higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

NOVEMBER EXAMINATION

CARPENTRY AND ROOFING THEORY N2

22 NOVEMBER 2016

This marking guideline consists of 7 pages.

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QUESTION 1: SETTING OUT OF BUILDINGS

1.1 Boundary pegs
1.2 Level
1.3 Building line
1.4 Timber profiles
1.5 3:4:5 method
1.6 Foundation and walls
1.7 Builder's line
1.8 Spirit level
1.9 Trench lines
1.10 Trenches

(10 × 1) (10)
[10]

QUESTION 2: ROOF CONSTRUCTION

2.1 2.1.1 An overhang is that part of a roof where the rafter ends extend a certain distance from above the external walls to the outside of a building.

2.1.2 A wall plate is a timber member laid flat on the inner leaf of the supporting walls to provide a level bearing surface and spread the load of the roof.

2.1.3 A fascia board is a moulded and trimmed board applied to the end of overhangs; also to support the gutters.

2.1.4 A purlin is usually a 50 mm x 75 mm timber nailed across the top of the rafters at spacing up to 1150 mm to support metal or fibre cement sheeting.

2.1.5 A nail plate connector is a galvanised steel plate, punched to form a nail pattern and used as a connector to assemble roof trusses.

(5 × 2) (10)

NB: Any other logical and relevant description may be accepted as correct.

2.2 2.2.1 Plumb cut of common rafter
2.2.2 Seat cut of common rafter
2.2.3 True length of common rafter
2.2.4 Plumb cut of hip rafter
2.2.5 True length of hip rafter
2.2.6 Seat cut of hip rafter
2.2.7 Dihedral angle/backing bevel of hip rafter

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2.2.8 Edge cut of hip rafter
2.2.9 Edge cut of jack rafter
2.2.10 True length of jack rafter

(10 × 1) (10)
[20]

QUESTION 3: ROOF COVERING

3.1
- Class A: Metal sheets or fibre cement sheets (Any 1)
- Class B: Concrete tiles, clay tiles, thatch (Any 1)
- Class C: Metal roof tiles (3 + 3) (6)

3.2
- The cost must be considered.
- The roof covering must be water and hail-resistant.
- Must be resistant to rust and corrosion.
- It must be soundproof.
- The availability of the roof covering.
- The durability, mass and attractiveness. (Any 3 × 1) (3)

NB: Any other logical and relevant criteria may be accepted as correct.

3.3 3.3.1
- Clay tiles are made of clay and are fairly strong.
- They are shaped and dried in an oven.
- They are available in different shapes, sizes and colours.
- They resist warps and twists and are very effective in design.
- Clay tiles have excellent weather protection and due to their weight, are able to resist strong winds. (Any 3 × 1) (3)

3.3.2
- Wood shingles are thin sheets (slabs) of wood made of cedar, cypress and redwood.
- They are available in various lengths with a thickness of 19 mm which is tapered to a thickness of 3 mm.
- The commonly used shingle in South Africa is cedar which is a light-weight timber.
- It has a straight grain, and is red-brown in colour and durable.

(Any 3 × 1) (3)
[15]

NB: Any other logical and relevant answer may be accepted as correct.

QUESTION 4: CEILINGS

4.1
4.1.1 E
4.1.2 C
4.1.3 F
4.1.4 A
4.1.5 D
4.1.6 B

(6 × 1) (6)

4.2 Brandering is timber members, usually 38 mm × 38 mm, fixed to the bottom chord (tie beam) of roof trusses to support the ceiling boards. (2)

[8]

QUESTION 5: DORMER ROOF CONSTRUCTION

5.1
5.1.1 Trimmer
5.1.2 Joists
5.1.3 Double head-plate
5.1.4 Opening for dormer window
5.1.5 Double trimming rafter
5.1.6 Trimmed rafters
5.1.7 Trimmer
5.1.8 Built-up corner post
5.1.9 Studs
5.1.10 Head-plate

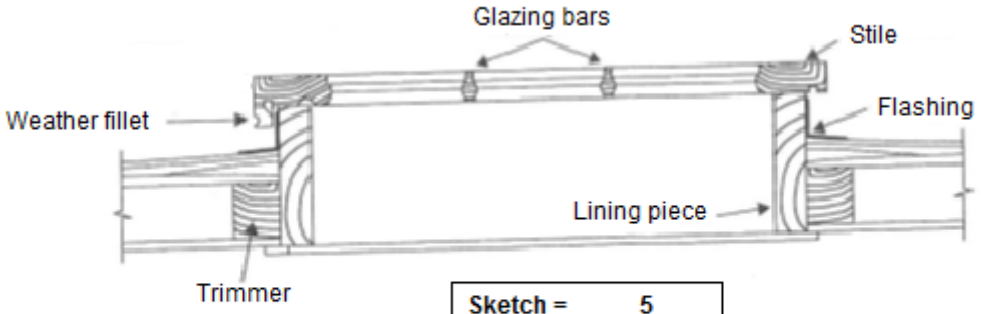
(10 × 1) (10)

