

**higher education  
& training**

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

**NATIONAL CERTIFICATE (VOCATIONAL)**

**MASONRY  
NQF LEVEL 2**

**NOVEMBER 2011**

**(12020152)**

**18 November (X-Paper)  
09:00 – 12:00**

**This question paper consists of 7 pages.**

**TIME: 3 HOURS**  
**MARKS: 100**

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**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. Keep sub-sections of questions together.
  5. Rule off across the page after each completed question.
  6. Start each question on a NEW page.
  7. Sketches should be neat, clear and done with a pencil.
  8. Write neatly and legibly.
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**SECTION A****QUESTION 1: GENERAL**

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 – 1.10) in the ANSWER BOOK.

- 1.1 An arch soffit support is also called ...
- A extrados.
  - B centering.
  - C voussoirs.
  - D key stone.
- 1.2 ... is a mixture of cement, aggregate sand and stones.
- A Mortar
  - B Slab
  - C Concrete
  - D Claybrick
- 1.3 Most clay bricks have small holes called ...
- A wheep.
  - B openings.
  - C wheep holes.
  - D cores.
- 1.4 Temporary supports keep a door and window frames ... during construction.
- A level
  - B plumb and brace
  - C square
  - D not damaged
- 1.5 We use a ... to neaten the mortar joints between two masonry units.
- A ranking tool
  - B joint ruler
  - C vee-jointingtool
  - D plastering tool
- 1.6 ... is used to cut clay bricks.
- A Bolster chisel
  - B Flat hammer
  - C Scotch hammer
  - D Flat chisel

- 1.7 ... is a type of dark, grey stone that splits easily into flat layers.
- A Slade
  - B DPC
  - C DPM
  - D Bitumen
- 1.8 The deformation in time under stress is referred to as ...
- A unrestrained.
  - B carbonation.
  - C screed.
  - D creep.
- 1.9 Brick force provides ... reinforcement in masonry work to control cracking.
- A plumb
  - B horizontal
  - C tension
  - D stress
- 1.10 When return corners are reinforced with steel rods, they must be bent at an angle of ...
- A 45°.
  - B 95°.
  - C 76°.
  - D 90°.

**[10]****QUESTION 2: INTRODUCTION AND BACKGROUND**

Complete the following sentences by using the words given in the list below. Write only the word(s) next to the question number (2.1 – 2.8) in the ANSWER BOOK.

control joints; Garden wall bond; cavity wall; bonded wall; reinforcing; English bond; wall tie; crimp wires; brick force; Stretcher bond

- 2.1. To make it stronger. (1)
- 2.2. Bricks are laid in alternating courses of stretchers and headers. (1)
- 2.3. Joint designed to permit relative movement of sections of masonry structure or wall to occur without impairing the functional integrity of the masonry structure or wall. (1)
- 2.4. Used in collar-jointed walls at vertical and horizontal centres that do not exceed 450 mm. (1)

- 2.5 Is a mechanical fastener which connects leaves of masonry to each other or to other materials. (1)
- 2.6 Simply made of units and mortar. (1)
- 2.7 Have two units built parallel to each other, but there is a much bigger space between the two units. (1)
- 2.8 Usually have three courses of stretchers to one header, however people get variations of this bond. (1)
- [8]**

### QUESTION 3: SETTING OUT MASONRY WALLS

- 3.1 Briefly explain the importance of drawing in the building and construction industry. (4)
- 3.2 Name FOUR masonry tools which are used for marking out the exact places where we will build the walls and areas of doors and windows. (4)
- 3.3 State the uses of the following masonry tools:
- A Pointing trowel (1)
  - B Gauging trowel (1)
  - C Ranking tool (1)
  - D Chalk line (1)
  - E Hawk (1)
  - F Straight edge (1)
- 3.4 According to the NHBRC (Nation Home Builder Registration Council) which FIVE steps should be taken when checking for level? (5)
- 3.5 Define the following terms:
- 3.5.1 Plaster (2)
  - 3.5.2 Stake (2)
- 3.6 Explain how you would take care and maintain a builder's trowel. (2)
- [25]**

**QUESTION 4: BASIC CONSTRUCTION OF MASONRY WALLS**

- 4.1 The national building standards require masonry to use the DPC when building structures.
- 4.1.1 What is the purpose of the damp proof course and what is it made of? (2)
- 4.1.2 State the difference between the DPC and DPM. (2)
- 4.2 List SIX places where DPC must be placed when constructing a building. (6)
- 4.3 Show by means of a sketch, the two courses of a double-leaf or collar jointed wall. Course 1 and Course 2. (6)
- 4.4 Show by means of a diagram, the different ways which mortar joints can be finished in order to create the joint profiles. (9)
- [25]**

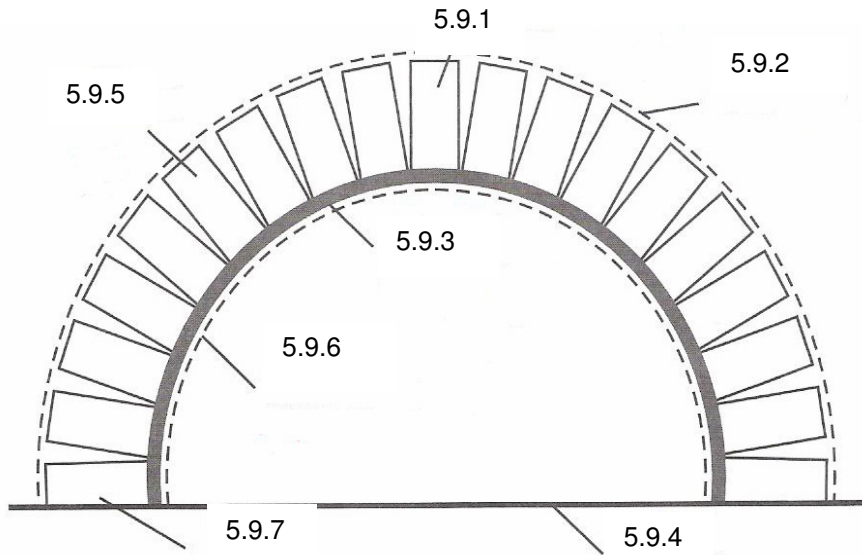
**QUESTION 5: ADVANCED CONSTRUCTION OF MASONRY WALLS**

- 5.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (5.1.1 – 5.1.5) in the ANSWER BOOK.
- 5.1.1 Racking back is the carrying out of stepped courses of bricks meant to assist bonding of masonry. (1)
- 5.1.2 Brickforce provides tension reinforcement in masonry work to control cracking. (1)
- 5.1.3 The two vertical parts of a door frame are called lugs. (1)
- 5.1.4 When something is precast, it means that we order it and they will deliver it to us. (1)
- 5.1.5 The process during which concrete is allowed to gain strength is called stress. (1)
- 5.2 List THREE types of bond-block lintels. (3)
- 5.3 Briefly explain the *reinforcing at control joints*. (2)
- 5.4 Name TWO types of roof anchors. (2)
- 5.5 Explain what a composite beam is. (3)
- 5.6 Why is it important to have roof plans? (2)

5.7 Briefly explain the use of an anchor. (3)

5.8 List THREE types of materials used to seal control joints. (3)

5.9 Label the following figure of the masonry arch by giving the arch terminology. Write only the answer next to the question number (5.9.1 – 5.9.7) in the ANSWER BOOK.



(7)

5.10 Describe the implications, when a lintel is built without detailed drawings. (2)

[32]

**TOTAL: 100**