higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

ARCHITECTURAL GRAPHICS AND TECHNOLOGY
(Second Paper)
NQF LEVEL 4

12 March 2020

This marking guideline consists of 4 pages.

Copyright reserved

QUESTION 1

1.1 C
1.2 B
1.3 D
1.4 C
1.5 A
1.6 D
1.7 D
1.8 A
1.9 D
1.10 B

(10 × 2) **[20]**

QUESTION 2

2.1 A competent person within the building construction sector should have enough skills and knowledge to do an appointed task to a satisfactory standard. A competent person also undertakes to comply with the Building Standards Act. Specifically, the completion of the form referred to in regulation A19 for the local authority. (4)

2.2 A geotechnical engineer is appointed to do a soil analysis of a specific site. He will instruct the builder to dig several trial holes to various depths on the site. He will then take soil samples for analysis. He uses this information to determine the type of ground because this affects the type of foundations that will be needed, for example, if the ground has clay layers, the geotechnical engineer will recommend steel to be cast in the foundations and even the walls. This will allow the structure to bend as the soil expands and contracts during winter and summer months. If one does not use the services of this professional, one can easily compromise the structure as severe cracking can result if the structure is not properly designed for the type of soil in which it was built. (4)

[8]

QUESTION 3

3.1
- Steel
- Concrete
- Timber (3 × 2) (6)

3.2
- Dogleg
- Spiral
- Straight (3 × 2) (6)

3.3 200 mm (2)

3.4 250 mm (2)

3.5 900 mm (2)

[18]

Copyright reserved

QUESTION 4

4.1	4.1.1	29%		
	4.1.2	37.3%		
	4.1.3	43,5%		
	4.1.4	26%		
	4.1.5	23,9%		
			(5 × 3)	(15)
4.2	4.2.1	450		(3)
	4.2.2	9 358		(3)
	4.2.3	642		(3)
	4.2.4	9 245		(3)
	4.2.5	755		(3)
	4.2.6	Water closet		(3)
	4.2.7	Rodding eye		(3)
	4.2.8	Manhole		(2)
				[38]

QUESTION 5

5.1
- Tendering costs
- NHBRC registration fees
- MBA membership fees
- Professional indemnity
- Storage costs
- Materials
- Labour
- Fuel
- Vehicle
- Repayment costs
- Electricity
- Water
- Insurance
- Telephone and cell phone
- Delivery charges
- Equipment rental
- Subcontractor costs
- Depreciation on machinery and vehicles
- Tool replacement
- Rubble removal
- Demolition and rebuilding defective work
- UIF
- Skill training levy
- Security bank overdraft fees
- Bank charges
- Safety equipment
- Inspection certificates and toilet rental

(Any 6 × 1) (6)

Copyright reserved

5.2
- Geotechnical investigation
- Site clearance
- Setting out strip foundations
- Excavating foundation trenches
- Soil poisoning below the foundations and floor
- Inspection of foundations
- Casting foundations to geotechnical specifications
- Building foundation brickwork
- Backfilling
- Installing DPM
- Making sure backfill earth is compacted
- Installing electrical conduits
- Casting surface bed (Any 10 × 1) (10)

[16]

TOTAL: 100

Copyright reserved