



Coimisiún na Scrúduithe Stáit
State Examinations Commission

**LEAVING CERTIFICATE
APPLIED 2008**

MARKING SCHEME

**GRAPHICS & CONSTRUCTION
STUDIES**

COMMON LEVEL



Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Applied - 2008

Vocational Specialism - Graphics & Construction Studies (240 marks)

Tuesday, June 10th, 2008
Morning, 9.30 am - 11.00 am

For the Superintendent only

Marking Scheme

1.	Total of end of page totals	
2.	Aggregate total of all disallowed question(s)	
3.	Total mark awarded (1 minus 2)	
4.	Bonus mark for answering through Irish (if applicable)	
5.	Total mark awarded if Irish Bonus (3+4)	
Note: The mark in row 3 (or row 5 if an Irish Bonus is awarded) must equal the mark in the Mór-Iomlán box on the script		

General Directions

- Write your examination number in this space:
- There are two sections in this paper.

Section 1 - Answer **both** questions. - 105 marks

Q1 - Short answer questions
Q2 - Graphic Communication

Section 2 - Five questions, answer **any three**. - 135 marks

Q1 - Construction
Q2 - Building Services
Q3 - Woodcraft
Q4 - Design and Manufacture of Educational Toys
Q5 - Computer Aided Design
- Write your answers in the spaces provided and include sketches as appropriate.

Section 1

COMPULSORY QUESTION 1

(60 Marks)

1. Answer any TWELVE of the following FIFTEEN short questions.

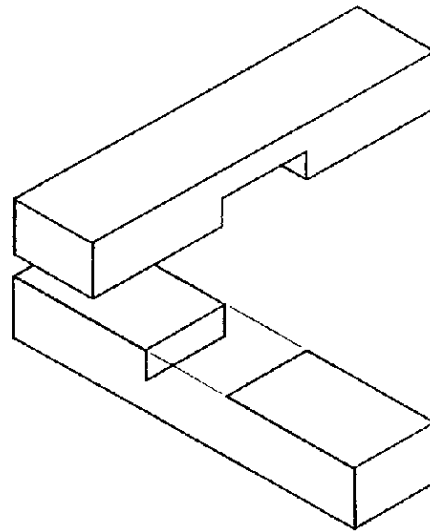
(a) Name the tool shown.

Name: **5 marks**



(b) Complete the diagram of the cross-halving joint shown.

5 marks



(c) Explain what is meant by the term 'KNOCKDOWN FITTINGS'?

5 marks

(d) Name the **TWO** types of power tools shown.

1



2



2.5 marks each

1

Belt sander / sander

2

Skill saw / saw

(e) Explain what you understand by the term: 'Off-Site Construction'.

5 marks

(f) List **TWO** factors that should be considered when applying a finish to a woodwork project.

1 **2.5 marks**

2. **2.5 marks**

(g) Shown is a cordless power drill.
State **TWO** advantages of using cordless power tools.



Advantage 1: **2.5 marks**

Advantage 2: **2.5 marks**

(h) The design for the table shown is based on a hexagon.
Draw a hexagon given one side AB.



