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SENIOR CERTIFICATE EXAMINATION/ NATIONAL SENIOR CERTIFICATE EXAMINATION

CIVIL TECHNOLOGY: WOODWORKING

2019

MARKING GUIDELINES

MARKS: 200

These marking guidelines consist of 16 pages.

QUESTION 1: OHSA, SAFETY, MATERIALS, TOOLS, EQUIPMENT AND JOINING (GENERIC)

- 1.1 1.1.1 G ✓ (1)
- 1.1.2 E ✓ (1)
- 1.1.3 A ✓ (1)
- 1.1.4 C ✓ (1)
- 1.1.5 D ✓ (1)
- 1.2 • When heavy materials/loads are not lifted/lowered/handled correctly. ✓
 • Wrong posture when lifting materials.
 • Not using safety apparel.
 ANY ONE OF THE ABOVE (1)
- 1.3 ✓ ✓
 1 : 4 **OR** 76° (2)
- 1.4 • A qualified person must operate the device. ✓
 • The device must never be overloaded. ✓
 • The gates and wire components of the lift of the hoisting device must be at least 1 980 mm high.
 • The gates must be shut when the device is being used.
 • Emergency brake mechanisms must be installed.
 • Safety measures must be displayed inside the cage.
 • Inspections and maintenance work should be carried out regularly (at least six-monthly) by qualified persons.
 • Overhead protection must be provided to protect workers from falling objects.
 • When material or equipment is being hoisted, it must be stacked firmly and correctly, and secured properly.
 • The hoist must be inspected weekly by a qualified person.
 ANY TWO OF THE ABOVE (2)
- 1.5.1 A = Laser level ✓
 B = Dumpy level ✓ (2)

1.5.2	<p>Laser level (A)</p> <p>To determine levels when:</p> <ul style="list-style-type: none"> • installing ceilings and floor tiles. ✓ • installing chair rails for example in a dining room. • installing receptacles for power inside a building during construction. • hanging pictures. • excavating for new buildings. • aligning and levelling floors. • when installing doors and windows. • aligning shelves and cabinets. • levelling post and beams on decks, fences and porches. • setting out buildings on a site. • aligning fences, post and decks. • determining gradient/slope for drainage and irrigation. • establishing contours for farming or drainage. • To determine levels and slopes when installing sewer pipes. 	<p>Dumpy level (B)</p> <p>The dumpy level is used when:</p> <ul style="list-style-type: none"> • determining differences between levels and vertical heights, especially over longer distances ✓ • determining levels and slopes. • setting out buildings • transferring levels and heights. • determining/measuring the distances/ between two points.
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ANY ONE IN EACH COLUMN ABOVE

(2)

1.6 1.6.1 Rawl bolt ✓

(1)

- 1.6.2
- A** – Drill a hole of the required diameter and depth. ✓
- B** – Remove debris and thoroughly clean the hole with a brush or by blowing into it. ✓
- C** – Remove the bolt and washer, insert the sleeve/shield into the hole and align the fixture (for example base plate, etc...) with the hole. ✓
- D** – Insert the bolt with washer through the fixture and tighten to the recommended torque. ✓

(4)

- 1.6.3 Rawl bolts:
- are stronger fasteners than a screw with a plastic plug. ✓
 - are designed to resist pull-out failure.
 - have excellent mechanical properties such as tensile and yield stress.
 - have excellent carrying capacity.
 - have excellent tolerance to variance in the hole size.

ANY ONE OF THE ABOVE

(1)
[20]

QUESTION 2: GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)**ANSWER SHEET 2**

NO.	QUESTIONS	ANSWERS	MARKS
1	Identify the elevation shown in FIGURE A.	Eastern/East elevation/East ✓	1
2	Name the scale of FIGURE B.	1 : 100 ✓	1
3	Identify number 1.	Barge board ✓	1
4	Identify number 2.	Roof overhang/Eave/Open eave ✓	1
5	Recommend a suitable finish for number 3.	Plaster/Paint/Face brick/Tiles/ Cladding ✓	1
6	What is indicated by number 4?	Door/Entrance door/Door opening ✓	1
7	Identify the drawing symbol indicated by number 5.	Finished floor level/FFL ✓	1
8	Identify the drawing symbol indicated by number 6.	Natural ground level/NGL ✓	1
9	What is indicated by number 7?	Step ✓	1
10	Give the date on which the building plan was printed.	2019/06/16 ✓	1
11	Who checked the building plan?	P Blade ✓	1
12	Name the electrical drawing symbol in the column for the notes in FIGURE 2 that must be placed at a staircase.	Two-way switch ✓	1
13	Name the electrical feature in the column for the notes in FIGURE 2 that must be placed at the entrance door of the house.	Wall light ✓	1

