higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MASONRY
NQF LEVEL 3

(12020353)

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

This question paper consists of 5 pages.

NCS

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.

NCV

QUESTION 1: GENERAL

Choose a description from COLUMN B that matches a term in COLUMN A. Write only the letter (A–K) next to the question number (1.1.1–1.1.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.1	Jamb	A	vertical joint
1.2	Course	B	short pieces of wire built into brickwork to keep two leaves together
1.3	Aggregate	C	mixture of sand, water and cement
1.4	Lugs	D	brickwork from floor slab (DPC) up to wall plate level
1.5	Roof ties	E	two leaves parallel to each other and joined together
1.6	Wall ties	F	layer of bricks, stones or hollow units in wall
1.7	Arch	G	post that forms the side of door or window
1.8	Superstructure	H	strips of metal fixed into sides of wire and built into walls to secure frames to brickwork
1.9	Mortar	I	arrangement of bricks over an opening
1.10	Collar-jointed wall	J	lengths of hoop iron or strands of wire built into walls to secure roof to walls
		K	hard, inert material (sand, gravel or stone) mixed with cement and water to form concrete

(10 × 1) **[10]**

QUESTION 2: CAVITY WALL CONSTRUCTION

2.1 Briefly explain the term *cavity wall*. (2)

2.2 Name SIX types of materials used as damp-proof courses. (6)

2.3 Illustrate the difference between a single-leaf wall and a cavity wall by means of a neat sketch. (6)

2.4 Explain the purpose of a wall tie. (2)

2.5 Compare *cavity wall construction* with *solid wall construction* listing THREE advantages and THREE disadvantages of each. (6)

2.6 Briefly discuss how to remove mortar droppings and other debris that have fallen into the cavity. (5)

2.7 Explain why a damp-proof course must be laid at all windows and outside doorframes. (3)

[30]

QUESTION 3: BASIC MASONRY WALL CONSTRUCTION WITH HOLLOW UNITS

3.1 Sketch a vertical section through a window clearly showing the following:

- Concrete-filled lintel blocks
- Quarry tile
- Sill block
- Damp-proof course below the window
- Window frame
- Adjustable props
- Reinforcement inside lintel block

(7 × 1) (7)

3.2 Explain *shell bedding* with regard to hollow units. (2)

3.3 Briefly explain each of the following terms:

3.3.1 Jointing (2)

3.3.2 Pointing (2)

3.4 Make a large, neat sketch to show how a level mark is transferred from one peg to another by means of a spirit level. (6)

3.5 Explain the following joints:

3.5.1 Bed joints (2)

3.5.2 Mortar joints (2)

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3.6 Explain the term *thumbprint hard mortar.* (3)

3.7 Why are lugs not necessary when building with sash block? (2)

3.8 Why is a quarry tile not used when building with blocks? (2)
[30]

QUESTION 4: ADVANCED MASONRY WALL CONSTRUCION

4.1 Roof anchors are built into masonry walls to keep the roof structure in position and to anchor it against wind uplift.

Give FIVE requirements (or guidelines) you would consider when installing roof anchors. (5)

4.2 Describe *brick force* and of what it is made. (2)

4.3 Draw, to scale 1:10, the front elevation of a soldier brick arch three courses deep over a span of 950 mm.

Show the surrounding brick work built in stretcher bond.

No stopped ends are required. (15)

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

4.5 Why is it important to cure concrete? (2)

4.6 What is the difference between precast lintels and in situ concrete beams? (4)
[30]

TOTAL: 100

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