5.2 Cheeks are the triangular parts on both sides of a dormer window. (2)

5.3
- Three-sided/square bay window
- Circular bay window
- Three-sided/splay or cant bay window (3 × 1) (3)

[15]

QUESTION 6: ROOF LIGHT CONSTRUCTION

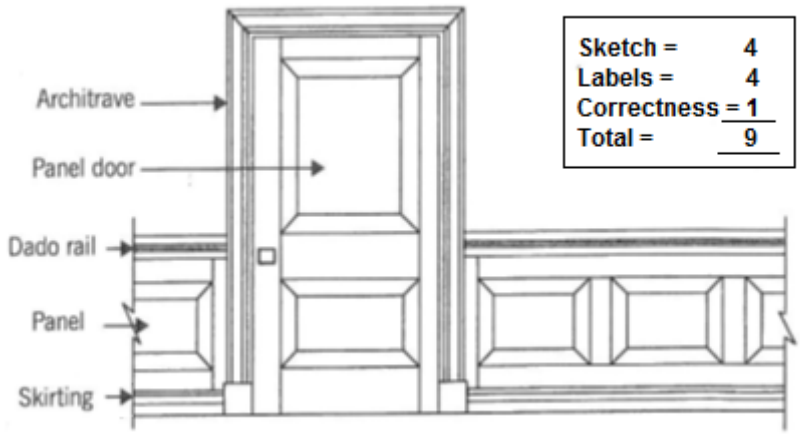


Sketch =	5
Labels =	5 max
Correctness =	2
Total =	12

[12]

QUESTION 7: THIS QUESTION IS FOR CARPENTRY CANDIDATES ONLY

7.1



Sketch =	4
Labels =	4
Correctness =	1
Total =	9

(9)

7.2
- Ledged doors
- Ledged and braced doors
- Framed, ledged and braced doors (3 × 1) (3)

7.3 In-situ partitioning is when a complete stud partition is prepared, erected and finished off on site. (2)

7.4
7.4.1 Distance piece
7.4.2 Waler
7.4.3 Form ties
7.4.4 22 mm shutter board
7.4.5 Adjustable steel props
7.4.6 Soldiers

(6 × 1) (6)

[20]

QUESTION 8: THIS QUESTION IS FOR ROOFING CANDIDATES ONLY

8.1 8.1.1 Copper:
- Copper is rust free
- It is fairly soft to work with
- It bends easily
- It Is malleable (Any 2 × 1)

8.1.2 Lead:
- Lead is very soft
- It is rust free
- It is malleable (Any 2 × 1)

8.1.3 Galvanised steel:
- It is rust resistant
- It is fairly hard
- But it bends easily (Any 2 × 1)

8.1.4 Aluminium:
- It is rust free
- It is very soft to work with
- It is malleable
- It is very light in mass
- It bends easily (Any 2 × 1)

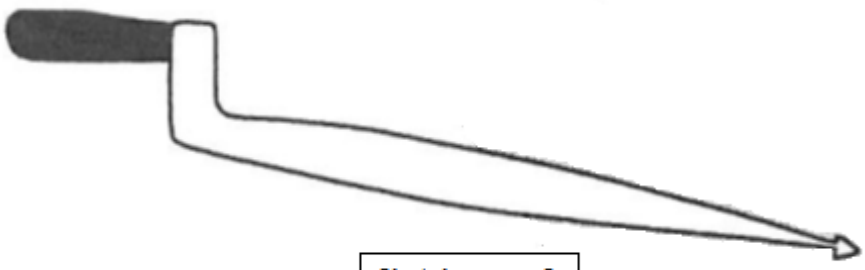
(4 × 2) (8)

NB: Any other logical and relevant advantage may be accepted as correct.

8.2 8.2.1 Back gutter
8.2.2 Back cover flashing
8.2.3 Lapped & soldered
8.2.4 150 mm lap
8.2.5 Stepped flashing
8.2.6 Side apron flashing
8.2.7 Front apron flashing
8.2.8 Front cover flashing

(8 × 1) (8)

8.3



Sketch =	2
Correctness =	2
Total =	4

(4)
[20]

NB: Any other logical and relevant answers which are given and which are not covered by this marking guideline may be accepted as correct.

TOTAL: 100

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