**DO NOT MARK
THESE QUESTIONS**

14	Identify the type of roof that is used on the building in FIGURE A.	Gable roof ✓	1
15	Explain the purpose of number 1.	To cover ends of purlins/battens/fixed to the purlins/battens for a neat appearance. To finish of the gable end of the roof. ✓	1
16	Who is the owner of this house?	Mr H Smith ✓	1
17	In which street is the proposed dwelling situated?	Jupiter street ✓	1
18	Identify number 8.	Rainwater down pipe/Downpipe ✓	1
19	What is the sanitary fitting indicated by number 9 used for?	To wash your face/Body ✓ Brush your teeth Wash your hands Washing/Rinsing	1
20	Recommend an alternative sanitary fitting to replace number 10 that will serve a similar purpose.	Bath ✓	1
21	Explain the purpose of number 11 as indicated on the staircase.	Landing to serve as resting place or change of direction of staircase. ✓	1
22	What is indicated by number 13?	Emergency light/External light Thickness of wall/110 mm ✓	1
23	What is indicated by number 15?	North- symbol/direction/point ✓	1
24	Deduce the height of window 1 from the window schedule.	1,8 m or 1 800 mm ✓	1
25	Deduce the width of window 2 from the window schedule.	2,4 m or 2 400 mm ✓	1
26	Name the elevations of the building on which the staircase is situated.	Western/West elevation/West ✓ Southern/South elevation/South ✓	2

27	Differentiate between the electrical symbols indicated by numbers 12 and 14.	12 – One way light switch single pole/lever ✓ 14 – One way light switch double pole/lever ✓	2
28	Recommend a suitable floor covering for the lounge.	Tiles/Novilon/Carpets/Laminated flooring/Wooden flooring. ✓	1
29	Calculate the area of the lounge in m ² . Show ALL calculations.	6 m ✓ x 3 m ✓ = 18 m ² ✓ OR 6 000 mm x 3 000 mm = 18 m ²	3
30	Calculate the perimeter of the building. Show ALL calculations.	(220 + 3 000 + 110 + 3 000 + 220) ✓ x 2 ✓ = 6 550 x 2 = 13 100 mm ✓ (220 + 6 000 + 220) ✓ x 2 ✓ = 6 440 x 2 = 12 880 mm ✓ 13 100 + 12 880 = 25 980 mm ✓ OR = 25,98 m	7
		TOTAL:	40

