



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BUILDING AND CIVIL TECHNOLOGY N3

10 August 2021

This marking guideline consists of 7 pages.

QUESTION 1

- | | | |
|-----|--------|---|
| 1.1 | 1.1.1 | B |
| | 1.1.2 | A |
| | 1.1.3 | D |
| | 1.1.4 | C |
| | 1.1.5 | B |
| | 1.1.6 | D |
| | 1.1.7 | C |
| | 1.1.8 | D |
| | 1.1.9 | B |
| | 1.1.10 | C |

(10 × 1) (10)

- 1.2
- Well-balanced personality
 - Good perception and imagination
 - Ability to judge fairly
 - Good sense of judgement and ability to plan strategically
 - Relevant vocational skills, knowledge
 - Willingness to accept full responsibility for his/her activities
 - Ability to acquire experience and build on it

(Any 6 × 1) (6)
[16]

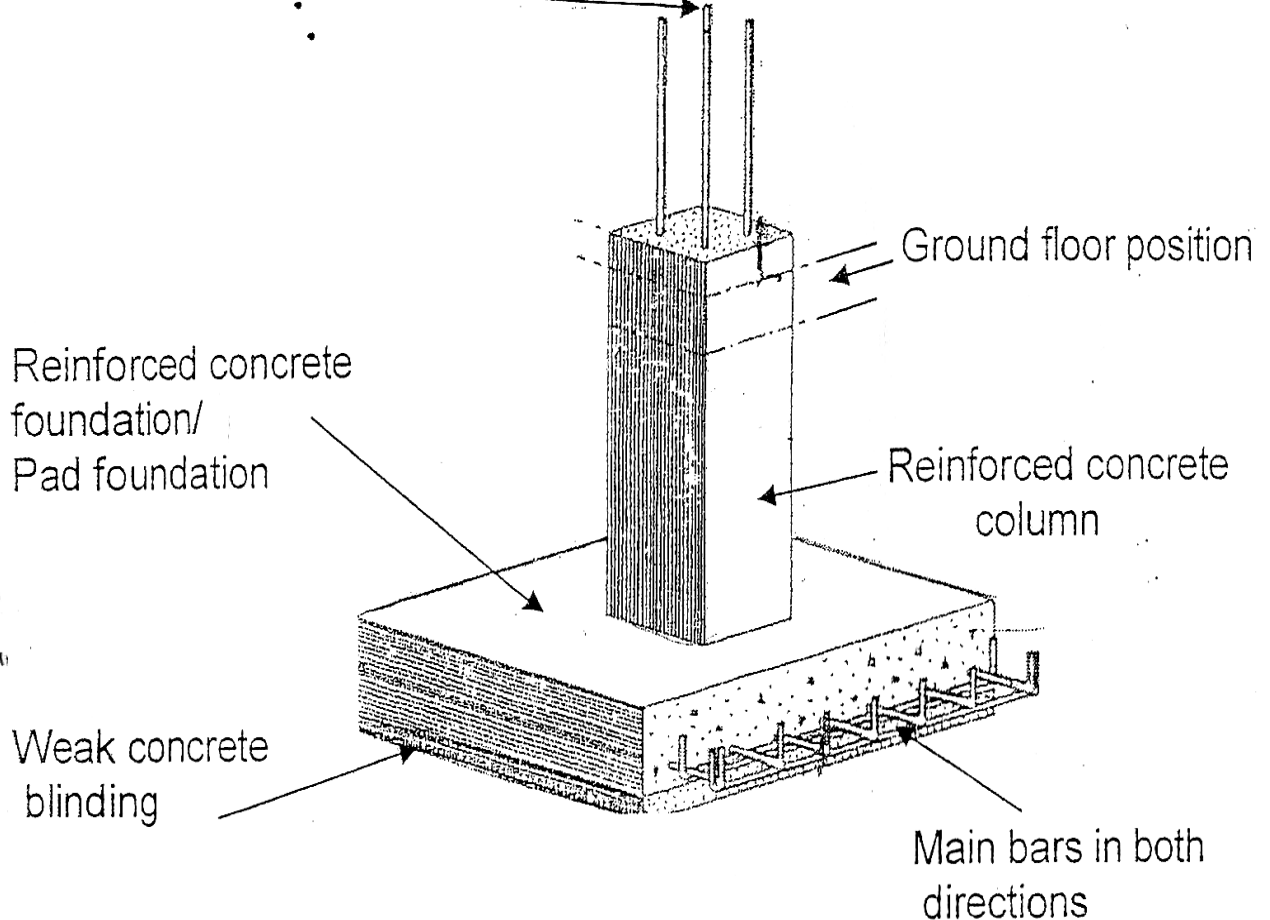
QUESTION 2

- 2.1
- Horizontal foundation excavation
 - Spirit level and straight edge
 - Dumpy level and staff
 - Pipe level (u-tube)
 - Stepped foundation level

(5)

2.2

Starter bar for columns



MARK ALLOCATION
Labels – 3
Correct sketch – 3
Neatness – 2
Total – 8

(8)

2.3

Stands on its own, having two rows of standards connected by transoms

(3)

[16]**QUESTION 3**

3.1

- Soil not able to support its own weight
- Weakening trench embankments caused by rain and frost
- Vibration caused by heavy traffic
- Placing of heavy loads of soil too near side of excavation
- Type of soil (sand pockets)
- Excavation in previously disturbed soil
- Heavy objects may impact on sides of excavation

(Any 4 × 1)

(4)

