higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MASONRY
NQF LEVEL 2

(12020152)

22 November 2018 (X-Paper)
09:00–12:00

Drawing instruments may be used.

This question paper consists of 6 pages.

NCV

TIME: 3 HOURS
MARKS: 150

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. Rule off across the page after each completed question.
5. Write neatly and legibly.

NCV

QUESTION 1: GENERAL

1.1 Choose a description from COLUMN B to match an item in COLUMN A. Write only the letter (A–I) next to the question number (1.1.1–1.1.8) in the ANSWER BOOK.

	COLUMN A		COLUMN B
1.1.1	Mortar	A	mixture of fine aggregates, course aggregates and water
1.1.2	Bed joint	B	also known as bed-joint reinforcement
1.1.3	Perpend joint	C	the centre brick of the arch that locks the arch together
1.1.4	Concrete	D	the carrying out of stepped courses of bricks meant to assist bonding of masonry
1.1.5	Brickforce	E	horizontal joint between each course of bricks
1.1.6	Key brick	F	the bricks of the wall can be interlocked as the wall construction proceeds
1.1.7	Raking back	G	vertical joint between two bricks
1.1.8	Voussoirs	H	bricks that form the arch
		I	a mixture of fine aggregates and water

(8 × 1) (8)

1.2 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write 'True' or 'False' next to the question number (1.2.1–1.2.7) in the ANSWER BOOK.

1.2.1 A mechanical fastener which connects the two leaves in a cavity wall is called a wall tie.

1.2.2 A pre-stressed concrete lintel is made on site and contains steel that has been pre-stressed as reinforcement.

1.2.3 D.P.C. assists with moisture penetrating through the walls and acts as a barrier for water.

1.2.4 The 3 : 4 : 5 methods can be used to check that the corner is at a right angle.

1.2.5 According to current building standards, it is not necessary to include D.P.C. in new buildings.

1.2.6 A soffit is the underside of an architectural feature, such as a lintel.

1.2.7 Bricks and blocks are known as masonry units.

(7 × 1) (7)

[15]

QUESTION 2: INTRODUCTION AND BACKGROUND

2.1 Briefly explain the history of bricks. (4)

2.2 Name the document in which the standard thickness of walls is given. (1)

2.3 According to the current prescribed National Standards we no longer use terms such as load-bearing walls because that terminology is outdated.

Give THREE reasons why we do not refer to load-bearing walls. (3)

2.4 Give the correct term for the following:

The hollow underneath a clay brick which prevents the brick from moving on the wet mortar. (1)

[9]

QUESTION 3: SETTING OUT MASONRY WALLS

3.1 Bricklayer's tools can be divided into FOUR main groups.

List the FOUR main groups of bricklayer's tools. (4)

3.2 Plasterers plaster blank walls to make them more attractive and to allow for the painting thereof.

List FIVE tools used for plastering walls. (5)

3.3 Explain why foundation footings should be horizontal and flat. (4)

3.4 A site foreman is in charge of setting out a new building. The corners of the building must be squared but the foreman does not have a steel square to ensure that this is the case.

Name TWO other methods that can be used to ensure that the corners of a building are square. (2)

3.5 It is very important to understand the drawings used during the construction phase. ALL walls, profiles and the building need to be set up correctly.

3.5.1 Name the consultant in charge of drawing up the plans for the construction project. (1)

3.5.2 Give TWO main reasons for using a site plan. (2)

3.5.3 List THREE main reasons for using a floor plan. (3)

3.6 Give the advantage of using a gauge rod. (2)

3.7 What does 'OHS' in the Act stand for? Write out the abbreviation in full. (1)

[24]

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QUESTION 4: BASIC CONSTRUCTION OF MASONRY WALLS

4.1 Explain the following terms as used in civil engineering:

4.1.1 Single leaf wall

4.1.2 Double leaf wall

4.1.3 Bed-joint reinforcing

4.1.4 English bond

4.1.5 Stretcher bond

4.1.6 Damp-proof course

(6 × 2) (12)

4.2 List SIX reasons for installing a damp-proof course when building a construction. (6)

4.3 Name THREE advantages and THREE disadvantages of using D.P.C. on a structural building. (3 × 2) (6)

[24]