**5 lines correctly drawn @ 1 mark each
= 5 marks**

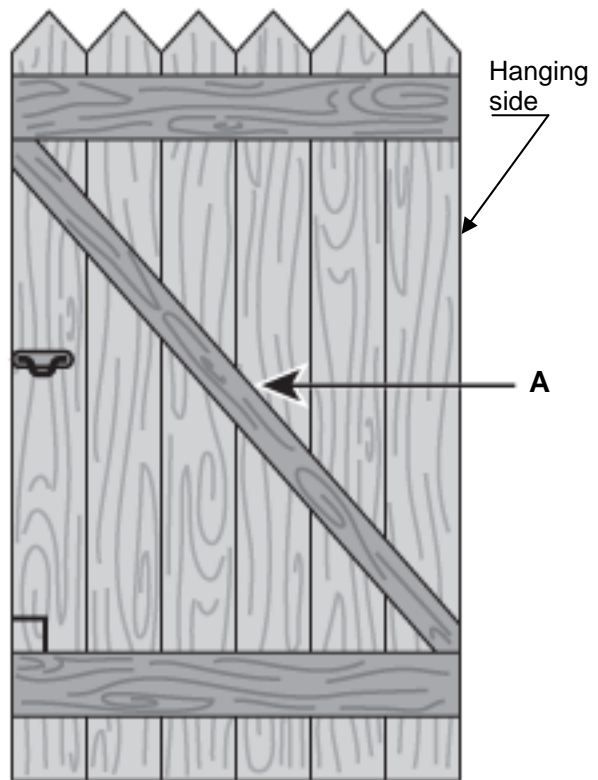
A  B



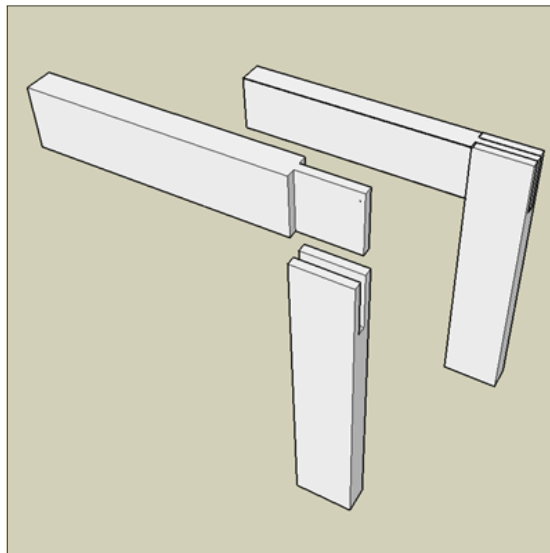
- (i) A wooden gate is shown.
What is the correct name for the force acting in member **A**?

- COMPRESSION
- TORSION
- TENSION
- SHEAR

5 marks



- (j) The diagram shows two views of a joint used in wood, one assembled and one exploded. Name the wood joint shown and give one example of where this joint might be used.



Name : **2.5 marks**

Use: **2.5 marks**

- (k) The diagram shows a 3 core electrical cable. Identify each wire by selecting the correct name from the list below:



List: **Earth, Live, Neutral.**

Brown: **Live**

Blue: **Neutral**

Green and yellow: **Earth**

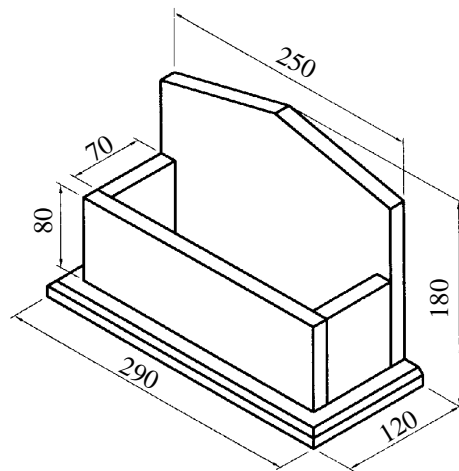
1.5 marks each

5 marks if all correct

- (l) The diagram shows a letter rack. Complete the cutting list for the letter rack. (All material is 10mm thick.)

5 x 1 mark each = 5 marks

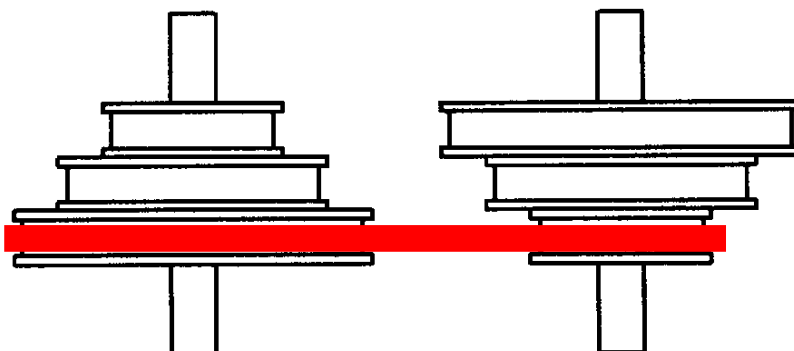
Description	Quantity	Length	Width	Thick-ness
Base	1	290	120	10
Back	1	250	170	10
Front	1	250	80	10
Sides	2	70	80	10