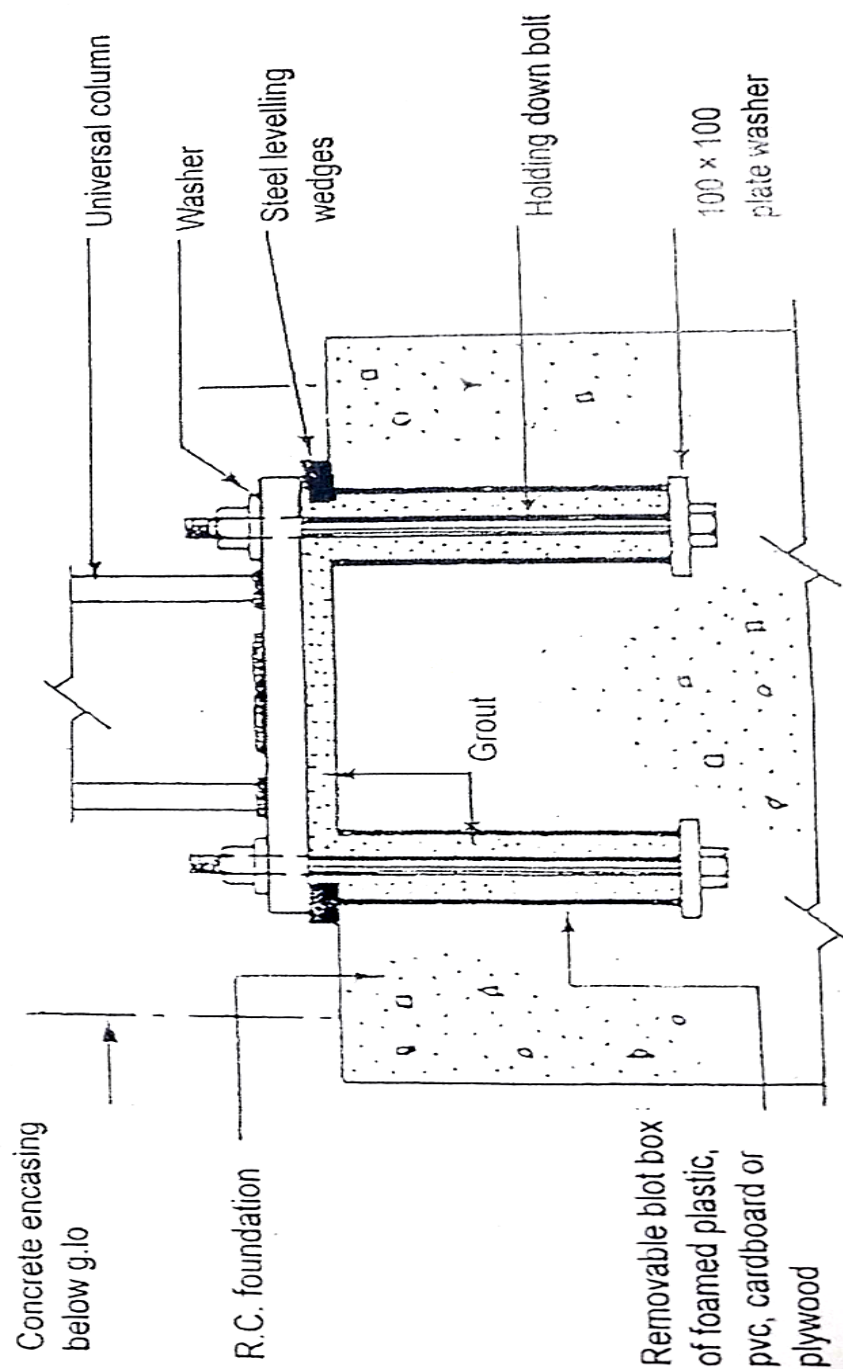
BUILDING AND CIVIL TECHNOLOGY N3

- [16]**

QUESTION 4

- (6)

4.3



MARK ALLOCATION

Labels – 3

Correct sketch – 3

Neatness – 2

Total – 8

(8)
[16]

QUESTION 5

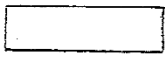
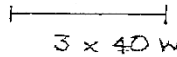
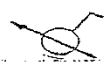
5.1 That portion of a road reserved only for pedestrians. (people to walk on) (2)

- 5.2
- Strength
 - Durability
 - An appropriately attractive finish
 - Stability
 - Moisture resistance
 - Thermal properties
 - Acoustic properties
 - Fire resistance

(Any 5 × 1)

(5)

5.3

SYMBOL / SIMBOOL	
 ① DISTRIBUTION BOARD VERDEELBORD	 ② EARTH GRONDDRAAD
 ③ FLUORESCENT FLUORESSEER INGLIG	 ④ TWO-WAY SWITCH TWEEWEGSKAKELAAR
 ⑤ SOCKET OUTLET SOKKITGANG	 ⑥ ELECTRICITY OUTLET ELEKTRISITEITSMETER
 ⑦ REGULATING SWITCH REGLSKAKELAAR	 ⑧ ONE-WAY SWITCH THREE POLE EENWEGSKAKELAAR DRIEL POLE

MARK ALLOCATION

Labels – 3

Correct sketch – 3

Neatness – 2

Total – 8

(8)

5.4	• Bathroom floor • Toilet floor • Stoeps • Halls • Offices	(Any 1 × 1)	(1)
