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Province of the
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**NATIONAL
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GRADE 12

SEPTEMBER 2020

**CIVIL TECHNOLOGY: WOODWORKING
MARKING GUIDELINE**

MARKS: 200

This marking guideline consists of 13 pages.

QUESTION 1: SAFETY AND MATERIALS (GENERIC)

- 1.1 1.1.1 2 (1)
- 1.1.2 228 mm (1)
- 1.1.3 900 mm (1)
- 1.1.4 150 mm (1)
- 1.1.5 Non-slippery layer (1)
- 1.2 Similar answer:
Prevents horizontal movement between the platform and structure (1)
- 1.3 Identify THREE of the following requirements that are applicable to the supplier of hazardous chemical substances:
- 1.3.1 First-aid measures must be indicated
- 1.3.4 Fire-fighting measures must be indicated
- 1.3.6 Storage instructions must be indicated (3 x 1) (3)
- 1.4 Minimum = 30° (1) and maximum = 50° (1) (2)
- 1.5 Similar answer:
Aluminium conducts electricity (1) and workers who use a ladder could be shocked (1) (2)
- 1.6 Describe the difference between the surface finish of a water-based paint and an oil-based paint:
Water-based – provide an elastic, flexible finish (1)
Oil-based – provide a hard, durable finish (1) (2)
- 1.7 Any THREE advantages of the curing of concrete:
- Increases strength
 - Decreases permeability
 - Improves durability
 - Reduces cracks
 - Makes concrete more watertight
 - Provides volume stability
 - Concrete can carry more weight (3 x 1) (3)
- 1.8 Briefly describe the powder coating process:
Plastic finish in powder form (1) is applied through a compressed air spray-gun (1) (2)


[20]

QUESTION 2: GRAPHICS, JOINING AND EQUIPMENT (GENERIC)

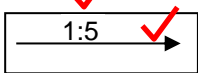
2.1 Answer the following questions with regard to the site plan on ANSWER SHEET A:

2.1.1 See ANSWER SHEET A (10)

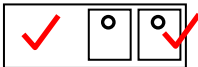
2.1.2 See ANSWER SHEET A (6)


2.2 2.2.1 Undisturbed earth  (2)

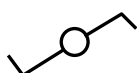
2.2.2 Plaster  (2)

2.2.3 Ramp with a slope of 1 : 5  (2)

2.2.4 Electrical meter  (2)

2.2.5 Sink unit – double  (2)

2.3 2.3.1  Unfinished wood (1)

2.3.2  Two-way switch (1)

2.4 When driven into place (1) it cannot be turned (1) (2)

2.5 Prevents backing off **OR** it acts as a lock nut (1)

2.6 18 mm (1)

2.7 2.7.1 1,35 m (1)

2.7.2 $1,412 - 1,285 = 0,127 \times 100 = 12,7\text{m}$ (0,1m leeway allowed) (3)

2.7.3 Minimum = 30 m (1) and maximum = 200 m (1) (2)

2.8 It can affect the measuring function of the tool. (1)

2.9 Batteries must be removed. (1)

[40]

TOTAL SECTION A: 60

QUESTION 3: CASEMENTS, CUPBOARDS, WALL-PANELLING AND QUANTITIES (SPECIFIC)

- 3.1 3.1.1 16 mm (1)
- 3.1.2 Stuck mould (1)
- 3.1.3 Rebate (1)
- 3.2 3.2.1 Drip groove (1)
- 3.2.2 Transom
Bottom rail of fanlight 60 mm x 44 mm
Putty
Ovol moulding
Windowpane/glass (3 x 1) (3)
- 3.2.3 Enhances the appearance and can open separately to allow ventilation (1)
- 3.3 ANSWER SHEET B (5)
- 3.4 3.4.1
- Top shelf/storage space
 - Hanging space
 - Shelving
 - Drawer unit (4)
- 3.4.2
- Melamine is waterproof
 - Easy to clean
 - Durable
 - Smooth finish
 - Improves appearance (Any 1) (1)
- 3.4.3 E = Front rail G = Side of cabinet
F = Handrail H = Kick plate (4)
- 3.5 Fanlight (1)
- 3.6 3.6.1 A = Cornice
B = Horizontal rough grounds
C = Quadrant mould (3)
- 3.6.2
- Provide storage space
 - Improves/enhances the aesthetic appeal of the room
 - Looks expensive (2)
- 3.7 A casement window can be defined as a window assembly that has at least one casement or vertically hinged sash (frame that holds the glass) (2)

