higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

MATERIALS
NQF LEVEL 2

XX February 2020

This marking guideline consists of 6 pages.

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QUESTION 1

1.1 1.1.1 D
1.1.2 E
1.1.3 C
1.1.4 B
1.1.5 A

(5 × 1) (5)

1.2
- Safety
- Combustibility
- Economics
- Recycling
- Material properties (Any 3 × 1) (3)

1.3
- Trade with other countries can grow if the products are of a good quality.
- It results in a better-end product.
- When writing contract specifications, one can refer to various SANS documents. (Any ONE) (1)

1.4
- Reusing used materials.
- Recycling is the process whereby materials are reused for another purpose. (Any ONE) (1)

[10]

QUESTION 2

2.1 2.1.1 They are formed when magma✓from beneath the earth cools and solidifies.✓

2.1.2 Sedimentary rocks are formed from loose particles✓ of rocks.✓

2.1.3 They are formed from igneous or sedimentary rocks and are subjected to high temperatures and pressure✓ by being covered by molten igneous rocks.✓

(3 × 2) (6)

2.2
- Topography
- Geological factors
- Climate
- Time
- Presence of plants and organisms (Any 3 × 1) (3)

2.3 Core/Mantle (1)

[10]

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QUESTION 3

3.1
- Expansive or active soil
- Dolomite contamination
- Collapsing sand (3)

3.2
- Strip footing
- Pad footing
- Raft foundation
- Pile foundation (Any 3 × 1) (3)

3.3 3.3.1 Static compaction is when the dead weight of a compacting machine presses down onto the soil✓ and effectively compacts the fine-grained soil on the upper layers.✓

3.3.2 A downward force is applied to the soil by a machine with an engine✓ to press the soil together.✓

(2 × 2) (4)
[10]

QUESTION 4

4.1
- Primitive clamp/field kiln
- Transverse arch kiln
- Continuous tunnel kiln (3)

4.2
- Overburnt bricks are bricks that when fired✓ received too much heat✓
- Underburnt bricks are bricks that when fired✓ received too little heat.✓ (4)

4.3
- They are used to create a decorative effect.
- They are used in areas that are resistant to chemicals. (2)

4.4 4.4.1 Face brick extra.

4.4.2 Nonfacing plastered

(2 × 1) (2)

4.5
- Solid
- Cellular
- Hollow (3)

4.6
- They prevent moisture from penetrating the walls.
- They save time and mortar. (Any ONE) (1)

[15]

QUESTION 5

5.1
- It increases the strength of concrete.
- The permeability of the concrete is improved.
- The concrete can last longer.
- It creates a smooth surface finish. (4)

5.2
- Pozzolana
- Slaked lime (2)

5.3 Concrete is only strong in compression✓ and not in tension.✓ It is weaker when a force tries to bend it.✓ (3)

5.4 Steel (1)

5.5 Safety gloves (1)

5.6 It is a grey powdery material which is made from limestone and shale which is used in the concrete-making process. (2)

5.7 5.7.1 The chlorides in the seawater cause accelerated rusting of the steel embedded in the concrete.

5.7.2 Clay reduces the bonding capabilities of concrete.

(2 × 2) (4)

5.8
- It reduces the concrete mixing facilities that are required on site.
- Establishment costs are less and more space is available on site.
- Large quantities of concrete can be placed in a short time.
- A reputable producer will provide the concrete to your requirements at the time that you need it. (4)

5.9 The consistency✓ and compressive strength of concrete is tested.✓ (2)

5.10 Delaying to place concrete for lengthy periods can reduce✓ the effectiveness of the concrete.✓ (2)

[25]

QUESTION 6

6.1
- Water
- Cement
- Sand
- Lime (4)

6.2 Common cement:
- Does not make a finer mortar texture
- Mortar is not waterproof
- Cannot accommodate the addition of an admixture (3)

6.3
- Fills cracks or gaps
- Bonds building blocks
- Supports the building
- Repairs a building where defects are found (Any 3 × 1) (3)

[10]

QUESTION 7

7.1
- Weatherproofing
- Aesthetics of the final appearance of the walls (2)

7.2
- It makes plaster more workable.
- It is added if the sand is lacking fine particles. (2)

7.3 The plaster will not adhere/bond well. (1)

7.4
- To avoid waste
- To save money
- To avoid using a compromised mix
- To use the plaster before it sets (Any 2 × 1) (2)

7.5
- Hacking
- Applying a spatterdash coat
- Using bonding liquids
- Attaching wire mesh to the surface (Any 3 × 1) (3)

[10]

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QUESTION 8

8.1 8.1.1 A topping is a concrete mixture designed to be high in strength and comprising cement, sand, small stones and water.

8.1.2 Screeds are sand and cement mixes that are not considered to contribute to the underlying strength of the slab.

(2 × 2) (4)

8.2
- Chipping the surface at a much faster rate
- The work is done more efficiently
- A scabbler has several steel rods that are driven down onto the concrete surface in rapid succession. (3)

8.3
- Bonded screeds and toppings.
- Unbonded screeds and toppings
- Monolithic screeds and toppings (3)

[10]

TOTAL: 100

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