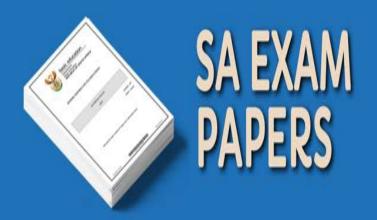


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GRADE 12

ENGINEERING GRAPHICS AND DESIGN P1 NOVEMBER 2015

MARKS: 100

TIME: 3 hours

This question paper consists of 6 pages.

INSTRUCTIONS AND INFORMATION

- 1. This question paper consists of FOUR questions.
- 2. Answer ALL the questions.
- 3. ALL drawings are in first-angle orthographic projection, unless otherwise stated.
- 4. ALL drawings must be completed using instruments, unless otherwise stated.
- 5. ALL answers must be drawn accurately and neatly.
- 6. ALL the questions must be answered on the QUESTION PAPER as instructed.
- 7. ALL the pages, irrespective of whether the question was attempted or not, must be re-stapled in numerical sequence in the TOP LEFT-HAND CORNER ONLY.
- 8. Time management is essential in order to complete all the questions.
- 9. Print your examination number in the block provided on every page.
- 10. Any details or dimensions not given must be assumed in good proportion.

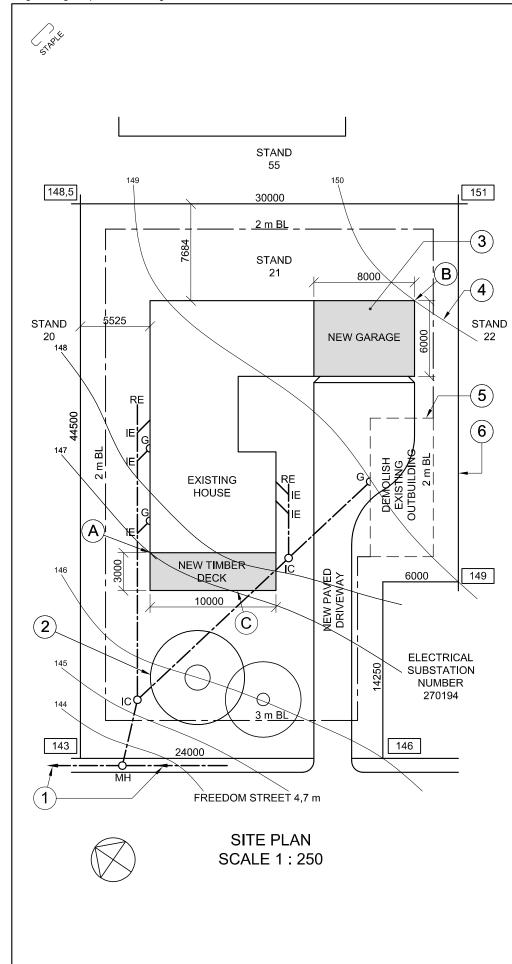
	FOR OFFICIAL USE ONLY														
QUESTION	MARK	S OBTA	AINED	1/2	SIGN	МС	DERAT	ED	1/2	SIGN	RE	-MARKI	NG	1/2	SIGN
1															
2															
3															
4															
TOTAL															_
	2	0	0			2	0	0		_	2	0	0		

FINAL CONVERTED MARK	CHECKED BY
100	

COMPLETE THE FOLLOWING:
CENTRE NUMBER
CENTRE NUMBER
EXAMINATION NUMBER
EXAMINATION NUMBER



Engineering Graphics and Design/P1 NSC DBE/November 2015



NOTE:

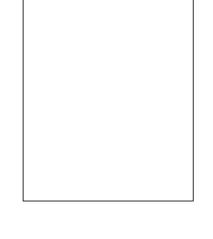
Contractors must verify all dimensions and levels on site before commencing work, Architects must be notified immediately of any discrepancies.