[30]

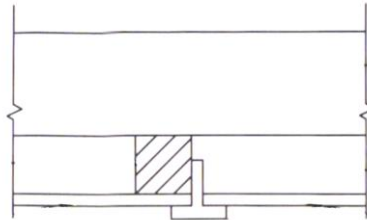
QUESTION 4: ROOFS, CEILINGS, TOOLS AND EQUIPMENT, AND MATERIALS (SPECIFIC)

- 4.1 4.1.1 A = Router B = Radial arm saw (2)
- 4.1.2 • Lubricate and adjust according to the manufacturer's instructions
• Clean the saw after use
• Repair or replace damaged electrical cords
• Use machinery only for the intended purpose
• Keep ventilation holes open and clean (2)
- 4.1.3 • Always wear safety goggles
• Use both hands to operate the machine
• Stand firmly and comfortably
• Wear a dusk mask when using the router
• The workpiece must be gripped firmly before starting the moulding (2)
- 4.2 • Gypsum ceiling board
• Cover strips
• Trapdoor panel
• Tie beam (2)
- 4.3 • Sand the wood with different grades of sandpaper
• Sand until it is smooth and free from scratches
• Remove all dust (3)
- 4.4 Hurricane clips:
• Securing purlins to rafter (roof truss)
• Securing trusses to wall plates
• Ideally used at eaves overhangs
• Where trusses cross each other or where truss members cross each other or meet at 90°
• To fix opposite faces of roof members
Storm clips: Securing roof tiles to the battens (2)
- 4.5 • Strength
• Density (2)
- 4.6 • King post positioned in the middle of the roof truss
• Brandering is nailed to the tie beam and to existing brandering
• Roof sheeting to cover the roof (3)
- 4.7 • Always wear safety goggles
• Wear a dusk mask when using the belt sander
• Inspect the power cord regularly for damage
• Avoid carrying the machine by the cord (2)

- 4.8 4.8.1 A. Tie beam
B. Brandering
C. Brandering
D. Trapdoor
E. Ceiling board (5)

4.8.2 Cover strips keep the panels in place (2)

4.8.3



Sectional view showing a metal T-strip (3)

- 4.9 4.9.1 A. Hipped end
B. Purlin
C. Ridge
D. Valley rafter
E. Overhang
F. Gable end (6)

4.9.2 75 mm x 50 mm (2)

- 4.10
- Must be able to withstand natural elements like rain, wind and corrosion
 - Must look expensive and must be able to improve the appearance of the building
 - Must be able to withstand fire
 - To insulate against heat and cold

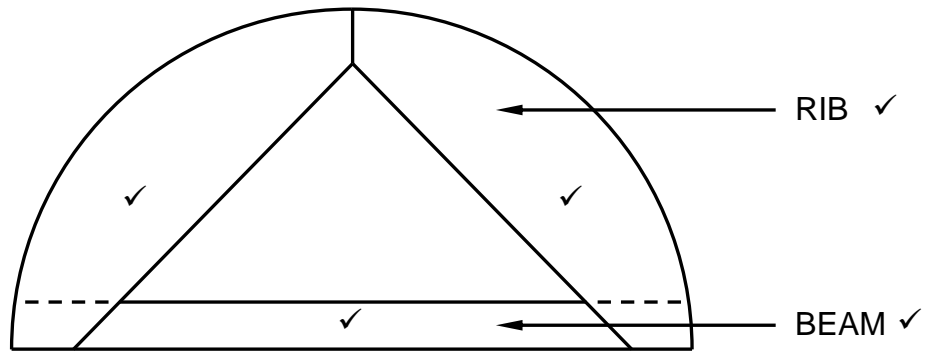
(2)

[40]

QUESTION 5: CENTRING, FORMWORK, SHORING AND GRAPHICS AS MEANS OF COMMUNICATION (SPECIFIC)