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

3.1 Glazing bar ✓ (1)

3.2 A – Frame head ✓

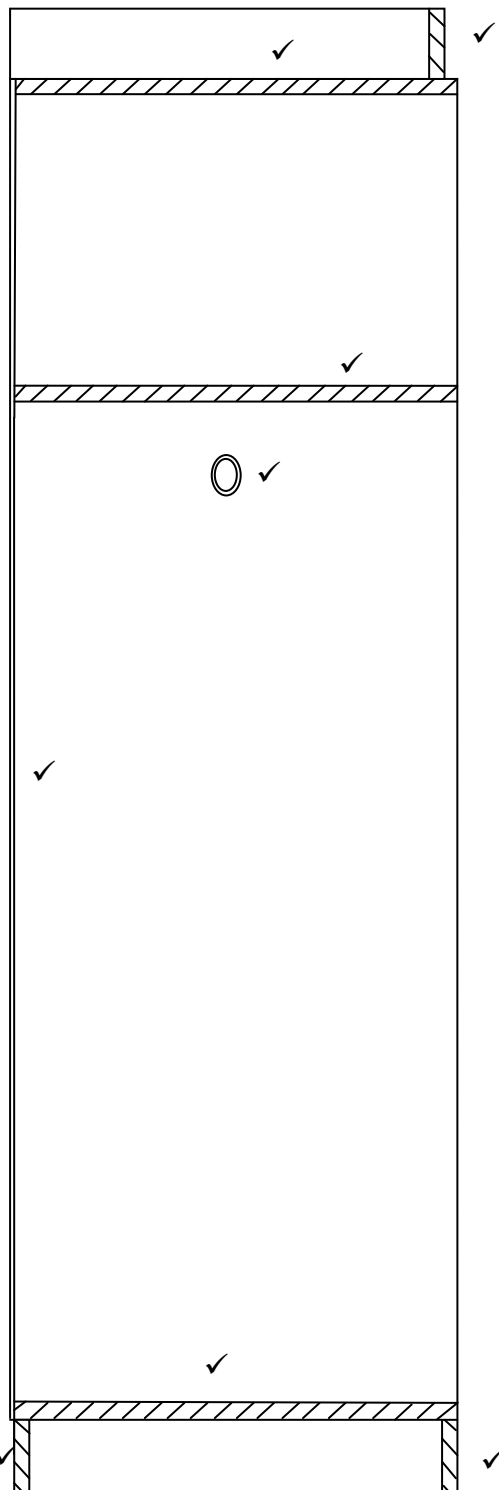
B – Transom ✓

C – Mullion ✓

D – Casement stile ✓

E – Bottom rail of casement/Bottom rail ✓ (5)

3.3



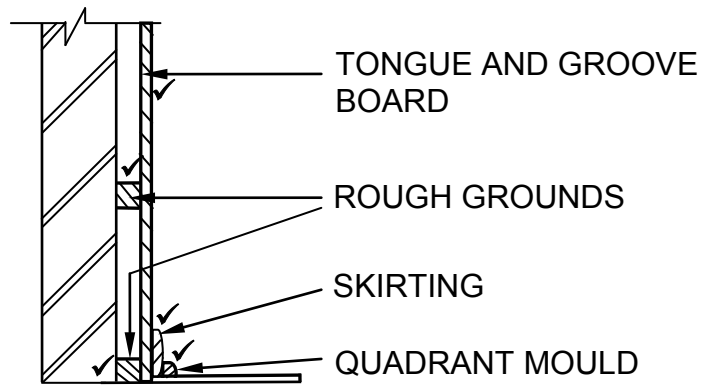
ASSESSMENT CRITERIA	MARK	CM
Front rail	1	
Top shelf	1	
Middle shelf	1	
Bottom shelf	1	
Hanging rail	1	
Kick plate	1	
Back of base	1	
Back of cupboard	1	
Application of scale:		
Correct height	1	
Correct depth	1	
Correct thickness of material	1	
TOTAL:	11	

SCALE: ✓✓✓

USE A MASK TO MARK THE DRAWING

(11)

3.4



Application of scale ✓

ASSESSMENT CRITERIA	MARKS	CANDIDATE'S MARK
Horizontal rough grounds	2	
Tongue and groove board	1	
Skirting	1	
Quadrant mould	1	
Application of scale More than 3 wrong no marks.	1	
TOTAL:	6	

Marks are awarded for the drawing and not for labels.

USE A MASK TO MARK THE DRAWING

(6)

3.5

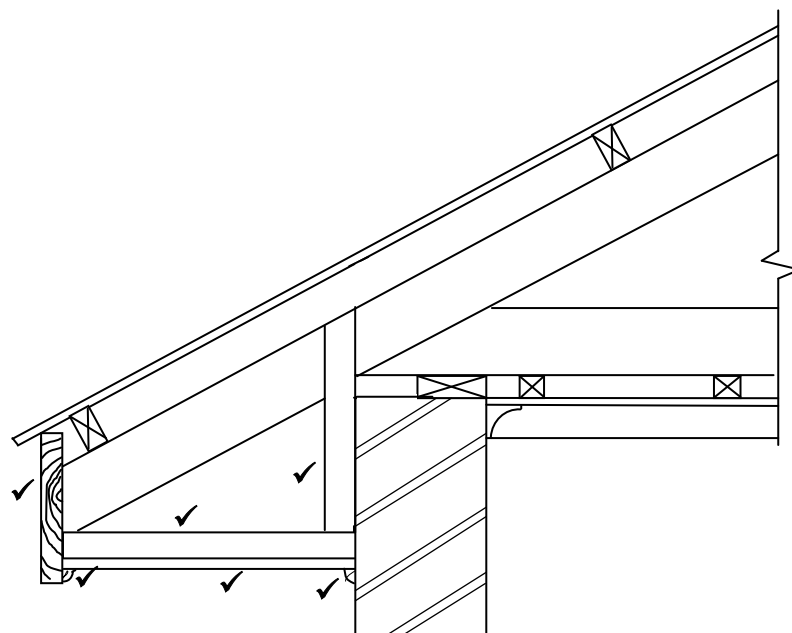
A	B	C	D
3.5.1			Length of fascia board
			= 9 000 mm + 300 mm + 9 000 mm + 300 mm ✓ OR (9 000 mm + 300 mm) x 2 OR (150 + 9000 +150) x 2
			= <u>18 600</u> mm
			= <u>18,6 m</u> ✓
3.5.2			Number of roof trusses needed
			<u>Internal dimension</u> + 1 Distance between centres
			<u>8,56</u> ✓ + 1 <u>1,3</u> ✓
			= <u>6,58 + 1</u> ✓
			= <u>7 + 1</u> ✓
			= <u>8 Roof trusses</u> ✓

