



# **basic education**

Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **SENIOR CERTIFICATE EXAMINATIONS/ NATIONAL SENIOR CERTIFICATE EXAMINATIONS**

**CIVIL TECHNOLOGY: WOODWORKING**

**MAY/JUNE 2025**

**MARKS: 200**

**TIME: 3 hours**

**This question paper consists of 17 pages and 9 answer sheets.**

**REQUIREMENTS:**

1. Drawing instruments
2. A non-programmable calculator
3. ANSWER BOOK

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of SIX questions.
2. Answer ALL the questions.
3. Read ALL the questions carefully.
4. Answer each question as a whole. Do NOT separate subsections of questions.
5. Number the answers correctly according to the numbering system used in this question paper.
6. Start the answer to EACH question on a NEW page.
7. Do NOT write in the margins of the ANSWER BOOK.
8. You may use sketches to illustrate your answers.
9. Write ALL calculations and answers in the ANSWER BOOK or on the attached ANSWER SHEETS.
10. Use the mark allocation as a guide to the length of your answers.
11. Make drawings and sketches in pencil, fully dimensioned and neatly finished off with descriptive titles and notes to conform to the *SANS/SABS Code of Practice for Building Drawings*.
12. For the purpose of this question paper, the size of a brick should be taken as 220 mm x 110 mm x 75 mm.
13. Use your own discretion where dimensions and/or details have been omitted.
14. Answer QUESTIONS 2, 3.1.3, 3.2, 3.4, 4.5.4, 4.6, 5.2, 5.3 and 5.4 on the attached ANSWER SHEETS using drawing instruments, where necessary.
15. Write your CENTRE NUMBER and EXAMINATION NUMBER on every ANSWER SHEET and hand them in with your ANSWER BOOK, whether you have used them or not.
16. Drawings in the question paper are NOT to scale due to electronic transfer.
17. Google Images was used as the source of all photographs and pictures.
18. Write neatly and legibly. ∞

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

Start this question on a NEW page.

1.1 Choose the correct answer(s) from those given in brackets. Write only the word(s) next to the question numbers (1.1.1 to 1.1.10) in the ANSWER BOOK, e.g. 1.1.11 Wood.

- 1.1.1 Materials are preserved by (veneering/curing/powder coating) to make them sustainable. (1)
- 1.1.2 This preservation method, (electroplating/annealing/painting), will not protect metal from rust. (1)
- 1.1.3 (Electrolysis/Galvanising/Paint) is available in an oil or water base. (1)
- 1.1.4 Under normal circumstances, scaffold frameworks should be inspected (weekly/bi-weekly/daily). (1)
- 1.1.5 When working on scaffolding (sharp corners may be left uncovered/do not jump from one level to another on the scaffold/throw materials from the scaffold). (1)
- 1.1.6 An employer shall ensure that the outriggers/frames of suspended scaffolds are constructed of (steel/copper/lead). (1)
- 1.1.7 Trestle scaffolds may not consist of more than (2/3/4) tiers. (1)
- 1.1.8 Every employer who uses any hazardous chemical substances at work, should be in possession of (a medical aid/a material safety data sheet/an authorisation letter). (1)
- 1.1.9 Never extend a ladder more than (one quarter/two thirds/one third) of the extension length. (1)
- 1.1.10 The recommended height for the gates of the builder's hoist is at least (1 980 mm/1 250 mm/1 550 mm). (1)

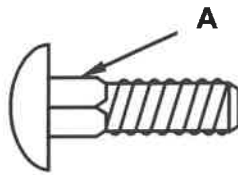
1.2 The nuts below are used to fasten bolts.

1.2.1 Which top view represents a nut with a built-in washer?

**A****B****C****D**

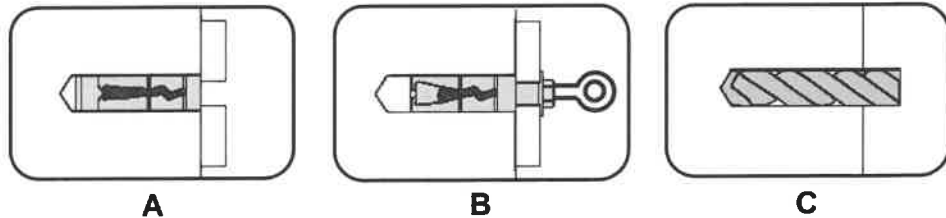
(1)

- 1.2.2 What is the purpose of the square section of the fastener as indicated by **A**?



(1)

- 1.2.3 Rearrange the pictures below in the correct sequence:



(1)

- 1.2.4 The specification for a Rawl bolt is R-RBL-M08/25. What does the number 25 represent?

(1)

- 1.3 Explain TWO advantages of galvanising.

(2)

- 1.4 Name ONE natural element that a multi-detector must be protected against.

(1)

- 1.5 Describe why you will use a laser level when installing a shelf against a wall.

(1)

- 1.6 Name TWO accessories that must be used with the telescope of the dumpy level to take an accurate reading.