ARCHITECT'S SIGNATURE

CLIENT'S SIGNATURE

ANSWER 20

In the space below, draw, in neat freehand, the front view and top view of the *SANS 10143* graphical symbol for a BATH.



1	2015-01-27	Add timber deck
REVISION	DATE	DESCRIPTION

KEY ARCHITECTS

96 Protea Street POTCHEFSTROOM

083 130 2201 key@webmail.co.za

PRINTED BY DATE OF PRINT
ILM PRINTERS 2015-02-13

DRAWING TITLE

SITE PLAN

PROJECT

PROPOSED NEW GARAGE AND TIMBER DECK FOR MRS SCHUTTE ON STAND 21, FREEDOM STREET.

PROJECT NUM	MBER	DRAWING NUM	/BER				
AFSP	-2015	VG 002					
DATE	DRAWN	CHECKED	SCALE				
2015-01-10	AD	BC	1:250				
REFERENCE C	ODE						

REFERENCE CODE

Q1P1N2015

QUESTION 1: ANALYTICAL (CIVIL)

Given:

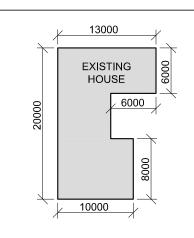
The site plan of a existing house with a proposed new garage and timber deck, a title panel and a table of questions. The drawing has not been prepared to the indicated scale.

Instructions:

Complete the table below by neatly answering the questions, which refer to the accompanying drawing and title panel. [30]

	QUESTIONS	NSWERS	
1	What is the project number?	1	
2	How many signatures are required?	1	
3	How many revisions have been made to the drawing?	1	
4	Who is the client?	1	
5	On what date was the site plan printed?	1	
6	How many new additions are indicated on the site plan?	1	
7	What does the abbreviation IC stand for?	1	
8	What is indicated by the arrows on the line at 1?	1	
9	Name the feature at 2.	1	
10	In what colour should the feature at 3 be shown?	1	
11	What does the line at 4 indicate?	1	
12	What does the broken line at 5 indicate?	1	
13	What is the length of the boundary line at 6 in metres?	1	
14	What is the width of Freedom Street in millimetres?	1	
15	What is the difference in ground level height between corner A and corner B of the buildings in metres?	2	
16	On which side of the existing house is the new timber deck?	2	
17	Which municipal service is found on the land adjacent to stand 21?	2	
18	In the space below, determine the perimeter of the existing house in metres.	3	
19	In the space below, determine the combined total area of the existing house and the square metres.	e new garage in 3	
20	In the space provided in the title panel, draw, in neat freehand, the front view and to 10143 graphical symbol for a BATH.	op view of the SANS 4	
		TOTAL 30	

ANSWER 18 Show ALL calculations.



ANSWER 19 Show ALL calculations.

EXAMINATION NUMBER

EXAMINATION NUMBER 2

Please turn over



QUESTION 2: INTERPENETRATION AND DEVELOPMENT

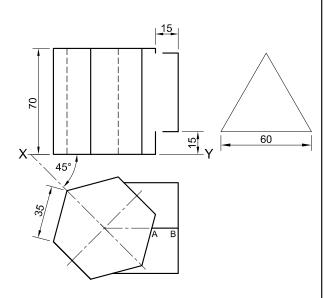
Given:

- The incomplete front view and top view of an equilateral triangular prism that has been shaped to fit around a right regular hexagonal prism. The axes of both prisms lie in a common vertical plane.
- An auxiliary view of the triangular prism.