(2)

(5)
[30]

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

- 4.1 4.1.1 B ✓ (1)
- 4.1.2 F ✓ (1)
- 4.1.3 D ✓ (1)
- 4.1.4 E ✓ (1)
- 4.1.5 C ✓ (1)
- 4.2



Application of scale ✓

USE A MASK TO MARK THIS QUESTION

ASSESSMENT CRITERIA	MARK
Fascia board: 230 mm x 38 mm	1
Hanger: 38 mm x 38 mm	1
Bearer: 38 mm x 38 mm	1
6 mm fibre-cement board on closed eaves	1
Quarter round mouldings below fibre-cement board	2
Application of scale	1
More than 3 wrong no marks.	
TOTAL:	7

(7)

4.3

	Hipped roof	Gable roof
MATERIAL	More timber is used because of the complex design of the roof ✓ More roof covering is used More cutting and waste	Less timber is used because of simple design ✓ Less roof covering is used Less cutting and waste
CONSTRUCTION	Slope down on all sides ✓ The construction is complex Roof is stronger Roof takes longer to construct	Slope down on only two sides ✓ Simple design Roof not as strong because less timber is used Constructed faster

ANY ONE OF THE ABOVE FOR EACH CRITERION IN EACH COLUMN (4)

4.4

- Gang nails ✓
 - Bolt and nuts ✓
 - Nails ✓
- (3)

4.5

- Aluminium frames/Timber frames ✓
 - Cover strip/T-metal strip ✓
 - Hinges
 - Barrel bolt
- ANY TWO OF THE ABOVE** (2)

4.6

610 mm x 610 mm ✓ (1)

4.7

4.7.1 Portable electrical planer ✓ (1)

- 4.7.2
- Safety goggles ✓
 - Dust ✓
 - Respiratory mask
- ANY TWO OF THE ABOVE** (2)

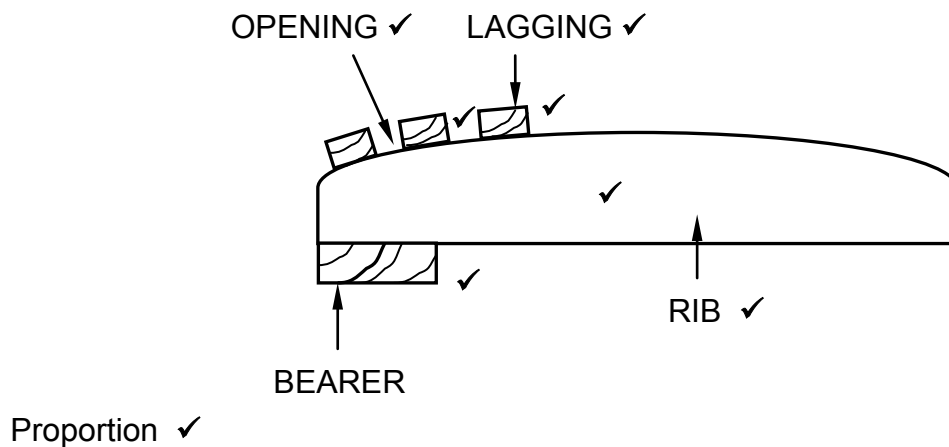
- 4.7.3
- Store in a dry safe place. ✓
 - Keep in a wooden box or plastic box away from moisture. ✓
 - Store the plane on its side to prevent damage to the blade.
 - Retract the blade into the machine.
- ANY TWO OF THE ABOVE** (2)