			[16]

QUESTION 6

6.1	Mainly in easy maintenance and durable✓ areas such as common entrance halls to a block of flats✓		(2)
6.2	Manufactured from moulded clay✓ ground and mixed with water and fired (baked) in a kiln at a high temperature.✓		(2)
6.3	6.3.1 Highest point in cross section of cambered road		
	6.3.2 Outermost part of width of carriageway		
	6.3.3 Fine crushed aggregate coated with bitumen laid to thickness of 25 mm		
	6.3.4 Layer of material on which traffic is carried	(4 × 1)	(4)
6.4	6.4.1 Area of wall = $16 \times 3 \frac{1}{2}$ ✓ = 48 m^2 (1)✓ Door opening = $2 \times 1,8$ (1 1/2) = $3,6 \text{ m}^2$ ✓ Window opening = $1,5 \times 1,5$ (1/2) = $2,25 \text{ m}^2$ (1)✓ Total area = $48 - (3,6 + 2,25)$ (1)✓ = $48 - 5,85$ (1/2) = $42,15 \text{ m}^2$ (1)✓		
	6.4.2 Number of bricks required = $42,15 \times 100$ (1/2)✓ = 4 215 (1)✓		
	6.4.3 Amount of sand required = $4 \text{ 215} / 1 \text{ 000}$ (1/2)✓ = 4,215 tonnes (1)✓		
	6.4.4 Labour cost = $42,15 \times \text{R}200$ (1/2)✓ = R8 430 (1 1/2)✓	(4 × 3)	(12)
			[20]
TOTAL:			100