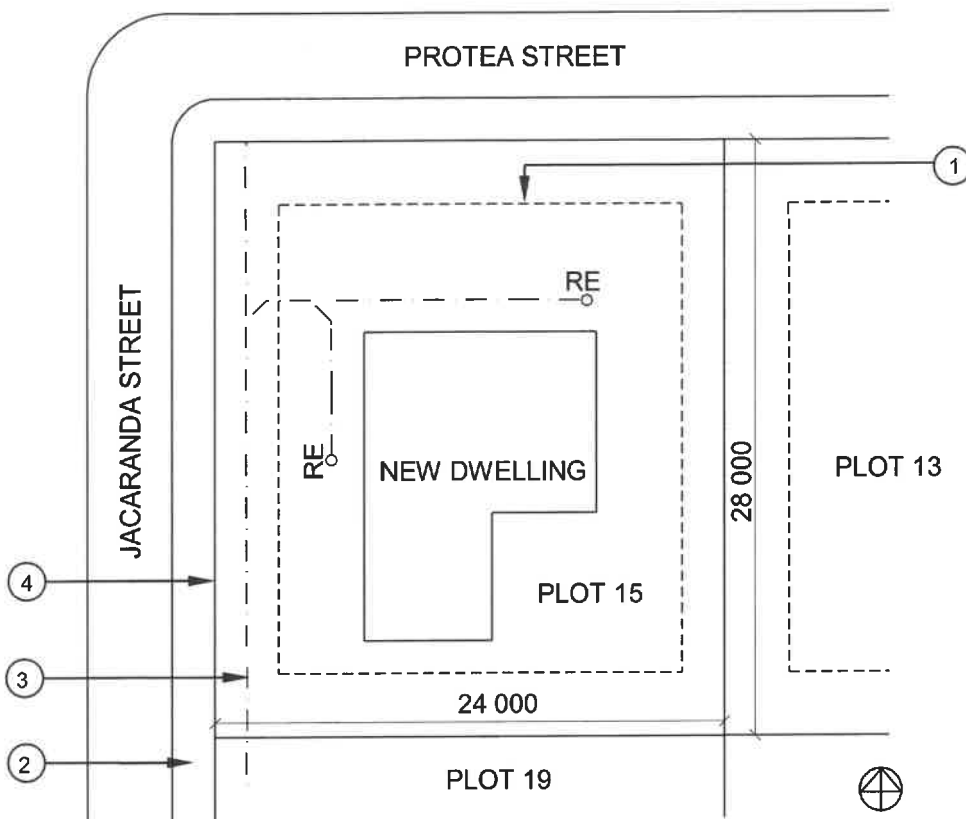
(2)

**[20]**

## QUESTION 2: GRAPHICS AS MEANS OF COMMUNICATION (GENERIC)

Start this question on a NEW page.

FIGURE A and FIGURE B on the next page show drawings that appear on a building plan. Analyse the drawings and complete the table on ANSWER SHEET 2.

**FIGURE A****NOTES:**

Contractors must verify all dimensions and levels on site before commencing work.

Architects to be notified of any discrepancies immediately.

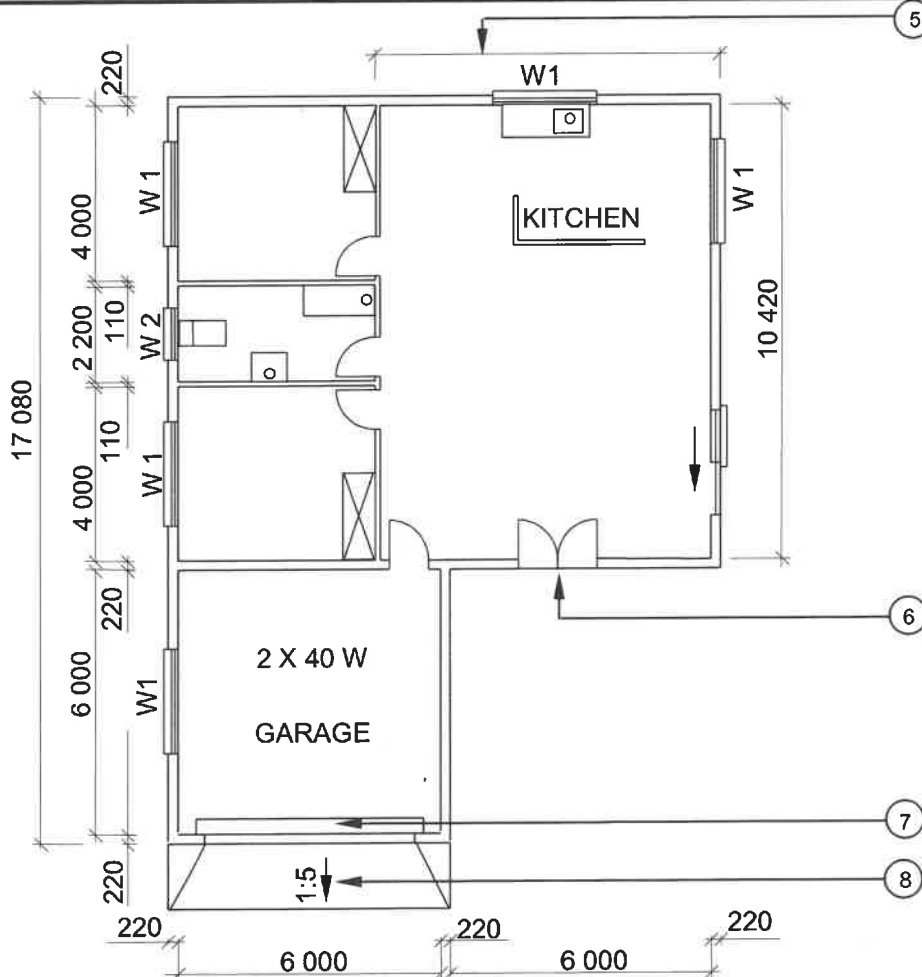
Bedroom lights: 2 x 6 W (LED)

Fencing: Pre-fabricated fencing

Sidewalk next to number 4 = 1 500 mm

Architect's signature .....

Client's signature .....

**FIGURE B**

REVISION 1	DATE: 16/02/2025	DRAWING OF BATHROOM FIXTURES
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PRINTED BY: DOCK PRINTERS	DATE OF PRINT: 18/04/2025
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DRAWING TITLE: SITE PLAN AND FLOOR PLAN	
PROJECT: PROPOSED DWELLING OF MS TOMEY ON PLOT 15, PALM STREET, PHOENIX	

PROJECT NO.: GR 288-229	DRAWING NO.: 668P8
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DATE: 08/04/2025	DRAWN: P COX	CHECKED: D FOX
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SITE PLAN	SCALE: 1 : 500
FLOOR PLAN	SCALE 1 : 100