- 4.7.4
- Check the timber for:
- Loose knots ✓
 - Sand ✓
 - Nails/Screws/Any metal objects in the timber
- ANY TWO OF THE ABOVE** (2)

- 4.8 4.8.1
 - Avoid making adjustments while the blade is turning. ✓
 - Keep your hands and fingers away from rotating blade. ✓
 - Ensure all clamps and locking devices are locked. ✓
 - Check the wood for loose knots/nails/screws.
 - Ensure that the machine stands in a well-balanced position.
 - Ensure the blade is properly fastened.
 - Do not leave the machine until the blade has stop turning.
 - Approach the timber slowly.**ANY THREE OF THE ABOVE OR ANY ACCEPTABLE ANSWER** (3)
- 4.8.2
 - Check the wood for any metal objects before cutting commence. ✓
 - Make sure the teeth of the blade are sharp. ✓
 - Ensure that the blade is properly fastened.
 - Do not force material to the blade.**ANY TWO OF THE ABOVE** (2)
- 4.9
 - Remove all dust ✓
 - Apply first layer of sanding sealer. ✓
 - Allow drying time for first layer. ✓
 - Sand lightly ✓
 - Remove dust from the door. ✓
 - Apply second layer of sanding sealer.**ANY FIVE OF THE ABOVE** (5)
- 4.10
 - Graded timber has a stamp that indicates the grade as well as the saw mill at which it was graded. ✓
 - Graded timber has a colour coded end grain.**ANY ONE OF THE ABOVE** (1)
- [40]**

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

5.1

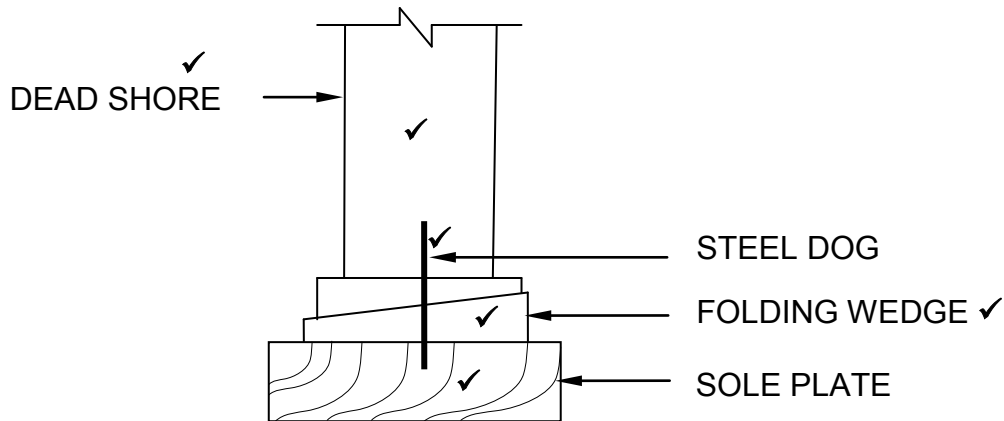


ASSESSMENT CRITERIA	MARK
Bearer	1
Rib	1
Laggings	1
Space between laggings	1
Any THREE labels	3
Proportion	1
TOTAL:	8

(8)

- 5.2 5.2.1 Braces/struts ✓ (1)
- 5.2.2 Fish plate ✓ (1)
- 5.2.3 Clamps ✓ (1)
- 5.2.4 Folding wedges ✓ (1)
- 5.2.5 Soleplate ✓ (1)
- 5.3 • Plastic ✓
 • Metal sheeting ✓
 • Hardboard/Ply wood
 • Fibreglass
 ANY TWO OF THE ABOVE (2)
- 5.4 A – Clamp/cleat ✓
 B – Yoke ✓
 C – Threaded bolt/Threaded rod ✓ (3)