- (m) The diagram shows an incomplete pulley system for a lathe. Illustrate on the diagram the position of the belt to achieve the minimum speed for the lathe.

Spindle Shaft

Motor Shaft



5 marks

- (n) Solar garden lights are in common use today. List **TWO** other uses for solar technology related to construction.

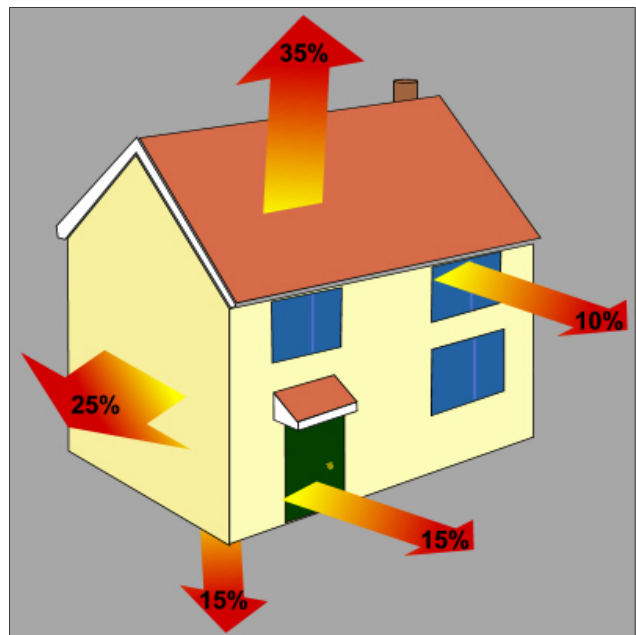


2 x 2.5 marks each

1. _____

2. _____

- (o) The diagram shows the percentage heat loss from a house through the major elements. Suggest **TWO** ways in which the loss of heat from a house can be reduced.



2 x 2.5 marks each

1. _____

2. _____

Section 1

COMPULSORY QUESTION 2

(45 Marks)

2. Graphic Communication

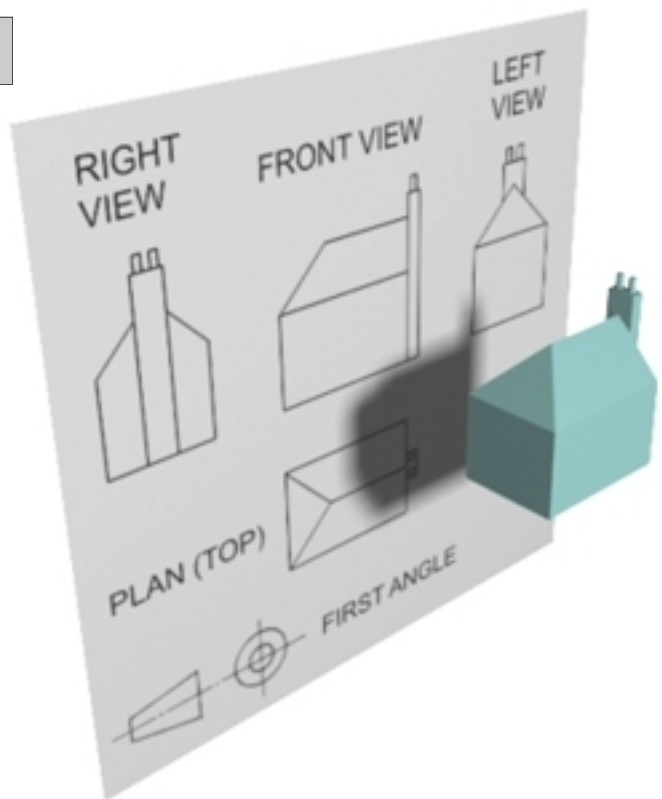
The sketch shows a drawing system.