Instructions:

Draw, to scale 1:1, the following:

- 2.1 The given top view
- 2.2 The complete front view clearly showing the curve of interpenetration
- 2.3 The complete right view
- 2.4 The development of the surface of the triangular prismMake AB the seam.
- Show ALL hidden detail.
- Show ALL necessary construction. [35]

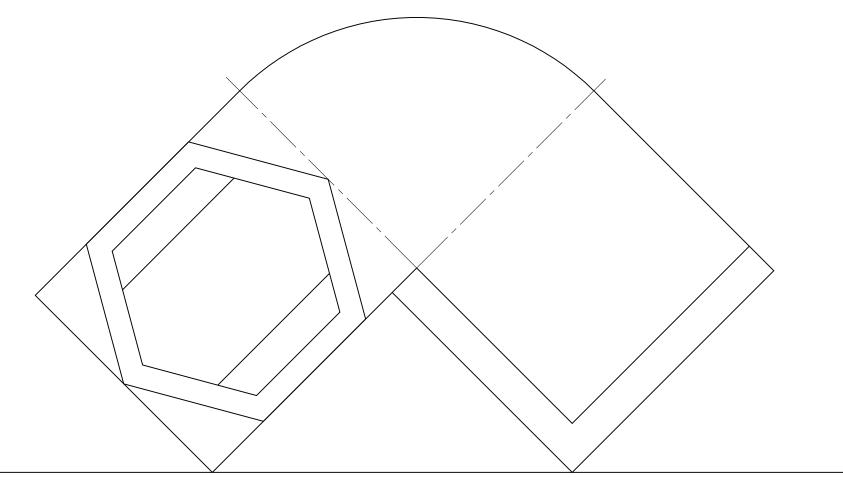


AB IS THE SEAM.

	ASSESSMENT CRITERIA					
1	TOP VIEW	6				
2	FRONT VIEW	11				
3	RIGHT VIEW	7				
4	DEVELOPMENT	11				
PE	NALTIES (-)					
	TOTAL	35				
	EXAMINATION	NUMBE	R			

EXAMINATION NUMBER





QUESTION 3: PERSPECTIVE

Given:

Three views of a wooden deck with a hexagonal pool and the information needed to draw a two-point perspective drawing.

PP - Picture plane

HL - Horizon line

GL - Ground line

SP - Station point

Instructions:

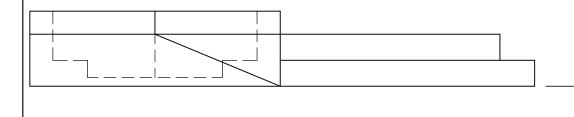
Complete the perspective drawing.

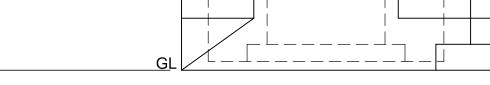
- Align the drawing sheet with the ground line (GL).
- Determine and label the vanishing points.
- Show ALL necessary construction.
- NO hidden detail is required.

[39]

DBE/November 2015

	ASSESSMENT CRITERIA						
1	CONSTRUCTION + VPs	6					
2	BASE + STAIRS	12½					
3	POOL	13½					
4	CIRCULAR ARC	7					
PEN	NALTIES (-)						
	TOTAL	39					