QUESTION 5: ADVANCED CONSTRUCTION OF MASONRY WALLS

5.1 According to SANS 2001: CM1, how long should a lintel be propped before the props can be removed? (1)

5.2 Give a reason why lintels should be propped during installation. (1)

5.3 Explain the procedure used when setting up and building a window frame. (5)

5.4 Give a word(s) for each of the following descriptions by choosing a word(s) from the list below. Write only the word(s) next to the question number (5.4.1–5.4.5) in the ANSWER BOOK.

racking back; toothing; non-structural wall; structural wall; control joint; pre-cast concrete; in-situ concrete; lintel; curing

5.4.1 Concrete placed in a specific mould or position on site

5.4.2 A beam or masonry unit placed over an opening to provide reinforcement

5.4.3 The process of allowing atmospheric conditions to dry and harden materials once it has been cast

5.4.4 A method that allows bricks to be interlocked as the construction proceeds

5.4.5 Walls that are usually internal and do not carry the load of the roof

(5 × 1) (5)

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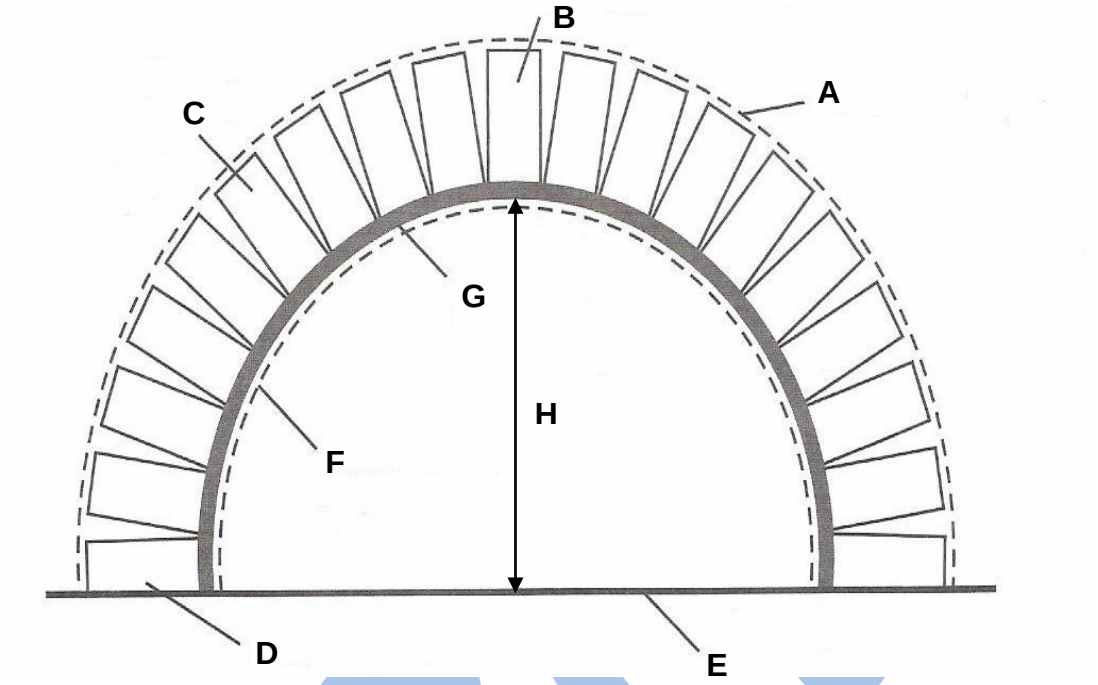
5.5 The diagram below illustrates the construction of an arch used above an opening in a new house.



5.5.1 Correctly name the parts marked A–H in the ANSWER BOOK. (8)

5.5.2 Name the type of arch shown it the above diagram. (1)

5.6 Draw a neat diagram showing the control joint between an existing wall and a new wall. (5)

5.7 Brickforce is reinforcing wire used between courses to strengthen walls.

Name TWO different brickforce patterns.

(2)
[28]

TOTAL: 100

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