- (a) (1) Circle the correct name for this drawing system from the following list:

Oblique Projection

Orthographic Projection

Isometric Projection



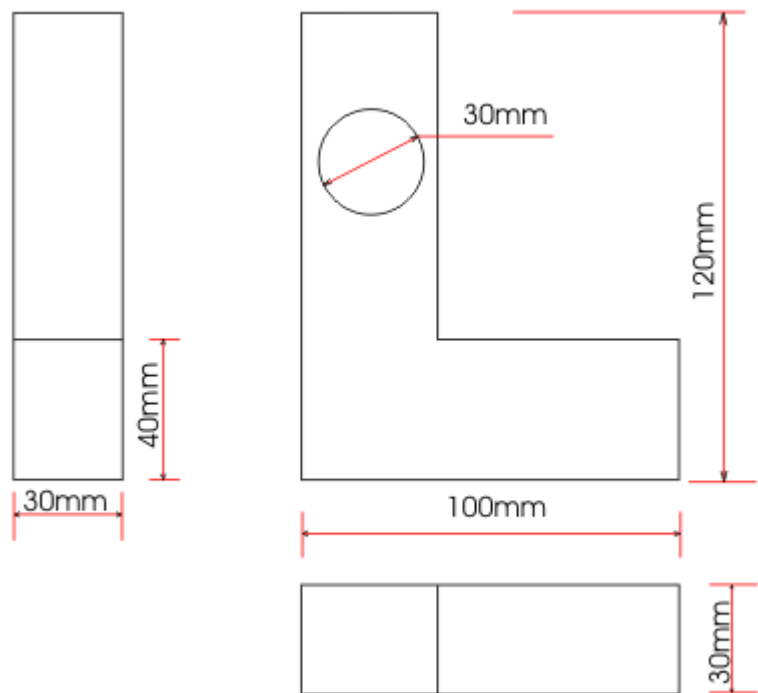
Three views of an object are shown.

- (a) (2) Name each view.
 (a) (3) Add any **TWO** additional dimensions.

(a) (1) = 3 marks

(a) (2) = 3 x 2 marks each
= 6 marks

(a) (3) = 2 x 3 marks each
= 6 marks



(b) The picture shows an isometric view of a building.

Redraw the isometric view of the building in the space provided.

15 marks in total.