EXAMINATION NUMBER

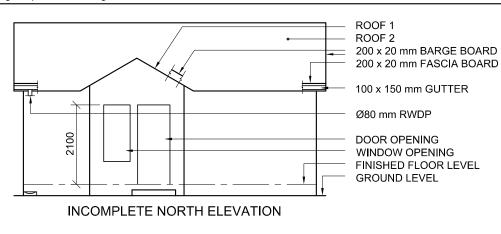
EXAMINATION NUMBER 4

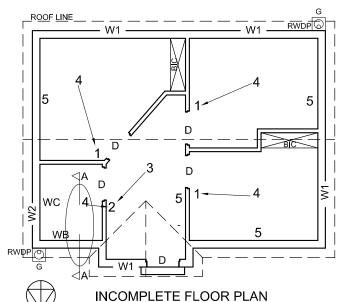
+ SP



PP and HL

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GROUND LEVEL

600

INCOMPLETE FOUNDATION

AND EXTERNAL WALL DETAIL

FEATURES

DOOR WINDOW WINDOW W2

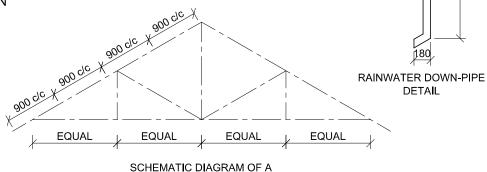
FIXTURES

WC TOILET WB WASH BASIN

ELECTRICAL FITTINGS

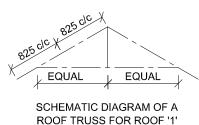
- 1. ONE-WAY SWITCH SINGLE-POLE 2. ONE-WAY SWITCH - DOUBLE-POLE
- 3. FLUORESCENT LIGHT 2 x 40 W
- 4. CEILING LIGHT
- 5. SWITCHED SOCKET OUTLET

THE ARROW SHOWS THE LIGHT CONNECTION TO THE SWITCH.



ROOF NOTES: ROOF PITCH 30°

ROOF TRUSS FOR ROOF '2'



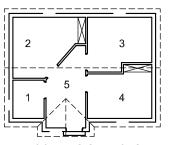
200 x 20 mm FASCIA BOARD ON ALL SIDES AND 200 x 20 mm BARGE BOARD ON THE **GABLED ENDS**

ROOF COVER 15 mm FIBRE CEMENT SHEETING ON 75 x 50 mm PURLINS SPACED ACCORDING TO SCHEMATIC DIAGRAMS

114 x 38 mm ROOF TRUSSES ON 114 x 38 mm WALL PLATES

9 mm CEILING BOARD ON 38 x 38 mm BRANDERING STRIPS @ 600 mm c/c

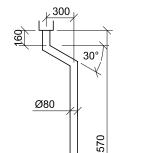
100 x 150 mm GUTTER ON ALL SIDES

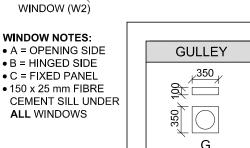


ROOM DESIGNATIONS

FLOOR FINISHES

1 TOILET: 2 ROOM 1: CARPET CARPET 3 ROOM 2: CARPET 4 ROOM 3: 5 RECEPTION: TILE





DOOR FRAME AND

DOOR (D)

WINDOW AND DOOR SCHEDULE

2100

С

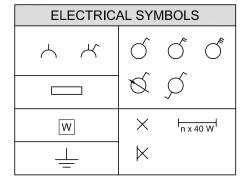
WINDOW (W1)

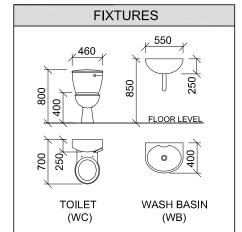
600

В

TO FIT

ROOF COMPONENTS						
\boxtimes	38 x 38 mm BRANDERING					
	114 x 38 mm WALL PLATE					
	75 x 50 mm PURLINS					





QUESTION 4: CIVIL DRAWING

Given:

- The incomplete north elevation of new consulting rooms, showing the walls, the door and window openings, the roof
- The incomplete floor plan showing the walls, positions of the doors, windows, fixtures and electrical layout
- The incomplete foundation and external wall detail
- Room designations and floor finishes
- The rainwater down-pipe detail
- Schematic diagrams of the TWO types of roof trusses and roof notes
- A window and door schedule
- The gulley detail
- A table of roof components
- A table of electrical symbols
- A table of fixtures
- The incomplete floor plan of the new consulting rooms, drawn to scale 1:50, on page 6

Instructions:

Answer this question on page 6.