REFERENCE CODE QP 8 – 2025
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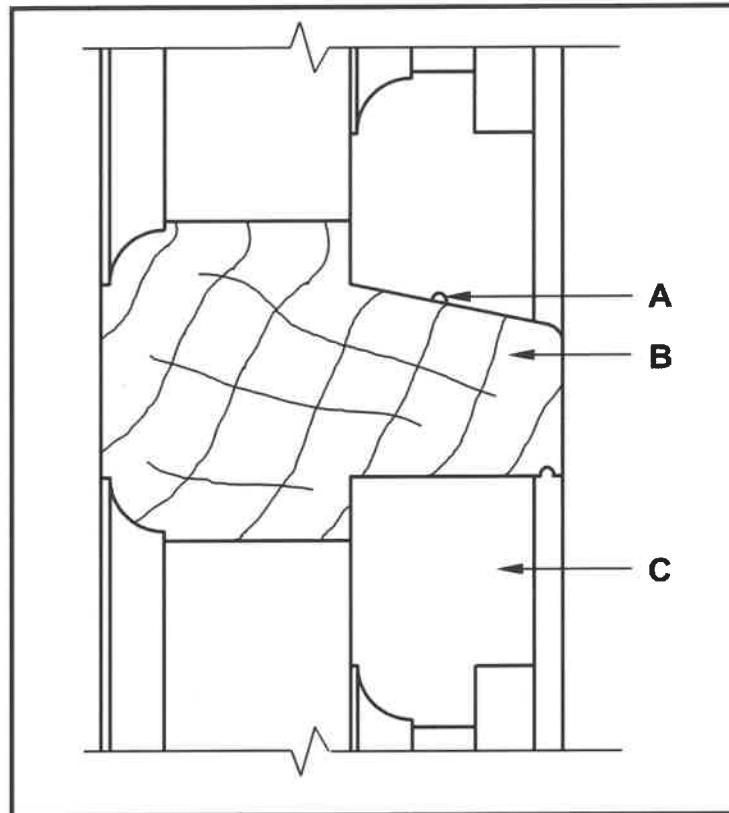
WINDOW SCHEDULE	
 2 800 W 1	 800 W 2

**[40]**

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

Start this question on a NEW page.

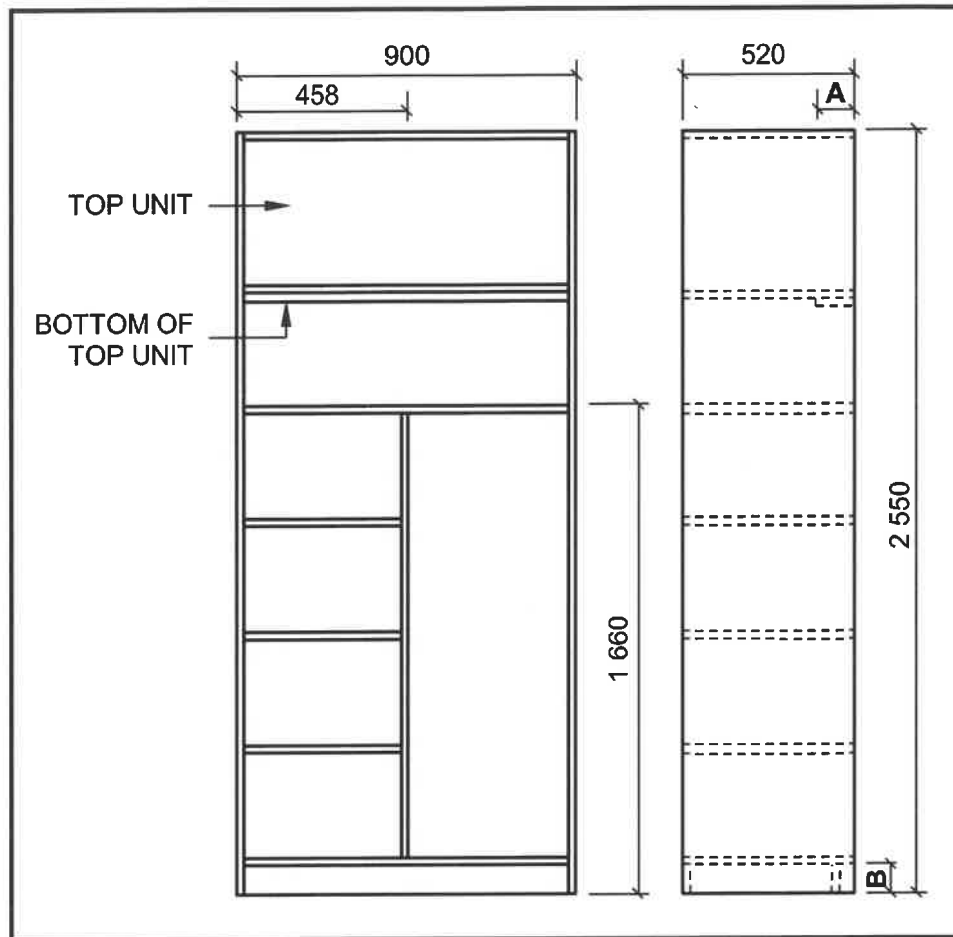
- 3.1 FIGURE 3.1 below shows an incomplete vertical sectional view through part of a casement with a fanlight.



**FIGURE 3.1**

- 3.1.1 Identify member **B**. (1)
- 3.1.2 Label parts **A** and **C**. (2)
- 3.1.3 Use ANSWER SHEET 3.1.3 and complete the vertical sectional view of the casement with the fanlight by drawing ALL the omitted parts. Hatch ALL the relevant parts. (6)

- 3.2 FIGURE 3.2 below shows the front and side elevation of a bedroom cupboard, without doors and a back board, fitted from the floor to the ceiling.



**FIGURE 3.2**

Use ANSWER SHEET 3.2 and complete the cutting list for the material needed.