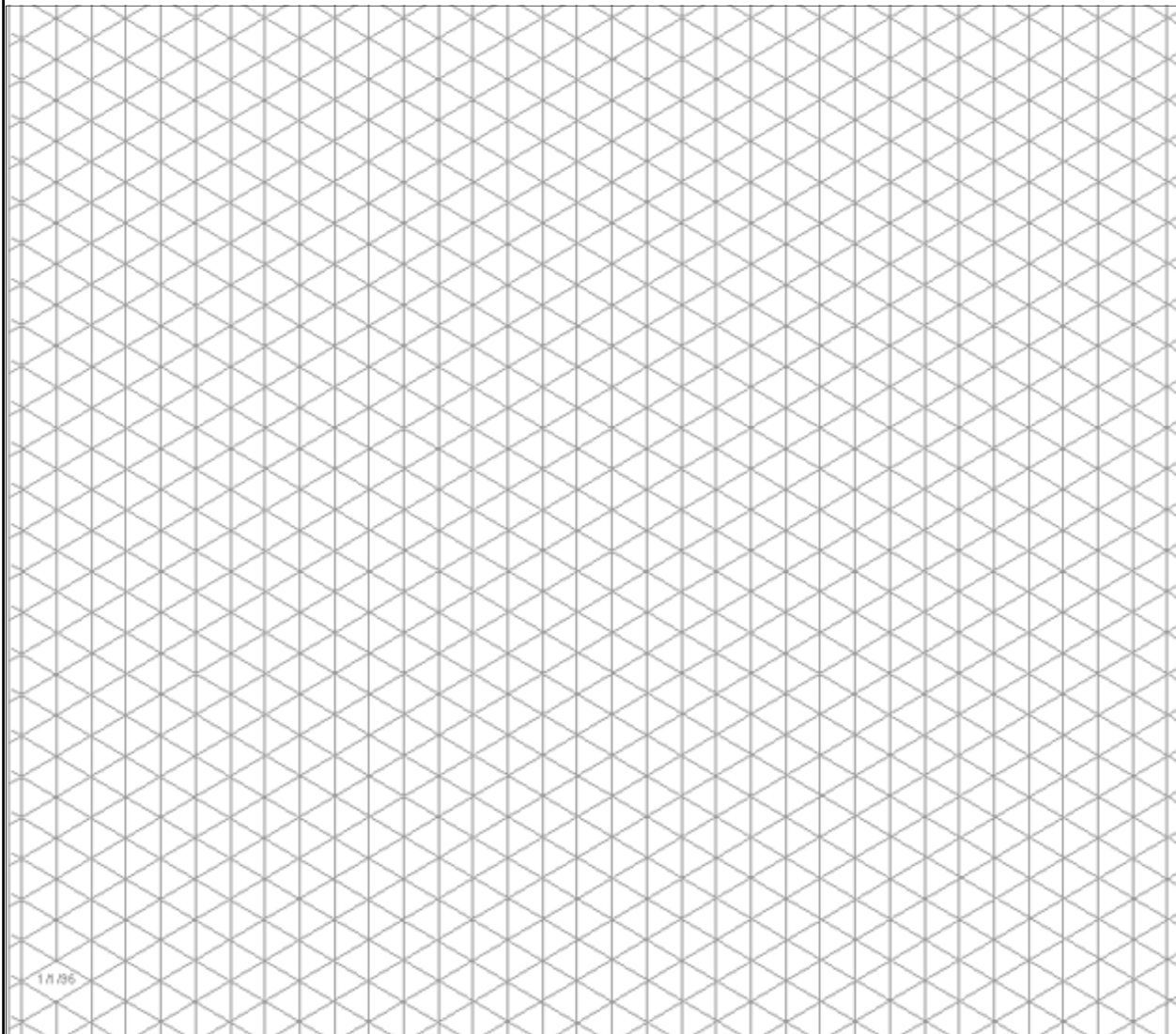
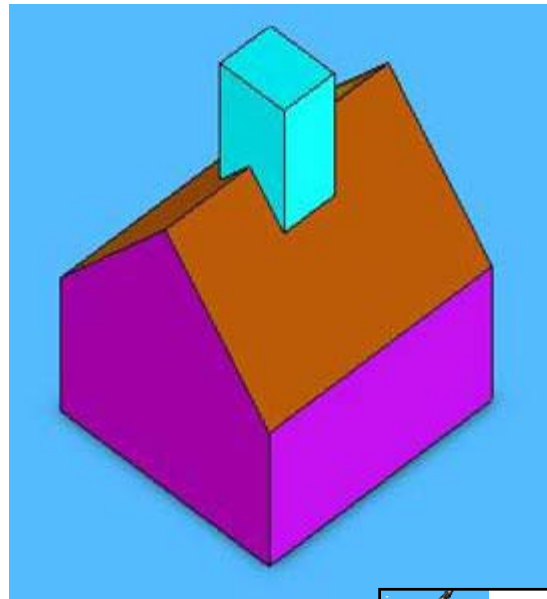
Gable = 3 marks

Front = 3 marks

Roof = 3 marks

Chimney = 3 marks

Chimney intersection = 3 marks



1/1/06

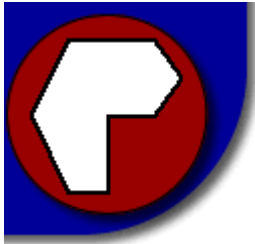
(c) Five logos / signs based on polygons are shown below.