4.1 Using the given incomplete floor plan, draw, in first-angle orthographic projection and to scale 1:50, the following views of the **new consulting rooms**:

4.1.1 THE COMPLETE FLOOR PLAN

Add the following features to the drawing:

- ALL doors and windows
- ALL fixtures as indicated by abbreviations
- ALL electrical fittings as indicated by numbers
- ALL hatching detail

4.1.2 THE COMPLETE NORTH ELEVATION

Show the following features on the drawing:

- The outside walls, door and window detail
- The roof detail, including the fascia boards, barge boards, gutters, rainwater down-pipe and gulley
- The finished floor level
- 4.2 In the space provided, draw, to scale 1: 20, a DETAILED SECTION on cutting plane A-A of the area in the ellipse shown on the incomplete floor plan.

Show the following features on the drawing:

- The complete foundation and external wall detail
- The roof detail, including the fascia board and gutter
- ALL features and fixtures to the left of the section
- ALL hatching detail. ONLY the substructure hatching may be drawn in neat freehand.

Label the following:

- The north elevation
- The room designations and floor finishes
- Using the correct abbreviations, label the following features in the correct view; ground level, damp-proof course and the finished floor level

NOTE:

- Planning is essential.
- ALL drawings must comply with the guidelines and **graphical symbols** as contained in the SANS 10143.



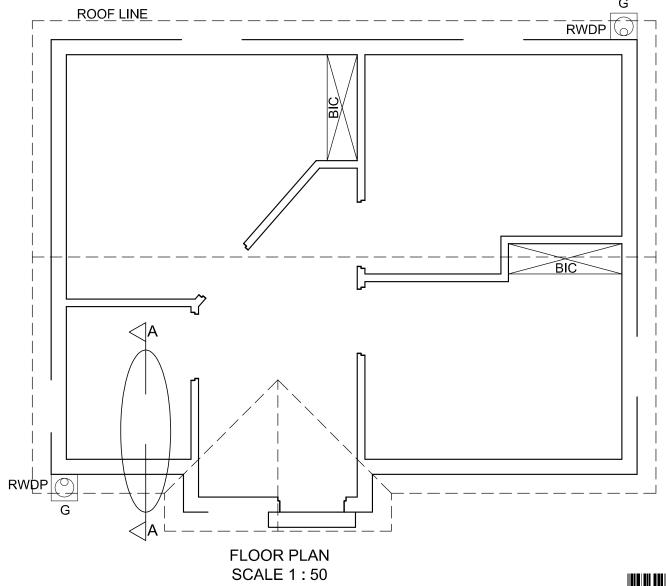
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FOR OFFICIAL USE ONLY	
INCORRECT SCALE(S)	
NON-ALIGNMENT OF VIEWS	
FEATURES DRAWN IN FREEHAND	
TOTAL PENALTIES (-)	
-	

MAF	MARK ALLOCATION FOR SECTION OF ROOF (4.2 No. 1)									
Α	В	O	D	Е	F	G	Ι	1	٦	

						_
	ASS	ESSMEN	IT CRITE	RIA		
		FLOOR	PLAN			
		POSSIBLE	OBTAINED	SIGN	MODERA	T
1	DOORS + WINDOWS	15				
2	ELECTRICAL	9				
3	FIXTURES	4				
4	HATCHING	4				
5	LABELS	5				
	SUBTOTAL	37				
	N	ORTH EL	EVATION	1		
1	ROOF	8½				
2	WALLS + RWDP + FFL + GULLEY	6½				
3	DOOR + WINDOW	6				
4	LABELS	1½				
	SUBTOTAL	22½				
	DI	ETAILED	SECTIO	١		
1	ROOF DETAIL	11				
2	FOUNDATION + WALL + RWDP + GULLEY + LINE BREAK	11				
3	WINDOW + WC + WB	9½				
4	HATCHING	4				
5	LABELS	1				
	SUBTOTAL	36½				
	TOTAL	96				
то	TAL PENALTIE:	S (-)				
	GRAND	TOTAL				_
	E	XAMINATIO	N NUMBER			
		VARAINIATIO	N NI MEE			_
	E,	XAMINATIO	IN NOMBER	<u> </u>		(



DETAILED SECTION ON A-A SCALE 1:20