5.5

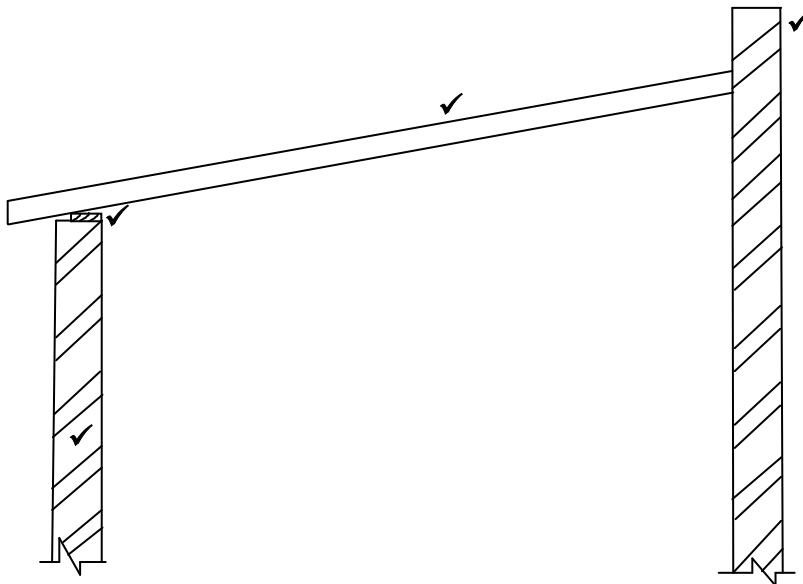


Proportion ✓

ASSESSMENT CRITERIA	MARK
Dead shore	1
Steel dog	1
Folding wedge	1
Soleplate	1
Any TWO labels	2
Proportion	1
TOTAL:	7

(7)

5.6



Proportion ✓

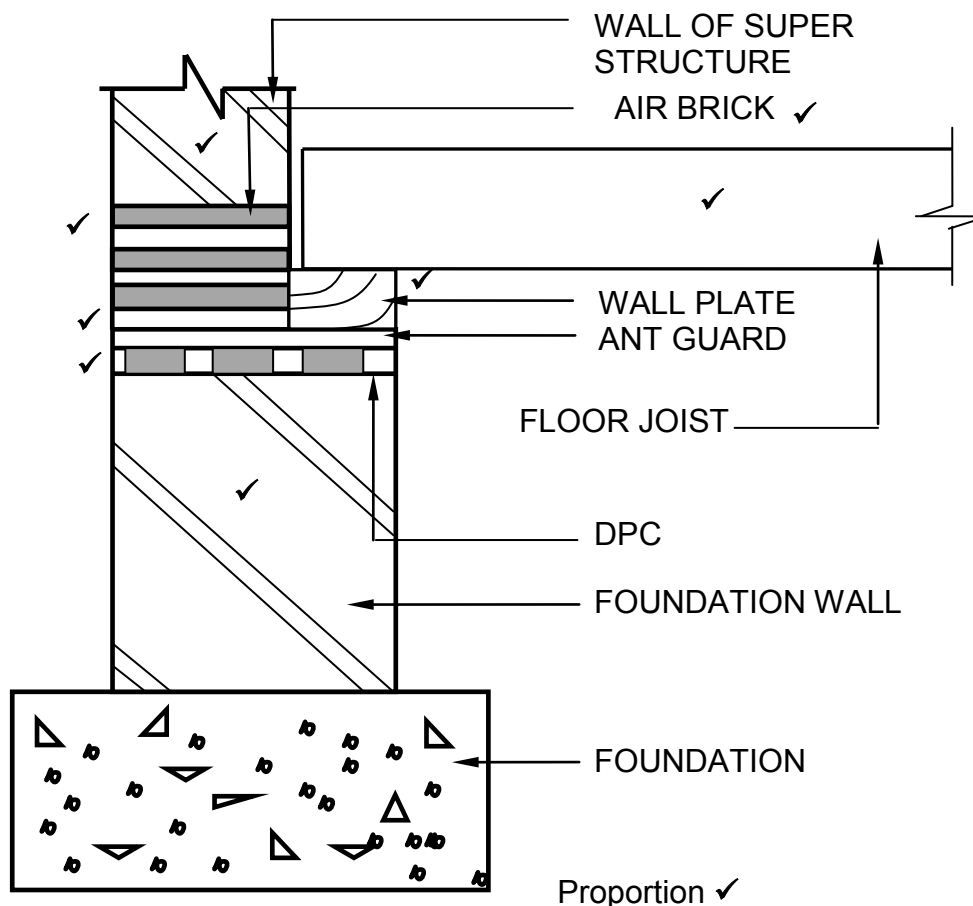
ASSESSMENT CRITERIA	MARK
Parapet wall	1
Wall	1
Wall plate	1
Rafter	1
Proportion	1
TOTAL:	5