- 5.1 Plastic
Metal sheeting
Hardboard
Fibreglass (1)
- 5.2 ANSWER SHEET C (6)
- 5.3 5.3.1 Double flying shore: used to provide temporary support to two parallel walls that are located between 9 metres and 15 metres apart where one or both walls show signs of failure (1)
- 5.3.2 Dead shore:
• Support structures
• Carry the dead weight of the structure above them, for example walls and floors
• New openings for existing walls and doors underpinning, is needed during restoration of the wall (1)
- 5.4 5.4.1 Steel dogs: nails used to secure the joint between prop and needle (1)
- 5.4.1 Sole plate: made of timber to spread the weight transferred by the props over a wider area (1)
- 5.4.3 Props or struts: placed vertically on top of each other on the different floors to strengthen or brace the floors and ceilings (1)
- 5.5 5.5.1 A – Concrete/floor slab
B – Brace/strut
C – Prop
D – Sole plate (4)
- 5.5.2
• To support the formwork
• Keep the different formwork components sturdy and fixed
• Facilitate the raising or lowering of the formwork to the required height
• For levelling the formwork
• Ease the striking of formwork after the concrete has cured (4)

5.6



ASSESSMENT CRITERIA	MARK
Beam	1
Ribs	2
Two labels	2
Correctness of drawing	1
TOTAL:	6

Correctness ✓

(6)

5.7 5.7.1 To lower
To raise the centre

(2)

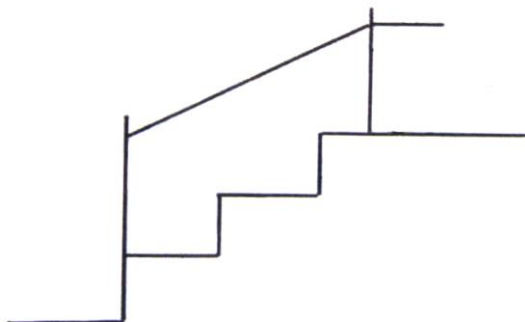
5.7.2 Table saw
Bandsaw
Jigsaw
Portable circular saw
Circular saw

(Any 2) (2)
[30]

QUESTION 6: SUSPENDED FLOORS, STAIRCASES, IRONMONGERY, DOORS AND JOINING (SPECIFIC)

- 6.1 A. Place to rest
B. For safety reasons in case of an accident
C. Change of direction (2)

6.2

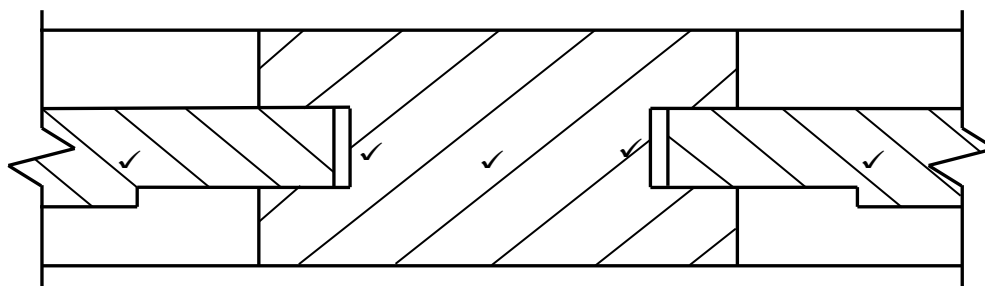


(5)

- 6.3 • On a cupboard door
• On a drawer (2)

- 6.4 Night latch (1)

6.5



Correctness✓

ASSESSMENT CRITERIA	MARK
Muntin	1
Raised panels	2
Space for expansion and shrinkage	1
Hatching	1
Correctness of drawing	1
TOTAL:	6

(6)

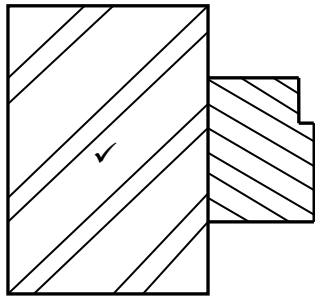
- 6.6 The opening allows for shrinkage and expansion of wood (1)

- 6.7 6.7.1 A: Brace B: Tongue and groove panels C: Stile (3)