Use the following specifications:

- **A** = 100 mm
- **B** = 80 mm
- A 16 mm melamine board is used for the construction of the cupboard.
- The inside measurement of the height between all the shelves is 375 mm. (8)

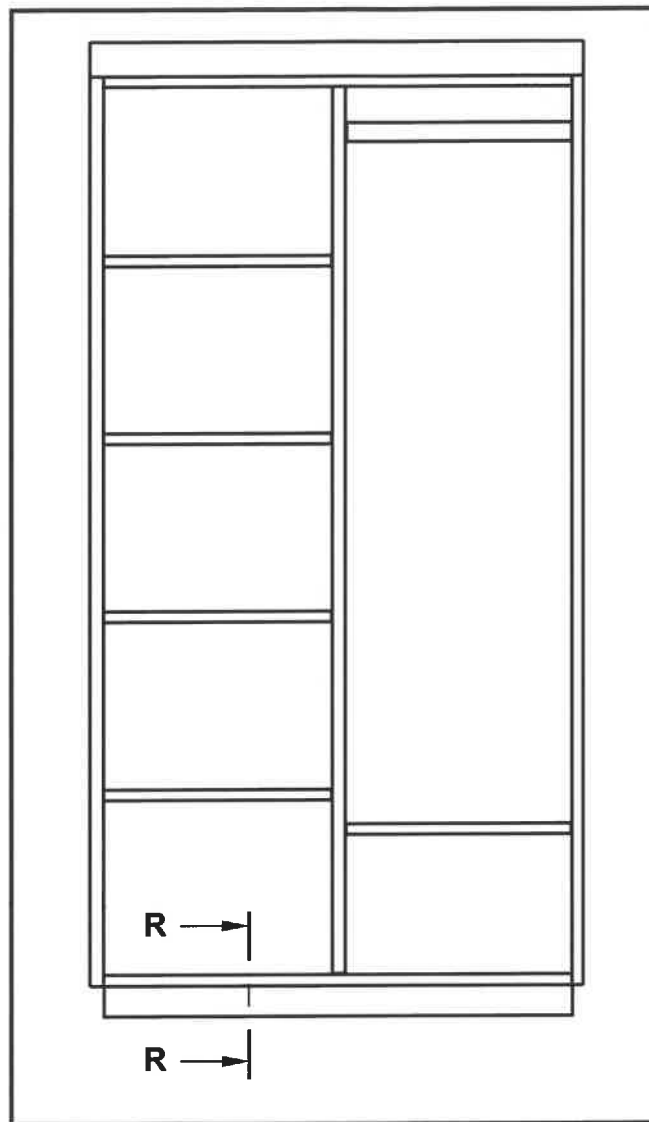
- 3.3 Give ONE word/term for EACH of the following descriptions by choosing a word/term from the list below. Write only the word/term next to the question numbers (3.3.1 to 3.3.5) in the ANSWER BOOK, e.g. 3.3.6 door.

front rail; side; plywood; drawer front; top of cupboard; drawer; door; intermediate side; oval rail; soft board; bottom of cupboard
---

- |       |  |     |
|-------|--|-----|
| 3.3.1 | The part where you can add a handle for the drawer                       | (1) |
| 3.3.2 | The part of the cupboard on which you can hang your clothes              | (1) |
| 3.3.3 | The part of the cupboard that is hinged                                  | (1) |
| 3.3.4 | Another material that can be used for shelving instead of melamine board | (1) |
| 3.3.5 | Recommended place where drawers can be installed in a cupboard           | (1) |



3.4 FIGURE 3.4 below shows the front view of a built-in cupboard without doors.



**FIGURE 3.4**

Draw, on ANSWER SHEET 3.4, in good proportion, only the sectional view on section line **R-R**. Hatch ALL the relevant parts and label the backing.

Use the following specifications:

- 16 mm melamine board is used for the frame.
- 3 mm hardboard is used for the back.
- The back is fitted on top of the frame and is flush with the bottom back rail of the base.

(8)  
[30]

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

Start this question on a NEW page.

- 4.1 Choose a description from COLUMN B that matches an item in COLUMN A. Write only the letter (A–J) next to the question numbers (4.1.1 to 4.1.6) in the ANSWER BOOK, e.g. 4.1.7 K.

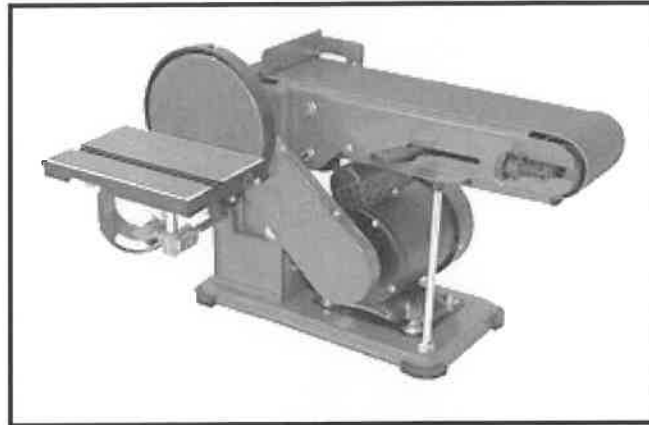
COLUMN A	COLUMN B
4.1.1 Mechanical grading	A this grading is highly effective and very accurate and can go beyond grade 6
4.1.2 Visual grading	B it must be heated before application to shorten the drying time
4.1.3 Sanding sealer	C it is resistant to staining and is available in a glossy and matt finish
4.1.4 Lacquer	D it is available in a clear finish and is very easy to apply
4.1.5 Varnish	E it fills the grain of the wood and several diluted coats must be applied
4.1.6 Linseed oil	F the maximum grade that can be assigned currently is grade 6
	G it protects wood against penetration of water but tends to leave white spots if water is spilled
	H a minimum of 800 pieces from a batch must be sampled for testing
	I no sanding is necessary before applying this preservative
	J it enhances fungal discoloration

(6 x 1) (6)

- 4.2 Name TWO floor-mounted machines that are used to cut wood. (2)

- 4.3 Why must the electrical plug of electrical machines and tools be removed from the socket outlet when adjustments are made? (1)