(5)
[30]

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

- 6.1 6.1.1 C ✓ (1)
- 6.1.2 A ✓ (1)
- 6.1.3 C ✓ (1)
- 6.1.4 A ✓ (1)
- 6.1.5 D ✓ (1)

6.2

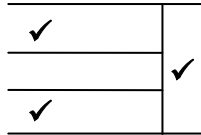


ASSESSMENT CRITERIA	MARK
Foundation wall: 330 mm	1
Wall of superstructure	1
DPC	1
Ant guard	1
Air brick	1
Wall plate	1
Floor joist	1
Proportion	1
Any ONE label	1
TOTAL:	9

(9)

- 6.3
- Half-landing stairs are known as U-shaped ✓ stairs. A half – landing staircase has two parallel flights of stairs ✓ that are connected by a landing that make a 180° ✓ turn when one staircase ascends or descends.

OR

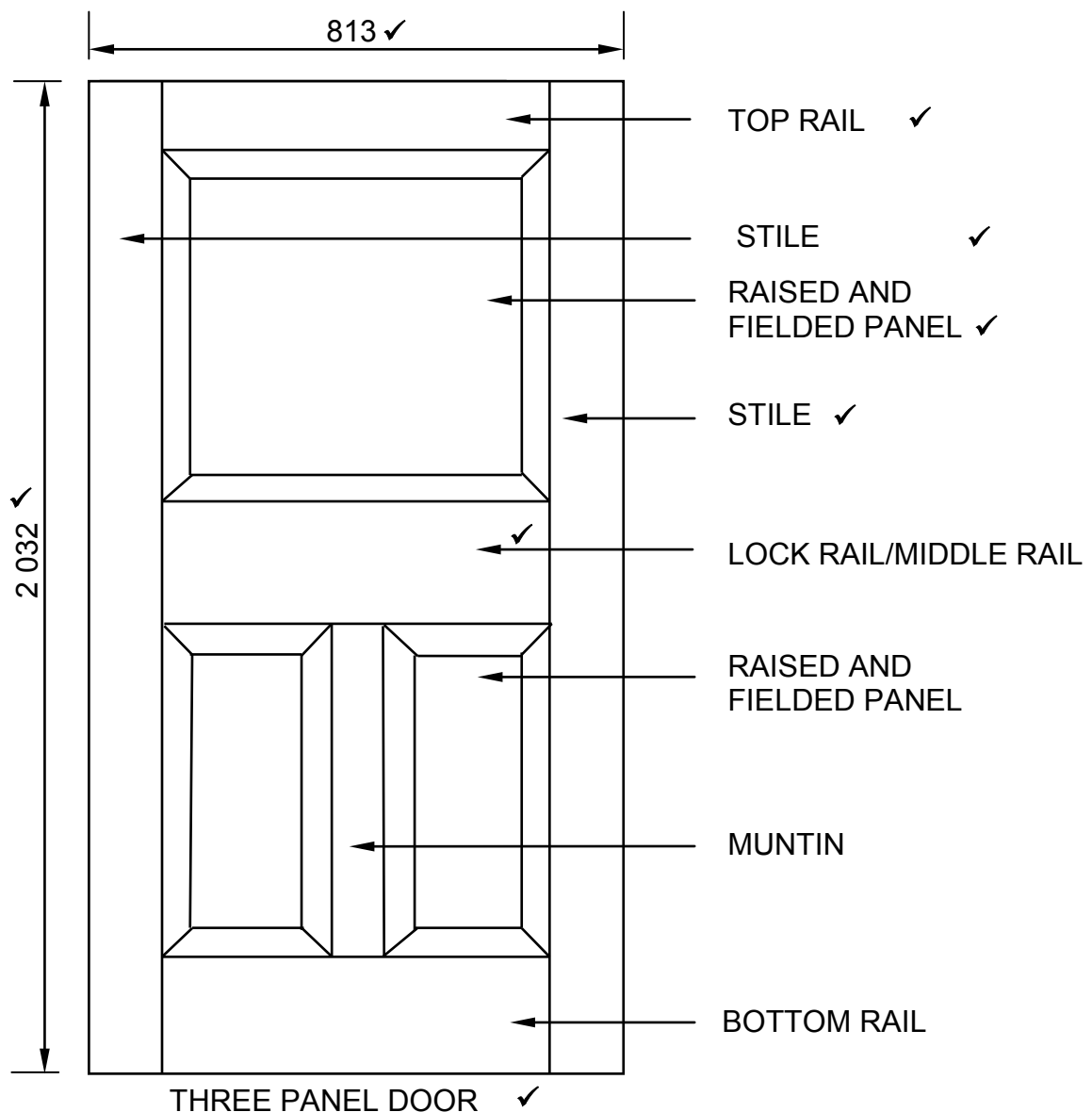


(3)