- 6.7.2 To prevent sagging (1)

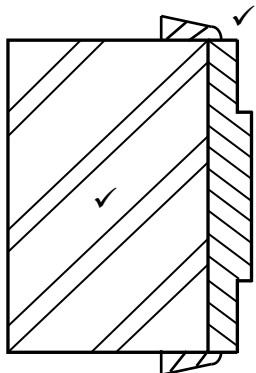
- 6.7.3 Gives a neater appearance at the outside of the frame members (1)

6.8



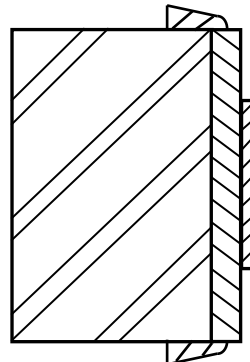
Doorframe ✓

(3)



Jamb lining

OR



(3)

ASSESSMENT CRITERIA	MARK
Walls	2
Frame profile of door	1
Jamb lining profile	1
Title	1
Architraves	1
TOTAL:	6

- 6.9 6.9.1 A = 220mm wall E = Floor joist
 B = 12 mm plaster F = Wall plate/bearers
 C = Skirting G = Damp-proof course (DPC)
 D = Floorboard H = Foundation (8)
- 6.9.2 To cover the gaps between the flooring and the wall (1)
- 6.9.3
- Span of the floor
 - The centre-to-spacing between the floor joist; and
 - The grade of timber of the floor
- (3)

[40]**TOTAL: 200**

ANSWER SHEET A	CIVIL TECHNOLOGY GENERIC	NAME: _____

2.1 Answer the following questions with regard to the site plan on ANSWER SHEET A:

2.1.1 Any TEN particulars that are not shown according to the checklist:

- Plot no. 31 is not shown
- Plot depth measurement is not shown
- Street name is not shown
- Branch sewage at S is not shown
- Connecting manhole (1,5 m inside plot boundary) is not shown
- Measurements of southern building boundary are not shown
- Structure measurements are not shown
- RE (rodding eye) symbol is not shown
- IE symbols are not shown
- VP and symbol are not shown at WC
- Entrance to plot is not shown
- No datum level is shown

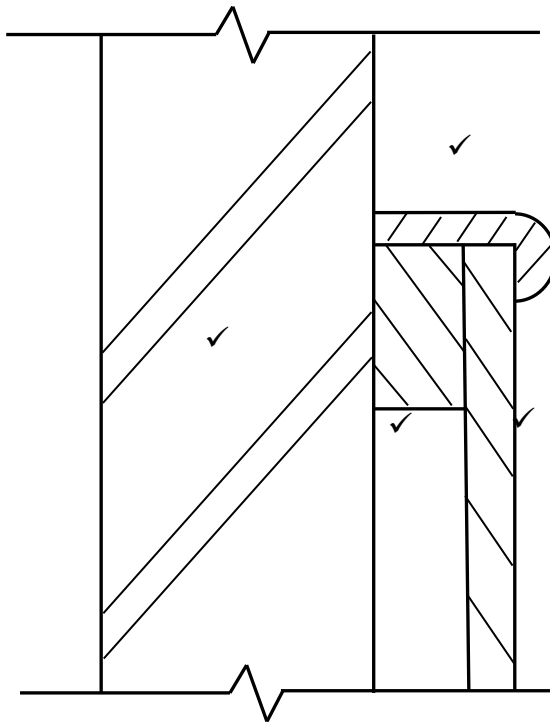
(10)

2.1.2 Identify SIX particulars that are shown incorrectly on the site plan:

- Construction is over the building boundary on the west side
- North arrow must be right-hand side, at the bottom of the page
- Scale is shown incorrectly
- Corner of branch sewage at WB incorrect
- RE and symbol missing at the change of direction in sewage line
- House depth measurements are not shown

(6)

ANSWER SHEET	B	CIVIL TECHNOLOGY WOODWORKING	NAME: _____
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QUESTION 3.3