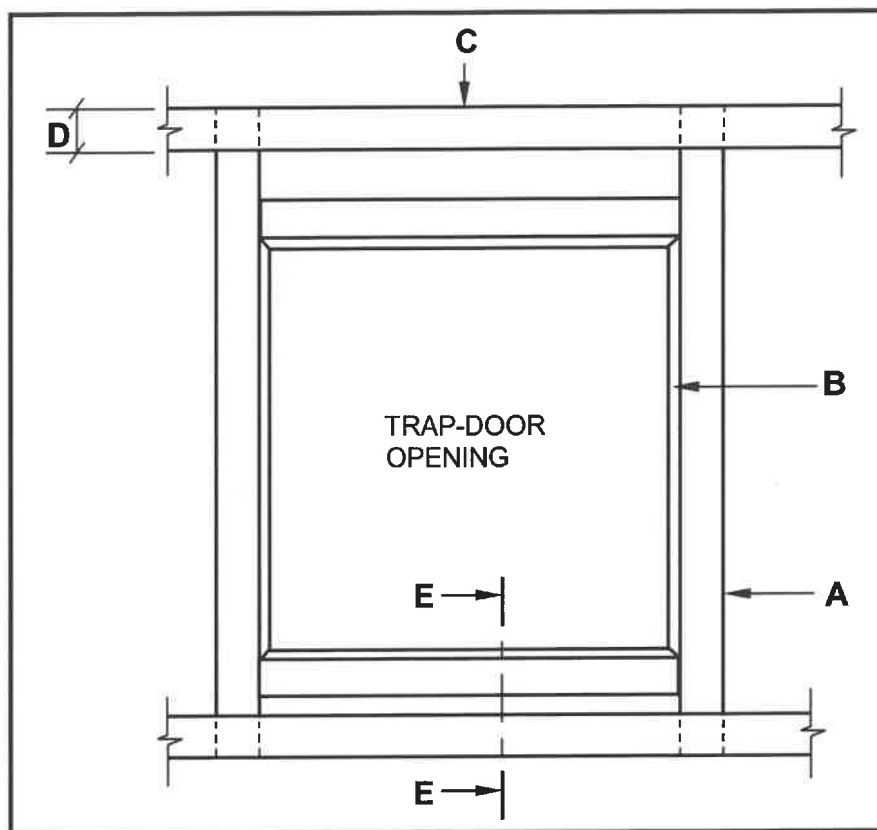
4.4 FIGURE 4.4 below shows a woodworking machine.



**FIGURE 4.4**

- 4.4.1 Identify the machine. (1)
- 4.4.2 How many sanding surfaces does the machine have? (1)
- 4.4.3 What should wood be inspected for before using the machine to avoid damage to sanding surfaces? (1)

- 4.5 FIGURE 4.5 below shows the top view of a trap-door opening, without a door, as seen from the inside of the roof space.



**FIGURE 4.5**

- 4.5.1 Identify **A**, **B** and **C**. (3)
- 4.5.2 State the minimum width of **D**. (1)
- 4.5.3 Name TWO types of trap doors and indicate which ONE can be locked. (3)
- 4.5.4 Use ANSWER SHEET 4.5.4 and draw, in good proportion, a sectional view as seen from **E-E**, with the door in position. ALL members are made of timber. (6)
- 4.6 Use ANSWER SHEET 4.6 and draw, to scale 1 : 20, only the left half of a SA (Howe) roof truss.

Use the following specifications:

- The total internal span is 6 000 mm.
- The overhang is 300 mm.
- The pitch of the roof is 30°.
- The roof truss is constructed of 114 x 38 mm timber.

**NOTE:** Use the breakline as reference.

(15)  
[40]

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

Start this question on a NEW page.

- 5.1 Differentiate, by means of TWO line diagrams, between a *framed lean-to roof truss* and a *close-coupled roof truss*. Draw ONLY the trusses with overhangs in your ANSWER BOOK and print the title below each drawing. (10)
- 5.2 Use ANSWER SHEET 5.2 and differentiate, by means of two-dimensional drawings, between the placement of the struts in a centre for a *segmental arch* and a *semicircular arch*.  
  
Complete the given drawings by drawing the bottom halves of the struts and the tie of each centre. (8)
- 5.3 ANSWER SHEET 5.3 shows an incomplete view of a part of a double-flying shore for a multistorey building.  
  
Complete the drawing by adding the omitted members between the vertical strut and the wall plate.  
  
Print any ONE label. (5)
- 5.4 ANSWER SHEET 5.4 shows the incomplete view of the formwork for the stairs of a flight of stairs with the outer string removed.  
  
Complete the drawing of the formwork by adding the omitted members between the bearer/joist and the soleplate. (7)
- [30]**

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

Start this question on a NEW page.

6.1 Various options are provided as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question numbers (6.1.1 to 6.1.5) in the ANSWER BOOK, e.g. 6.1.6 D.

6.1.1 The construction of till locks is similar to that of ... locks.

- A mortise
- B cut cupboard
- C rim
- D straight cupboard (1)

6.1.2 The ... of the night lock keeps the handle from being used.

- A locking button
- B bolt
- C keeper
- D None of the above-mentioned (1)

6.1.3 A drawer till lock is used in a ... position.

- A parallel
- B vertical
- C horizontal
- D All the above-mentioned (1)

6.1.4 The keeper of a night latch is mounted onto the ...

- A internal surfaces of doors
- B lock rails of doors.
- C doorjamb.
- D external surfaces of doors. (1)

6.1.5 Mortise locks are mortised into one of the ...

- A door rails.
- B door frame stiles.
- C door panels.
- D door stiles. (1)

