Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Applied 2011

Marking Scheme

Graphics and Construction Studies

Common Level

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Applied, 2011

Vocational Specialism
Graphics and Construction Studies
(240 marks)

Sample solutions shown are presented as example answers.
All other valid solutions are acceptable and are marked accordingly.

Monday, 14 June, Morning, 9:30 - 11:00

General Directions

1. Write your examination number in this space:

2. 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**

3. Write your answers in the spaces provided and include sketches as appropriate.

For the Examiner only		
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 plus 4)	
Note: The mark in row 3 (or row 5 if Irish bonus is awarded) must equal the mark in the Total mark box on the script.		

For the Superintendent only

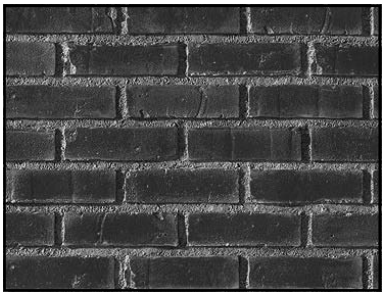
Marking Scheme

Section		Question	Mark
1	(Both)	1	
		2	
2	(Any 3)	1	
		2	
		3	
		4	
		5	
		Total	

Section 1 **COMPULSORY**
QUESTION 1 *(60 Marks)*

1. Answer <u>any TWELVE</u> of the following <u>FIFTEEN</u> short questions.

(a) Name the **THREE** different external wall finishes shown below.



2 Marks for 1st, 2 Marks for 2nd & 1 Mark for 3rd

(b) In the space provided, **sketch** the project you completed for the end of year assessment.

3 Marks
(Deduct 1 mark if not in pencil)

Name the module that related most to your project.

Module: **2 Marks**

(c) Name **TWO** different types of adhesive that are suitable for gluing wood.

Adhesive 1 **3 Marks**

Adhesive 2 **2 Marks**

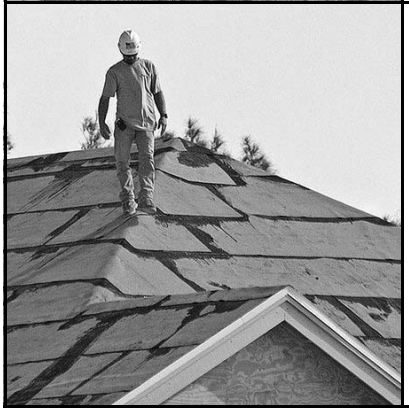
(d) Name the hand tool shown.

Name: 2 Marks

What is this tool commonly used for?

Use: 3 Marks

(e) In each of the pictures below, identify **ONE** safety hazard and describe a safety precaution that would reduce that risk.

Picture	Hazard	Precaution
	1 Mark	1 Mark
	1 Mark	1 Mark
	1 Mark	(Award marks for best 5 answers)

(f) Name **THREE** careers associated with the Construction Industry.

2 Marks

1. _____

2 Marks

2. _____

1 Mark

3. _____

(g) The diagram shows a woodwork machine.
Name this machine.

1 Mark

Name: _____

List **TWO** specific safety precautions to be observed when using this machine.

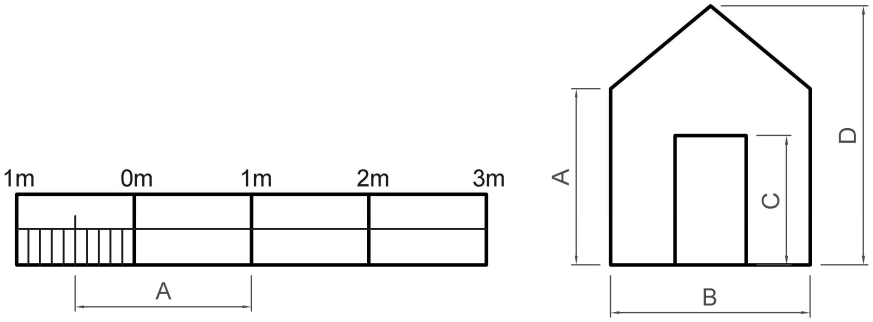
2 Marks

1. _____

2 Marks

2. _____

(h) Using the scale provided, measure and fill in the dimensions B, C and D.
(A has already been completed for you.)



2 Marks **2 Marks** **1 Mark**

A 1.5 Metres **B** 1.7 Metres **C** 1.1 Metres **D** 2.2 Metres

(i) Calculate the fuse rating for a 600 watt power drill which is connected to a 220 volt mains supply.

1 Mark

$$\text{Fuse rating} = \frac{600 \text{ Watts}}{220 \text{ Volts}} = 2.727 \approx 3 \text{ Amp Fuse}$$

1 Mark **1 Mark** **2 Marks**

(j) Name the electrical component shown, which can be found in most houses.

Name: 3 Marks

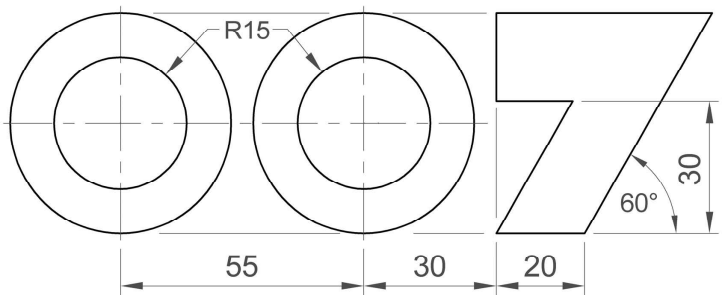
Give a reason for having such a component in a house.