Name the polygon used to design each logo / sign.

5 x 3 marks each = 15 marks

Logo / Sign

Polygon name:



Hexagon



Pentagon



Hexagon



Pentagon



Octagon

Section 2

(135 Marks)

Answer ANY THREE Questions from this section.

1. Construction

- (a) The poster shown highlights precautions to be taken in relation to fire safety in a school.

Suggest **FIVE** precautions that should be included in a similar fire safety poster for the home.

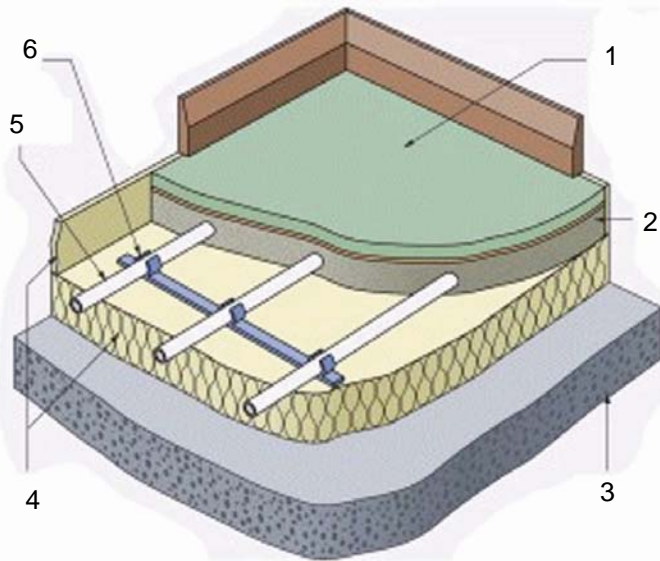
1. _____
2. _____
3. _____
4. _____
5. _____

5 x 3 marks each = 15 marks





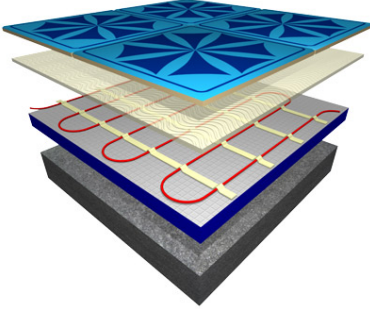
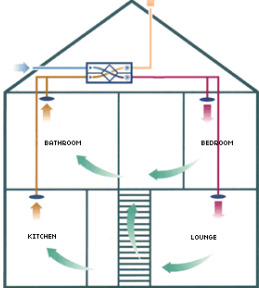

- (b) The diagram shows the construction details of underfloor heating to the ground floor of a house. Identify any **FIVE** of the six components shown.

1. Finished floor
2. Concrete slab
3. Sub-floor / hardcore
4. Insulation
5. Underfloor heating pipes
6. Pipe supports / stabilisers



5 x 3 marks each = 15 marks

(c) With increasing energy costs people are encouraged to use more efficient energy solutions when constructing their homes. Five different systems are shown. Place a tick beside the name of the correct system that matches each image.