6.2 Explain the methods of joining the following components under normal conditions:

6.2.1 Roof tiles to battens (2)

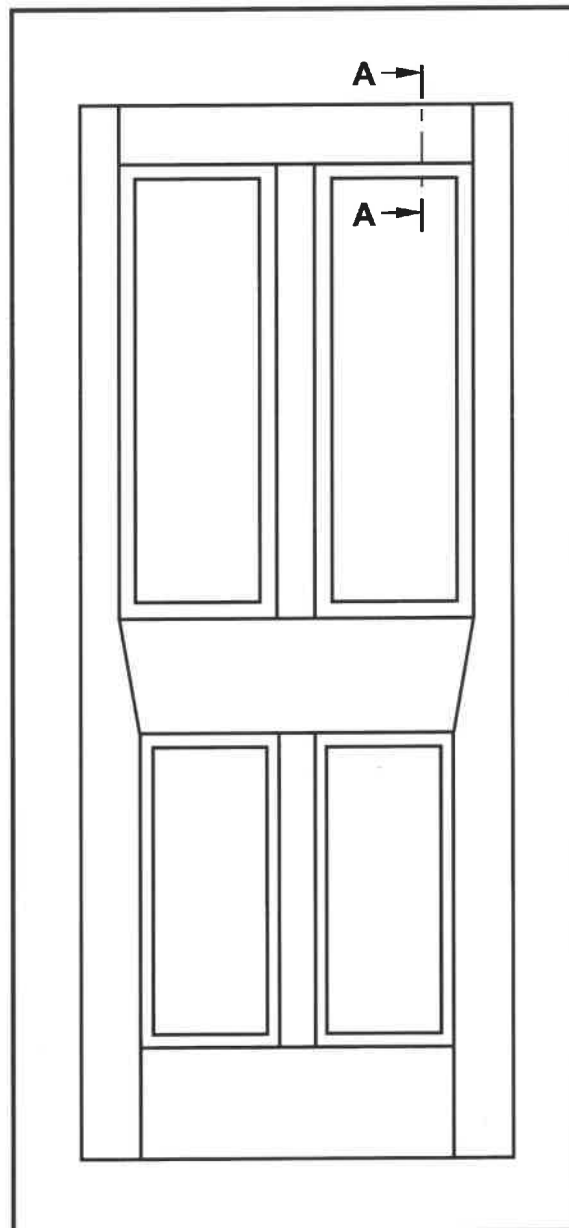
6.2.2 Wall plate to brickwork (2)

- 6.3 What is used to join roof tiles to battens under the following special conditions?
- 6.3.1 When a tile is broken (1)
- 6.3.2 In strong windy areas (1)
- 6.4 Use your ANSWER BOOK and differentiate, by means of sketches, between the following TWO methods when building upper-level suspended timber floors:
- Securing a joist into a wall
  - Securing a joist against a wall
- (6)
- 6.5 Use your ANSWER BOOK and sketch, in good proportion, an assembled isometric view of a concealed haunched mortice and tenon joint to join a stile and a top rail.
- DO NOT show hidden detail. (6)

- 6.6 FIGURE 6.6 shows the front view of a four-panel door with a lock rail, diminishing stiles and raised panels. Section line **A-A** is also indicated on the drawing.

In your ANSWER BOOK sketch, in good proportion, a vertical sectional view as seen from **A-A**.

Print any ONE label.



**FIGURE 6.6**

(9)



- 6.7 Study FIGURE 6.7 below. Match the word(s) in the list below with the labels in FIGURE 6.7. Write only the correct word(s) next to the label (A–H) in the ANSWER BOOK, e.g. J – Hatching.

tread; middle landing; riser; horizontal handrail; baluster;  
outer stringer; flight of stairs; top landing; wall;  
newel post; wall stringer; inclined handrail

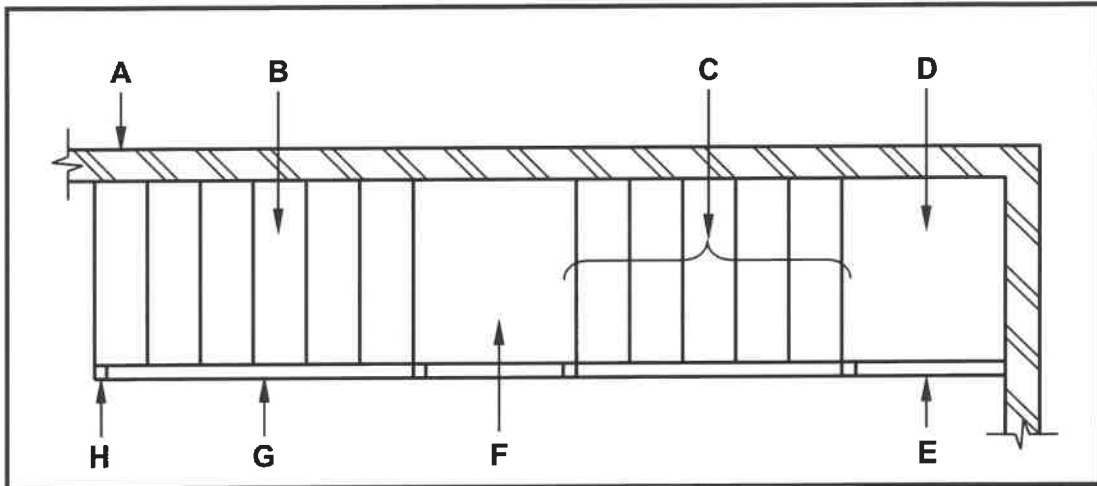


FIGURE 6.7

(8)  
[40]

TOTAL: 200

CENTRE NUMBER: 

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EXAMINATION NUMBER: 

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**ANSWER SHEET 2**

NO.	QUESTIONS	ANSWERS	MARKS
1.	What is the measurement of the dwelling facing Jacaranda street?		1
2.	Identify number 1.		1
3.	Identify number 2.		1
4.	Identify number 3.		1
5.	Identify the number indicating the boundary line.		1
6.	Name the colour that must be used to indicate the new dwelling on the site plan.		1
7.	What is omitted at number 6 if the NGL is 300 mm lower than the FFL?		1
8.	What type of fencing is used for the boundary wall for plot number 15?		1
9.	Name TWO materials that can be used for number 7.		2
10.	What is wrong with number 8?		1
11.	Name THREE electrical installations omitted in the house?		3
12.	Which plot is on the eastern side of the new dwelling?		1

13.	Identify the elevation with no windows.		1
14.	How many rodding eyes are shown on the site plan?		1
15.	How many external doors are there on the plan for the house?		1
16.	Which street is on the western side of the new dwelling?		1
17.	How many 1 200 mm x 800 mm windows are in the building?		1
18.	On what date was revision 1 completed?		1
19.	Draw the symbol for a wall-mounted urinal.		2
20.	Draw the symbol for a double-pole one-way switch.		3
21.	Draw the symbol for a staircase.		3
22.	Deduce from the notes column the type of globes that will be used in the bedroom.		1
23.	In which town will the new dwelling be erected?		1