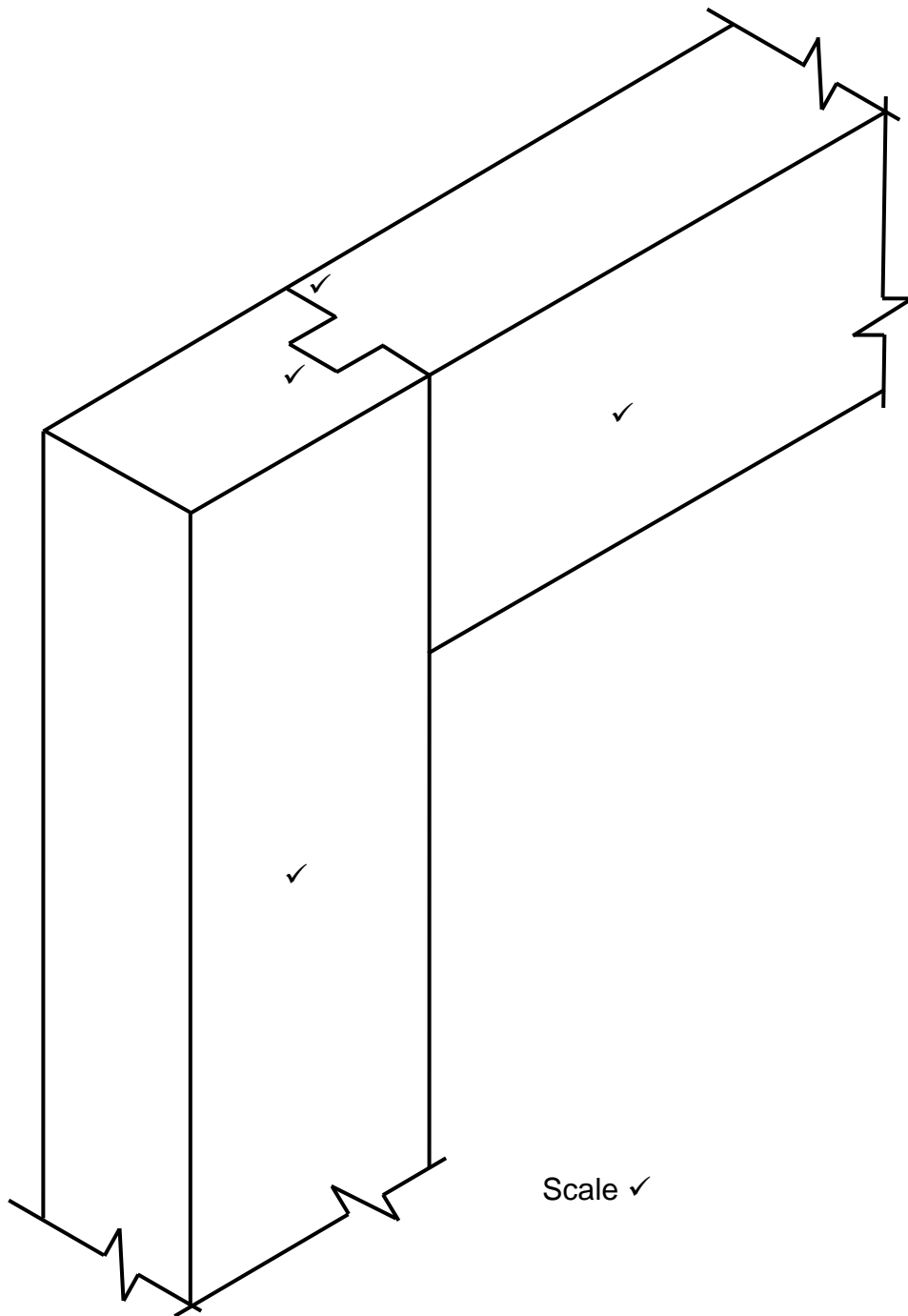
Correctness

✓

ASSESSMENT CRITERIA	MARK
Wall	1
Capping	1
Rough ground	1
Tongue and groove board	1
Correctness of drawing	1
TOTAL:	5

ANSWER SHEET C	CIVIL TECHNOLOGY WOODWORKING	NAME: _____
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QUESTION 5.2



ASSESSMENT CRITERIA	MARK
Stile	1
Top rail	1
Mortise	1
Haunch	2
Application of scale	1
TOTAL:	6