	<p>Underfloor heating systems</p> <p>Geothermal heat pumps <input checked="" type="checkbox"/></p> <p>Wood pellets and wood chip boilers</p> <p>Solar panel systems</p> <p>Heat recovery ventilation systems</p>
	<p>Underfloor heating systems</p> <p>Geothermal heat pumps</p> <p>Wood pellets and wood chip boilers <input checked="" type="checkbox"/></p> <p>Solar panel systems</p> <p>Heat recovery ventilation systems</p>
	<p>Underfloor heating systems <input checked="" type="checkbox"/></p> <p>Geothermal heat pumps</p> <p>Wood pellets and wood chip boilers</p> <p>Solar panel systems</p> <p>Heat recovery ventilation systems</p>
	<p>Underfloor heating systems</p> <p>Geothermal heat pumps</p> <p>Wood pellets and wood chip boilers</p> <p>Solar panel systems</p> <p>Heat recovery ventilation systems <input checked="" type="checkbox"/></p>
	<p>Underfloor heating systems</p> <p>Geothermal heat pumps</p> <p>Wood pellets and wood chip boilers</p> <p>Solar panel systems <input checked="" type="checkbox"/></p> <p>Heat recovery ventilation systems</p>

2. Building Services

(a) Access for the disabled is now a standard part of the Building Regulations.

Discuss **THREE** areas in the home where disabled access needs to be considered and outline what measures can be put in place to make access for the disabled easier.

3 x 5 marks each = 15 marks



1. _____

2. _____

3. _____

(b) Solar energy is an alternative energy in common use.

(b) (1) List **TWO** advantages of solar energy.

1. **2.5 marks**

2. **2.5 marks**

(b) (2) List **TWO** disadvantages of solar energy.

1. **2.5 marks**

2. **2.5 marks**

(b) (3) Name **TWO** fossil fuels that are used to produce electricity in Ireland

1. **2.5 marks**

2. **2.5 marks**

(c) The diagram shows a number of sources of water pollution. Identify and explain **THREE** improvements that industry and agriculture can take to reduce or eliminate water pollution.

3 x 5 marks each = 15 marks








3. Woodcraft

- (a) The picture shows a circular rack for storing CDs.
Briefly describe how you would mark out and make the base of the rack.





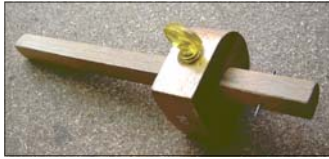












15 marks

- (b) The table below shows five manufactured boards.
Name each of the manufactured boards shown and suggest one use for each.

Manufactured Board					
Name:	Blockboard 2 marks	Chipboard 2 marks	MDF 2 marks	Plywood 2 marks	OSB 2 marks
Use:	1 mark	1 mark	1 mark	1 mark	1 mark

(c) Name each of the **FIFTEEN** hand tools shown below. **15 x 1 mark each = 15 marks**

		
Claw hammer	Chisel	Coping saw
		
Brace	Marking gauge	Mallet
		
Smoothing plane	Wheel brace	Mortise gauge
		
Try square	Shoulder plane	G cramps
		
Warrington hammer	Sliding bevel	Sash cramp / T-Bar cramp

4. Design and Manufacture of Educational Toys

- (a) (1) Describe with the aid of sketches a toy you made in the educational toy module..



6 marks

- (a) (2) List **THREE** educational features of the toy. **3 x 2 marks each = 6 marks**

1. _____

2. _____

3. _____

- (a) (3) Discuss why **Health and Safety** considerations are important in the design and manufacture of educational toys. **3 marks**

(b) A toy boat with a device to power it through water is shown.

(b) (1) Suggest **TWO** suitable materials for this toy.

1. **3 marks**

2. **3 marks**

(b) (2) Describe how you would make the mechanism to enable the boat to move in water.

9 marks



(c) A wooden toy is shown below.

(c) (1) Describe using notes and sketches how you would cut out the profile of the fish.

9 marks



(c) (2) List **TWO** safety considerations you should make when designing this toy.

