

0000000000



# higher education & training

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

**T20(E)(N11)T**  
**NOVEMBER EXAMINATION**  
**NATIONAL CERTIFICATE**  
**BRICKLAYING AND PLASTERING THEORY N1**

(11010091)

**11 November 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 Briefly explain the THREE main stages of the manufacturing process of cement. (6)
- 1.2 Name FIVE types of cement. (5)
- 1.3 Name SIX materials suitable for damp-proof courses. (6)
- 1.4 Name THREE types of admixtures. (3)
- [20]**

**QUESTION 2**

- 2.1 Name FIVE standard classes of fire bricks. (5)
- 2.2 Make a neat sketch, to a scale of approximately 1 : 10, of a front elevation of a wall built in English bond.
- The wall must be SIX bricks long and TWELVE courses high.
- A Clearly indicate the following on the drawing:  
B Stretcher bond  
C Header bond  
D Racking back  
E Queen closer  
F Bed joint (12)
- 2.3 Name THREE different types of jointing methods. (3)
- [20]**

**QUESTION 3**

- 3.1 Name FIVE qualities of a good brick. (5)
- 3.2 Explain the term *block bonding* (3)
- 3.3 Describe the disadvantages of 'toothing'. (2)
- 3.4 Briefly describe the procedure used to plaster a blank wall. (10)
- [20]**

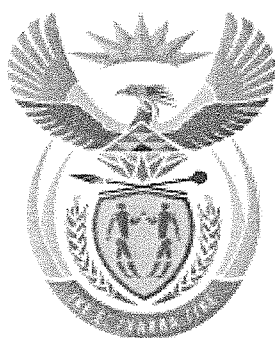
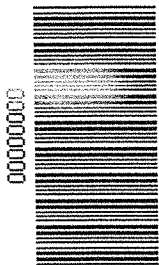
**QUESTION 4**

- 4.1 Briefly describe the sequence in which concrete materials must be mixed by hand. (12)
- 4.2 Name methods of curing concrete. (8)
- [20]

**QUESTION 5**

Draw, to a scale of approximately 1 : 10, the alternate plan courses of a T- Junction formed by two one-and-a-half brick walls built in Flemish bond. [20]

**TOTAL: 100**



# higher education & training

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

## **MARKING GUIDELINE**

**NATIONAL CERTIFICATE**  
**NOVEMBER EXAMINATION**  
**BRICKLAYING AND PLASTERING N1**  
**11 NOVEMBER 2014**

**This marking guideline consists of 5 pages.**

**QUESTION 1**

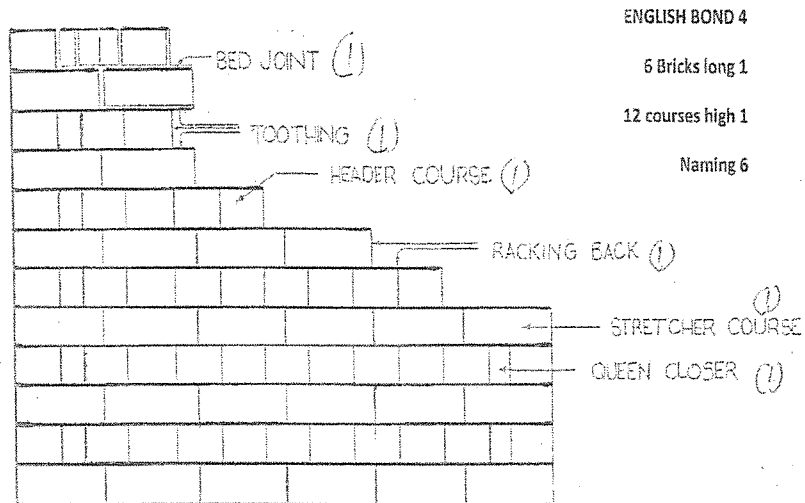
- 1.1 The raw materials used in the manufacture of Portland cement are limestone and shale which are fired at high temperature to form cement klinker. A small quantity of gypsum is added to the cooled klinker which is then ground to a fine powder – Portland cement (6)
- 1.2 Ordinary Portland cement  
Rapid hardening cement  
High alumina cement  
Sulphate-resisting cement  
White cement (5)
- 1.3 Mastic asphalt  
Bituminous  
Pitch/polymer  
Bitumen polymer felts  
Plastic membranes  
Elastomeric membranes (6)
- 1.4 Air entrainers  
Accelerators  
Retarders  
Plasticiders (Any 3 x 1) (3)
- [20]

