



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

**NATIONAL CERTIFICATE
AUGUST EXAMINATION
BUILDING AND CIVIL TECHNOLOGY N3**

23 JULY 2014

This marking guideline consists of 6 pages.

MARKING INSTRUCTIONS

1. Mark neatly with a red pen
2. Do not draw lines through wrong answers.
3. Write the marks for each answer in the right margin and the TOTAL for a whole question in a circle in the left margin.
4. Use your own discretion should there be more than one possible correct answer/formula/sketch that does not appear on the memorandum. Please evaluate it and allocate marks accordingly.

QUESTION 1

- 1.1 True
- 1.2 False
- 1.3 True
- 1.4 True
- 1.5 True
- 1.6 False
- 1.7 False
- 1.8 True
- 1.9 False
- 1.10 False

(10 x 1) [10]

QUESTION 2

- 2.1 From the site boundaries measured set out the proposed building, increasing the area by ± 1 m. ✓ Punch in two pegs (± 2 m long pegs) ✓ 1 m away from each corner in line with the building line in all four corners. ✓ Because of the length of the pegs a traveller of 1,5 m would be appropriate. ✓ The formation level plus/minus the benchmark, ✓ plus the length of the traveller will give the staff reading on all eight pegs sight rails. ✓

(6)

- 2.2
- 2.2.1 Strip foundation
 - 2.2.2 Raft foundation
 - 2.2.3 Column foundation
 - 2.2.4 Cantilevered foundation

(4 x 1)

(4)
[10]**QUESTION 3**

- 3.1 Cavity walls consist of two skins of brickwork or block work with a cavity in between. ✓ This type of wall gives a better resistance to moisture and it also provides thermal insulation. ✓

(2)

- 3.2
- Lead
 - Bitumen
 - Slate
 - Copper
 - Asphalt
 - Polythene

(6 x 1)

(6)

- 5.2
- Durability:✓ the material to be used must have a reasonable life span.✓
 - Resistance:✓ the floor material should withstand a heavy load placed on top of it.✓
 - Economical:✓ the initial capital investment and the maintenance of the floor area.✓
 - Cleaning operations:✓ the floor should be easy to clean.✓
 - Non-slip qualities:✓ the material used for particular traffic or storage purposes should be of a non-slip quality to ensure safety.✓
 - Appearance:✓ it is important to consider the type of material to be applied for a specific room.✓

(6 x 2) (12)
[15]

QUESTION 6

- 6.1 Potholes are caused by localised disintegration. (1)
- 6.2
- Barrier kerbstone with channel
 - Semi-mountable kerbs
 - Barrier kerbing
- (3 x 1) (3)
- 6.3
- Volume of concrete = $l \times b \times d$
 $= 13 \times 0,610 \times 0,305$ ✓
 $= 2,418 \text{ m}^3$ ✓
- Cost of concrete = $2,418 \times \text{R}450$ ✓
 $= \text{R } 1088,1$ ✓ (4)
- 6.4
- Square area = $\frac{9000}{100}$ ✓
 $= 90 \text{ m}^2$ ✓ (2)
 [10]

QUESTION 7

- 7.1
- It requires no expansion pipes in the system.
 - It does not rely on a supply tank for its feed.
 - It is cheaper because it requires less labour and fewer materials for its installation and function.
 - It is compact, because it requires very little space. It can be installed in a confined space.
- (4 x 1) (4)

7.2	7.2.1	U		
	7.2.2	RWP		
	7.2.3	WB		
	7.2.4	FV		
	7.2.5	IC		
	7.2.6	SS		
			(6 x 1)	(6)
				[10]

QUESTION 8

8.1	8.1.1	The base is the layer that distributes the weight✓ of the traffic over the road bed or sub-base.✓		
	8.1.2	The haunch is the outmost part of the width✓ of the carriageway.✓		
	8.1.3	The base course is the bottom layer of a bituminous road,✓ which acts as a cushion to the wearing course (surfacing).✓		
	8.1.4	The crown of the road is the highest point✓ in the cross section of a cambered road.✓		
	8.1.5	The formation is the surface of the ground in its final shape✓ after the completion of the earthworks.✓		
			(5 x 2)	(10)
8.2		<ul style="list-style-type: none"> • Paving enhances the appearance✓ of the property or area.✓ • Paving is used in driveways or at entrances✓ that are subjected to heavy traffic.✓ • Paving is used in areas where a hard-wearing surface✓ with low maintenance is required.✓ • Paving is used to make paths for people✓ to walk in a garden.✓ • Paving is used where the natural soil of the site✓ is unsuitable for other purposes (such as gardening).✓ 		
			(5 x 2)	(10)
				[20]

TOTAL: 100