1. **3 marks**

2. **3 marks**

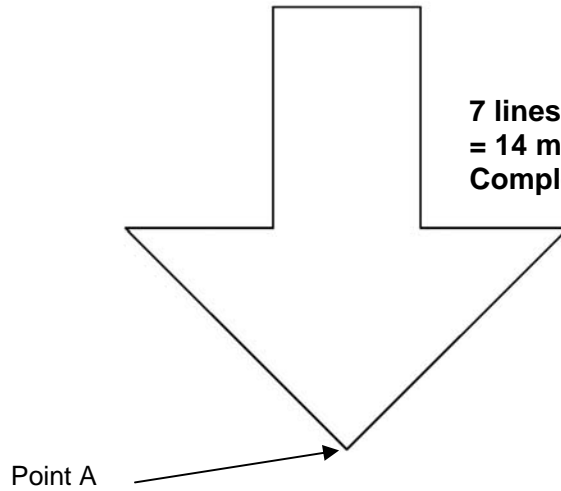
5. Computer Aided Design

- (a) Relative co-ordinates are used to draw using a CAD package.
Draw a shape using the given co-ordinates starting from point A.



From point A
To point: @30,30
To point: @-20,0
To point: @0,30
To point: @-20,0
To point: @0,-30
To point: @-20,0
To point: @30,-30.

7 lines x 2 marks each
= 14 marks
Complete = 15 marks



- (b) (1) Name the **DRAW** commands that are used to create the objects shown below

15 x 1 mark each = 15 marks

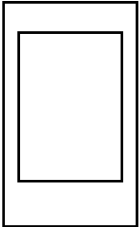
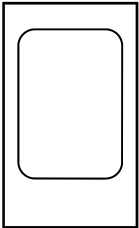
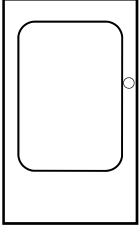
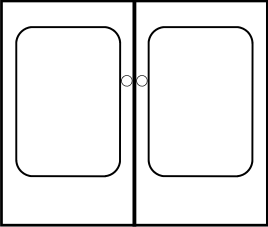
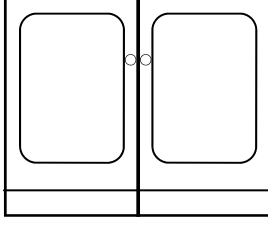
		AutoCAD		
Line	Rectangle	Text	Circle	Ellipse
Polygon	Arc	Donut	Point	Polyline

- (b) (2) Name the **MODIFY** commands that are used to change the object on the left to the object(s) on the right.

Stretch	Copy	Offset	Scale	Rotate

(c) FIVE steps used to draw a locker unit using a CAD package are shown in the table. Identify the **FIVE** CAD commands used as the sketch progresses through each stage.

5 x 3 marks each = 15 marks

	Drawing	CAD Command.
1.		RECTANGLE / LINE
2.		FILLET
3.		CIRCLE
4.		MIRROR
5.		LINE

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	Marks Awarded
Section 1 Q1	
Section 1 Q2	
Section 2 Q1	
Section 2 Q2	
Section 2 Q3	
Section 2 Q4	
Section 2 Q5	
Total	



Coimisiún na Scrúduithe Stáit

Marcanna Breise as ucht freagairt trí Ghaeilge

Léiríonn an tábla thíos an méid marcanna breise ar chóir a bhronnadh ar iarrthóirí a ghnóthaíonn thar 75% d'iomlán na marcanna.

N.B. Ba chóir marcanna de réir an ghnáthráta a bhronnadh ar iarrthóirí nach ngnóthaíonn thar 75% d'iomlán na marcanna. Ba chóir freisin an marc bónais sin a shlánú síos.

Tábla U

Bain úsáid as an tábla seo i gcás na hábhair a leanas:

Graphics & Construction Studies

Iomlán: 240 Gnathráta: 5%

Bain úsáid as an ngnáthráta i gcás marcanna suas go 180. Thar an marc sin, féach an tábla thíos.

Bunmharc	Marc Bónais
181 - 186	8
187 - 193	7
194 - 200	6
201 - 206	5
207 - 213	4

Bunmharc	Marc Bónais
214 - 220	3
221 - 226	2
227 - 233	1
234 - 240	0