**QUESTION 2**

- 2.1 Super - duty  
High - duty  
Medium duty  
Low- duty  
Semi- silica (5)

## BRICKLAYING AND PLASTERING N1

2.2



(12)

2.3 Flush struck

Hollow key

Square recess

Weather struck

Tuck pointing

(Any 3 x 1)

(3)

[20]

## QUESTION 3

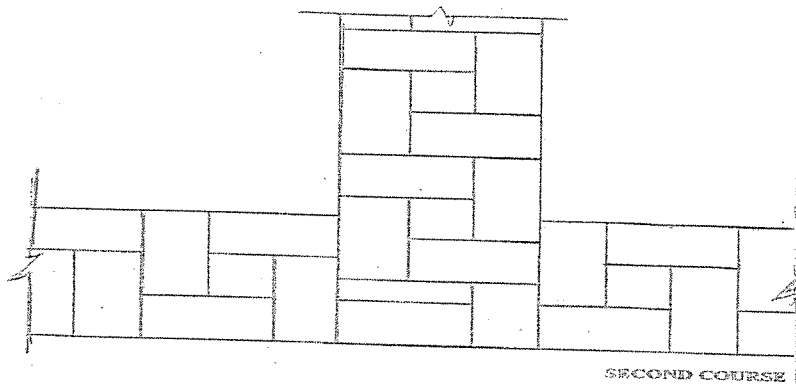
- 3.1
- Bricks must have a minimum compressive strength of 7 MPa.
  - Bricks should have low water absorption.
  - They should be uniform in shape and size.
  - Bricks should be well burnt.
  - Bricks should have a nil or not more than moderate efflorescence.
- (5)
- 3.2 Block bonding means cutting out three or more bricks from the existing and leaving an equal number down the wall where the new wall must join the existing.
- (3)
- 3.3 Filling the joints with mortar is a problem and it is not recommended for loadbearing walls.
- (2)
- 3.4
- Remove all the dry pieces of mortar.
  - Wet the wall
  - Bring on plumb vertical screeds
  - Bring on horizontal at the top and bottom of the wall screeds and rule down the level of the vertical screeds.
  - Fill in between the screeds, and rule level.
  - Fill in slacks and rule level.
  - Wet the wall and float smooth with a wooden float.
- (1)  
(1)  
(1)  
(2)  
(2)  
(1)  
(2)
- [20]

**QUESTION 4**

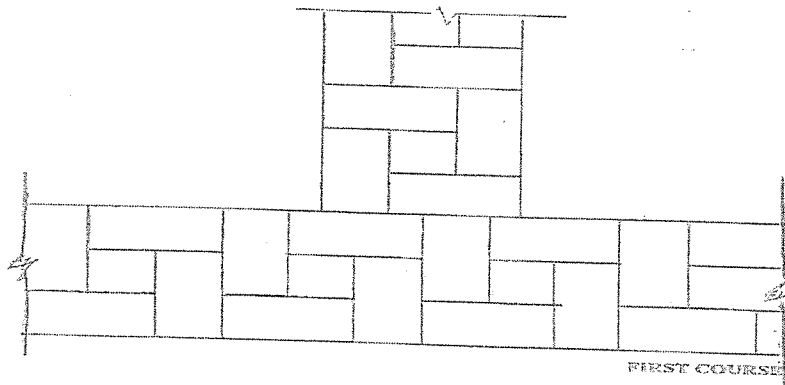
- 4.1
- Prepare a mixing platform made of steel sheet or a concrete slab (1)
  - Spread the sand in a circular layer of 75 to 100 mm thick on the mixing platform. (1)
  - Spread cement evenly over sand and mix the two until of uniform colour.
  - Spread the mixture out, add water gradually while mixing until a consistence of thin porridge is achieved. (1)
  - Shovel the materials into a flat heap with a saucer-shaped depression in the centre, (2)
  - Into which half the amount of water required is poured. (2)
  - The mixing is carried out by shovelling material from the edges of the heap into the (2)
  - Centre turning over each shovelful as it is dumped.
  - Spread out the mixture, distribute the stone over this and mix thoroughly. (1)
  - Mixing should be continued until the colour and consistence of the concrete are uniform throughout. (2)
- 4.2
- Retaining forms in place
  - Ponding of water
  - Sprinkling or spaying with water
  - Covering with waterproof (4 x 2) (8)
- [20]**



**QUESTION 5**



Scale 2  
One & half brick wall 2  
Bond 4  
Shape 2



Scale 2  
One & half brick wall 2  
Bond 4  
Shape 2

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

[20]

**TOTAL 100**