- 6.4
- Mortise locks are mortised ✓ into one of the stiles of the door and are used for entrance doors, internal doors and any large doors. ✓
 - Night latch is mounted ✓ onto the internal surface of the stile of a door and is used to secure entrance doors. ✓

(4)

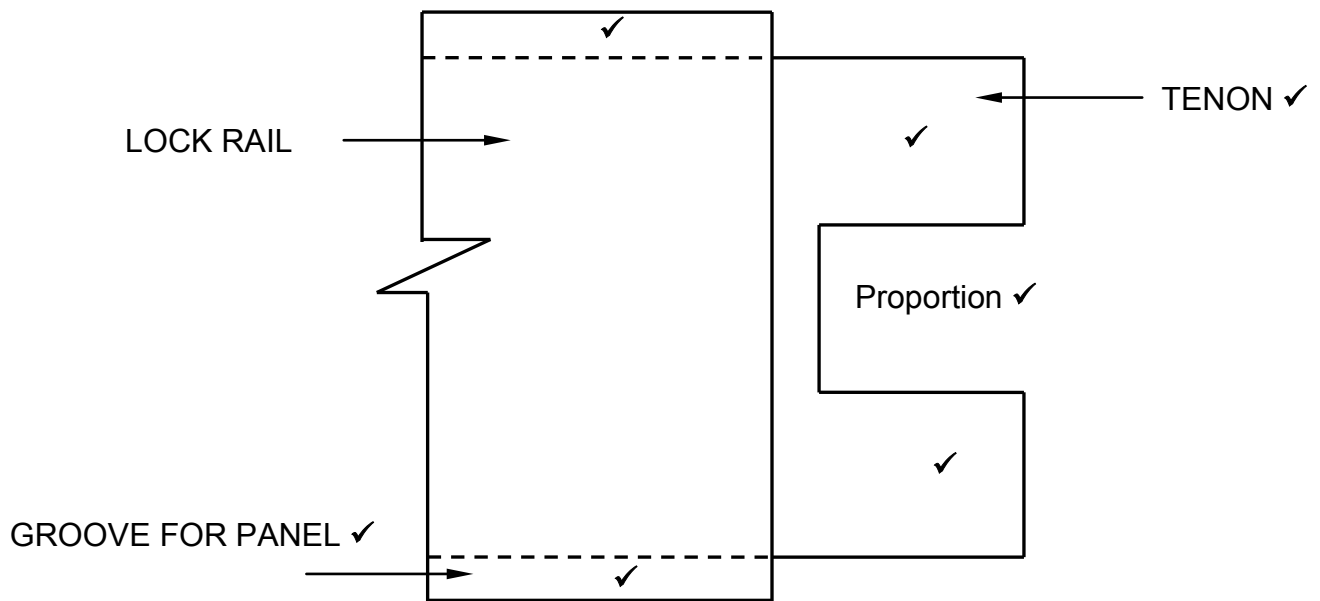
6.5



ANY FOUR LABELS = 4

(7)

6.6



ASSESSMENT CRITERIA	MARK	CANDIDATE'S MARK
Hidden detail of grooves	2	
Double tenon	2	
TWO labels	2	
Proportion of tenons	1	
TOTAL:	7	

(7)

6.7 A – Joist hanger/Truss hanger/Beam hanger ✓

(1)

6.8 6.8.1 Clout nails/Dry wall screws ✓

(1)

6.8.2 Copper nails/Nails/Screws ✓

(1)

6.8.3 Roof nails ✓
Pozi drive screws**ANY ONE OF THE ABOVE**

(1)

6.9 • Putty ✓
• Glazing beads
ANY ONE OF THE ABOVE

(1)

[40]**TOTAL: 200**