)
- 1.3
- Tiling tools**
- Tile gauge
 - Tile cutter
 - Rod saw
 - Tile nipper
 - Tile snapper
 - Tile-cutting machine
- (Any 4 x 1) (4)

[20]

QUESTION 2

- 2.1 Limestone is mined in an open mine followed by crushing and screening. (1)
- The crushed limestone passes through a rotary kiln. (1)
- The heat expels the carbon dioxide leaving unslaked lime. (1)
- The unslaked lime is then fed into mills where the particle size is reduced. (1)
- The quicklime is steam-treated to slake. (2)
- During slaking heat is given off and the quicklime expands. (1)
- After slaking the lime becomes hydrated lime. (2)
- The lime is then further milled and packed in 25 kg bags ready for sale. (1)
- 2.2
- Ordinary Portland cement
 - Rapid hardening cement
 - Portland blast-furnace cement
 - Portland 15 SL cement
 - Sulphate resistant cement
 - High alumina cement
 - White cement
- (Any 6 x 1) (6)
- 2.3
- Retaining forms in place
 - Ponding
 - Sprinkling or spraying with water
 - Covering with waterproof material
 - Liquid curing compounds
- (Any 4 x 1) (4)

[20]

QUESTION 3

- 3.1
- Bulk density
 - Porosity
 - Resistance to high temperatures
- (3)
- 3.2
- A sample of concrete
 - A scoop
 - 3 cube moulds
 - A steel tamping bar 400 mm long and with a 25 mm ramming-face trowel
 - Gauging trowel
 - Mould release oil
 - Grease
 - Labels
- (8)
- 3.3
- Check that the mould is clean.
 - Smear the inside of the mould with release oil.
 - Place the mould on a firm base.
 - Mix the concrete.
 - Fill the mould with 50 mm layers of concrete.
 - Tamp each layer 38 times with the rod.
 - Fill the mould and remove the excess, and level off with the trowel.
 - Prepare a label with the particulars of the contract, and tie it to the moulds.
 - Cover the cubes with a wet cloth.
- (9)
[20]

QUESTION 4

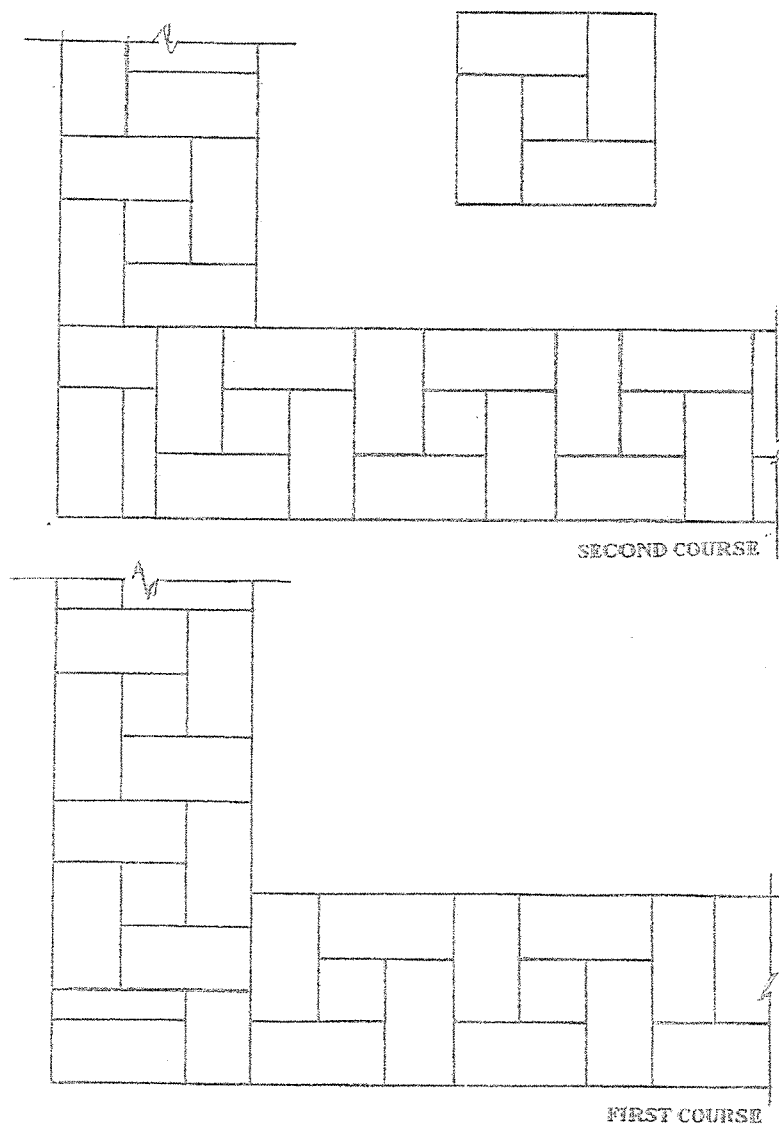
- 4.1 Gauge off the plaster sand and spread it on a hard surface. (2)
- Measure off the cement and spread it evenly over the sand. (2)
- Mix thoroughly until the mix attains a uniform grey colour. (1)
- Form a dam in the mix and add water. (2)
- Mix well. (1)
- 4.2 Remove all the dried pieces of mortar. (1)
- Wet the wall. (2)
- Bring on plumb vertical screeds. (2)
- Bring on horizontal screeds and rule down to the level of the vertical screeds. (2)
- Fill in between the screeds, and rule level. (2)
- Fill in slacks, and rule level. (1)
- Wet the wall and float smooth with a wooden float. (2)
- [20]**

QUESTION 5

- See the drawing on page 6. [20]

TOTAL: 100

ANSWER QUESTION 5



Scale 2

One & half brick wall 2

Bond 4

Shape 2

Scale 2

One & half brick wall 2

Bond 4

Shape 2

CORNER FORMED BY TWO one-and-half brick walls built in Flemish bond

ANSWER QUESTION 5
ANTWOORD VRAAG 5

Scale Skaal 2

One & half brick wall Een-en –'n-halfsteenmuur 2

Bond Verband 4

Shape Vorm 2

SECOND COURSE TWEEDE LAAG

Scale Skaal 2

One & half brick wall Een-en –'n-halfsteenmuur 2

Bond Verband 4

Shape Vorm 2

FIRST COURSE EERSTE LAAG

CORNER FORM BY TWO one-and-a-half brick walls built in Flemish bond
HOEK GEVORM deur twee een-en-'n-half baksteenmure gebou in Vlaamse verband