24.	Calculate the total length of fencing that would be needed to fence plot number <b>15</b> . Give your answer in metres and show all your calculations.		6
25.	The internal area of the open plan kitchen is 72,94 m <sup>2</sup> . Calculate the length of number <b>5</b> . Give your answer in mm.		3
		<b>TOTAL:</b>	<b>40</b>

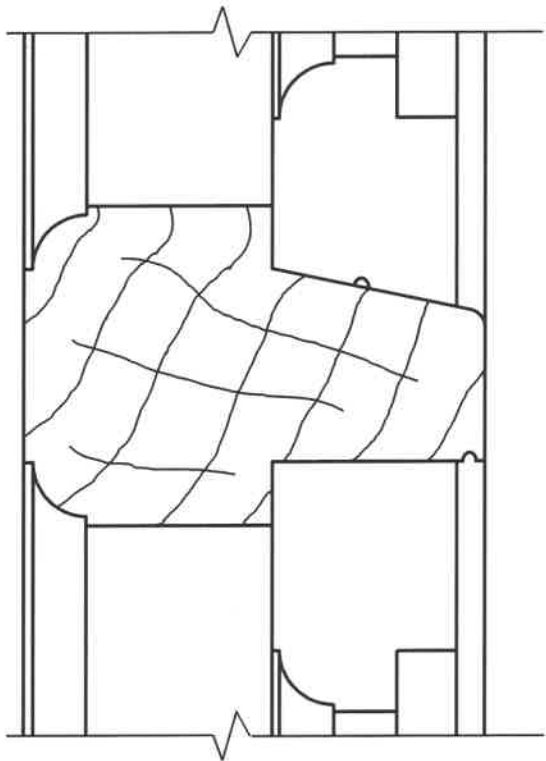
CENTRE NUMBER: 

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EXAMINATION NUMBER: 

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ANSWER SHEET 3.1.3



ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	2	
2	2	
3	2	
TOTAL:	6	

CENTRE NUMBER: 

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EXAMINATION NUMBER: 

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**ANSWER SHEET 3.2**

3.2

MEMBER	QUANTITY	LENGTH	WIDTH	THICKNESS	TOTAL LENGTH
Side	_____	2 550	520	16	5 100
Rail	1	_____	100	16	868
Top of cupboard	1	868	_____	16	868
Intermediate side	1	_____	520	16	1 548
Bottom of cupboard	1	868	520	16	_____
Shelving	_____	_____	520	16	1 278
Kick plate	1	868	_____	16	868

(8)

CENTRE NUMBER: 

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EXAMINATION NUMBER: 

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**ANSWER SHEET 3.4**

ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	1	
2	1	
3	1	
4	1	
5	1	
6	2	
7	1	
<b>TOTAL:</b>	<b>8</b>	

<b>CENTRE NUMBER:</b>							
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<b>EXAMINATION NUMBER:</b>													
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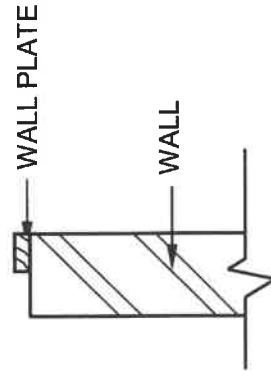
**ANSWER SHEET 4.5.4**

ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	1	
2	1	
3	1	
4	1	
5	1	
6	1	
<b>TOTAL:</b>	<b>6</b>	



[illegible]

**ANSWER SHEET 4.6**

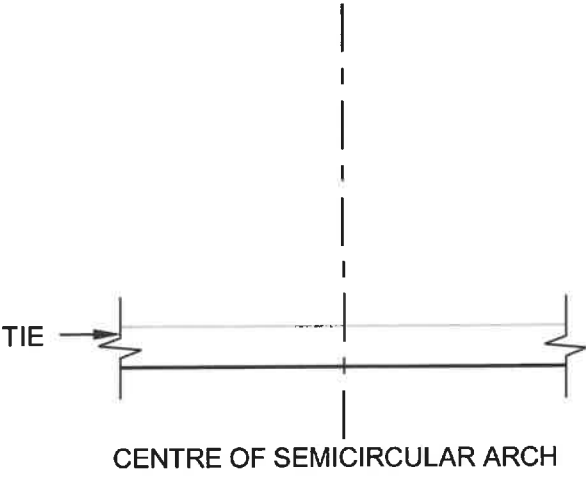
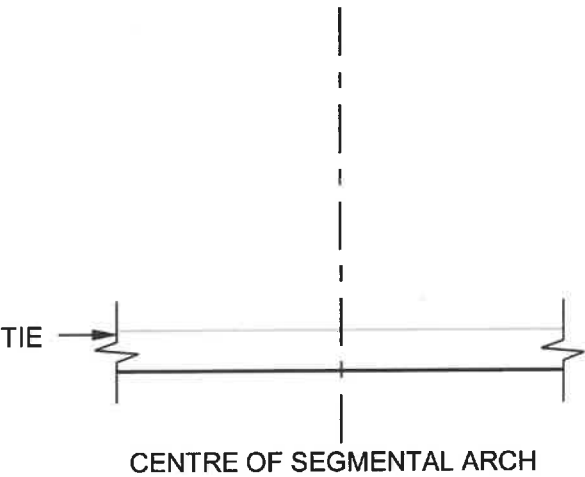


ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	2	
2	2	
3	2	
4	2	
5	2	
6	1	
7	2	
8	2	
<b>TOTAL:</b>	<b>15</b>	

CENTRE NUMBER:

EXAMINATION NUMBER:

ANSWER SHEET 5.2



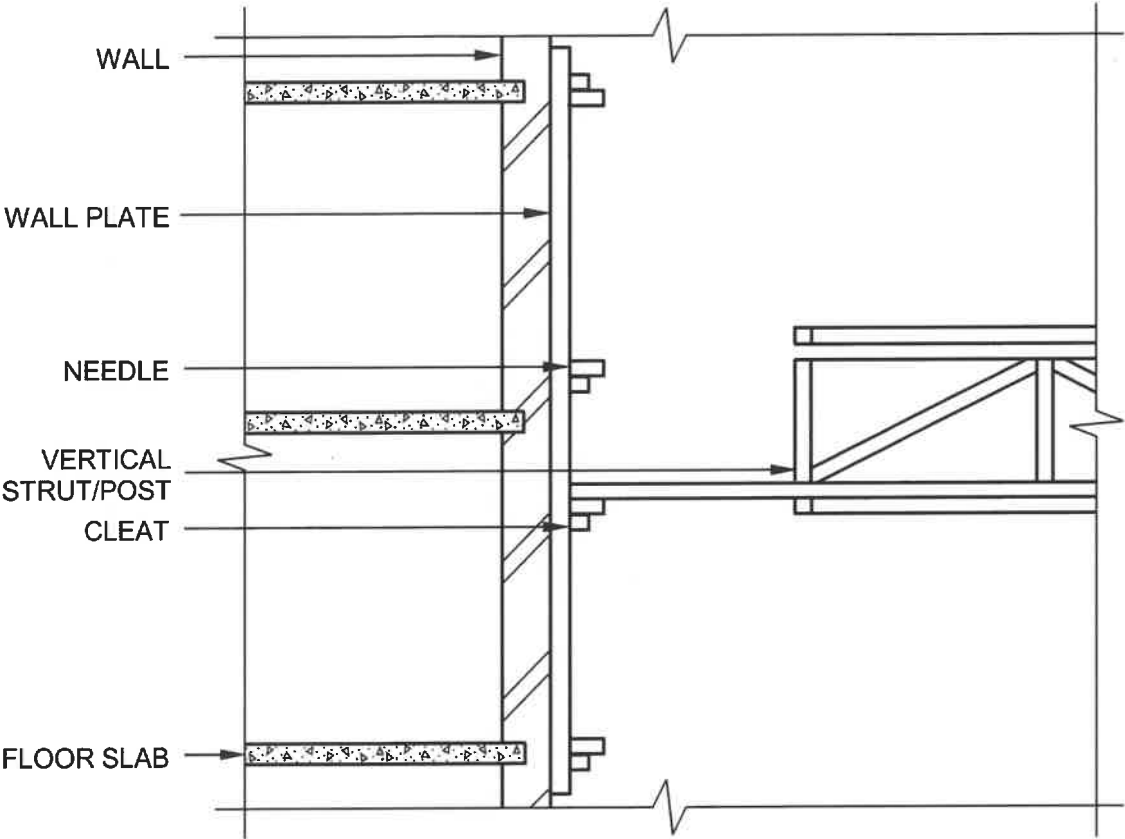
ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	3	
2	1	
TOTAL:	4	

ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	3	
2	1	
TOTAL:	4	

CENTRE NUMBER:

EXAMINATION NUMBER:

ANSWER SHEET 5.3



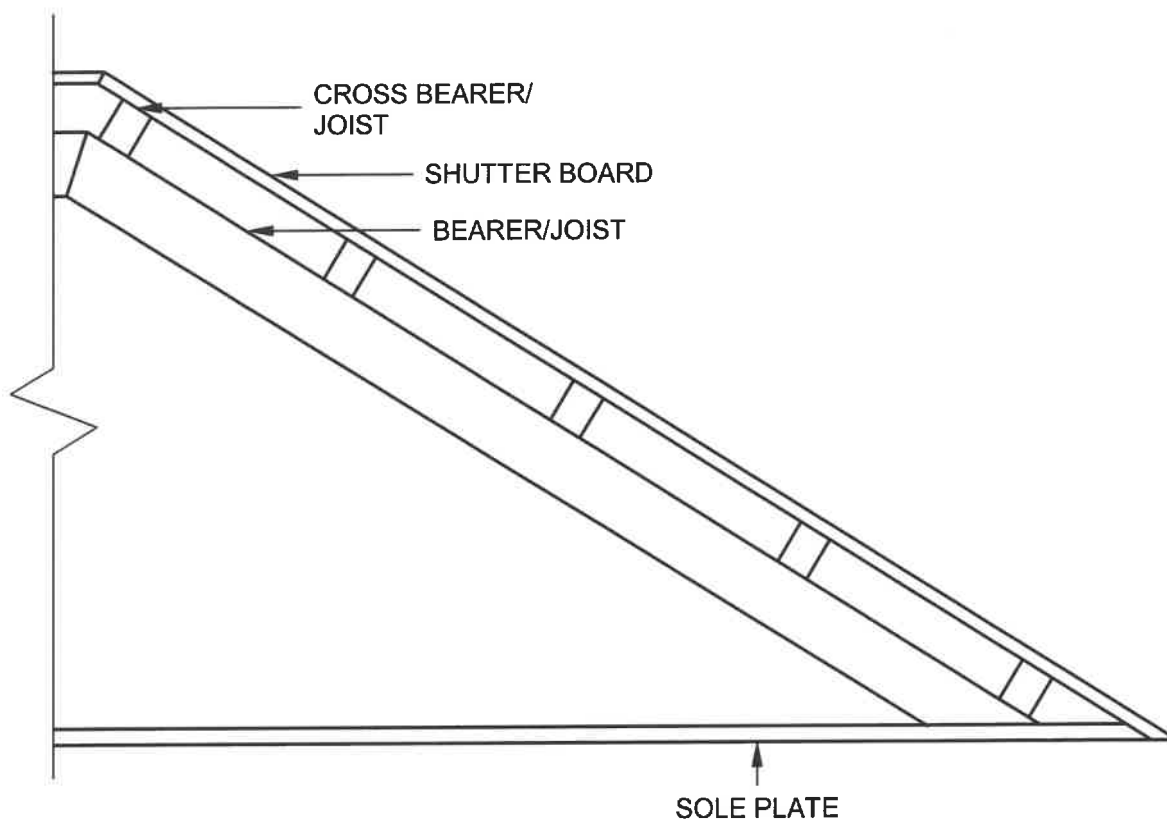
ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	2	
2	1	
3	1	
4	2	
TOTAL:	6	

CENTRE NUMBER: 

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EXAMINATION NUMBER: 

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**ANSWER SHEET 5.4**

ASSESSMENT CRITERIA		
NO.	MARK	CANDIDATE'S MARK
1	1	
2	2	
3	1	
4	1	
5	2	
<b>TOTAL:</b>	<b>7</b>	