Reason: 2 Marks

(k) Explain the term **Passive** as it relates to the design and construction of houses.

5 Marks

(l) Complete the "James Bond" logo below, using the measurements given on the right.



1 Mark

2 Marks

2 Marks

(m) Explain the **Analysis** stage in a Design Process.

5 Marks

(n) Name the device shown.

Name: 3 Marks

Explain how you would safely remove this device from a computer, in order to avoid losing data or files.

2 Marks

(o) Name any **THREE** of the fittings shown below and give an example of where each one might be used.

Any 5 correct x 1 Mark each

Name:

Use:

Name:

Use:

Name:

Use:

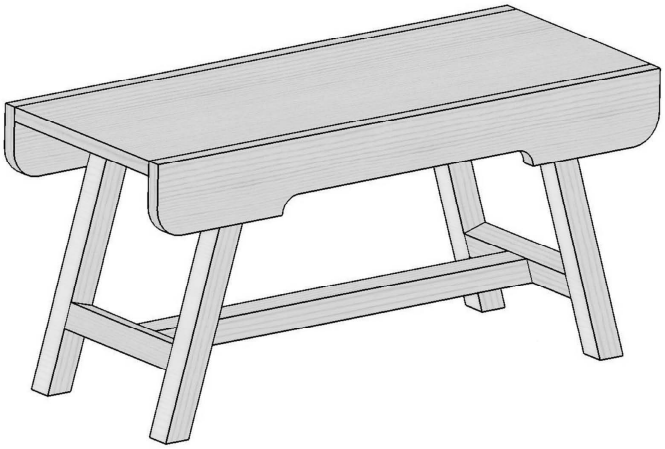
Name:

Use:

Section 1 COMPULSORY
QUESTION 2 *(45 Marks)*

2. Graphic Communication

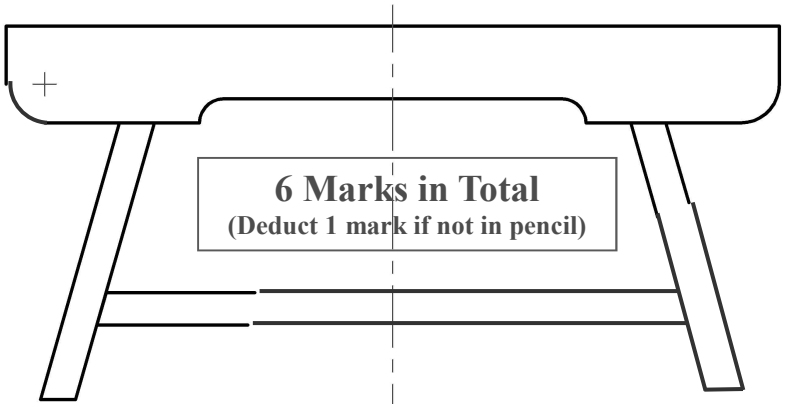
(a) The graphic on the right shows a pictorial view of a Workbench.



(1) Complete the Elevation, Plan and End View of the Workbench on the drawing below.

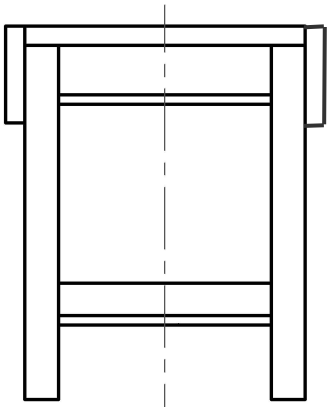
(Hidden detail need not be shown.)

(2) Apply appropriate colour or shading to the **Plan** view, to represent wood grain.

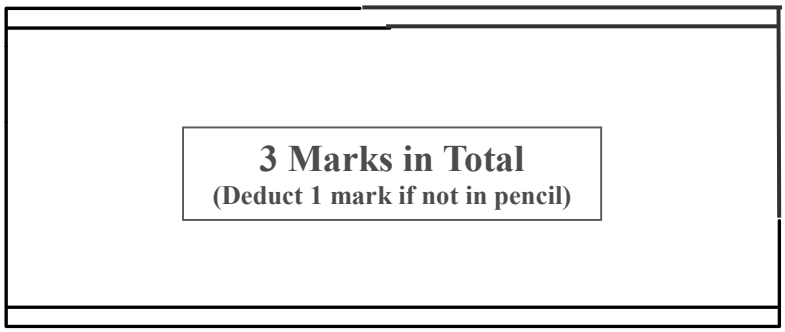


6 Marks in Total
(Deduct 1 mark if not in pencil)

Elevation



End View

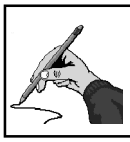


3 Marks in Total
(Deduct 1 mark if not in pencil)

Plan

3 Marks in Total
(Deduct 1 mark if not in pencil)

3 Marks for Colour/Shading



USE A COMPASS AND PENCIL ONLY

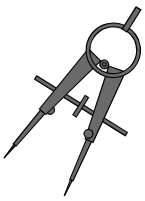
15

(b) The picture shows a rugby ball in the shape of an ellipse. This shape is also commonly used in the construction industry.

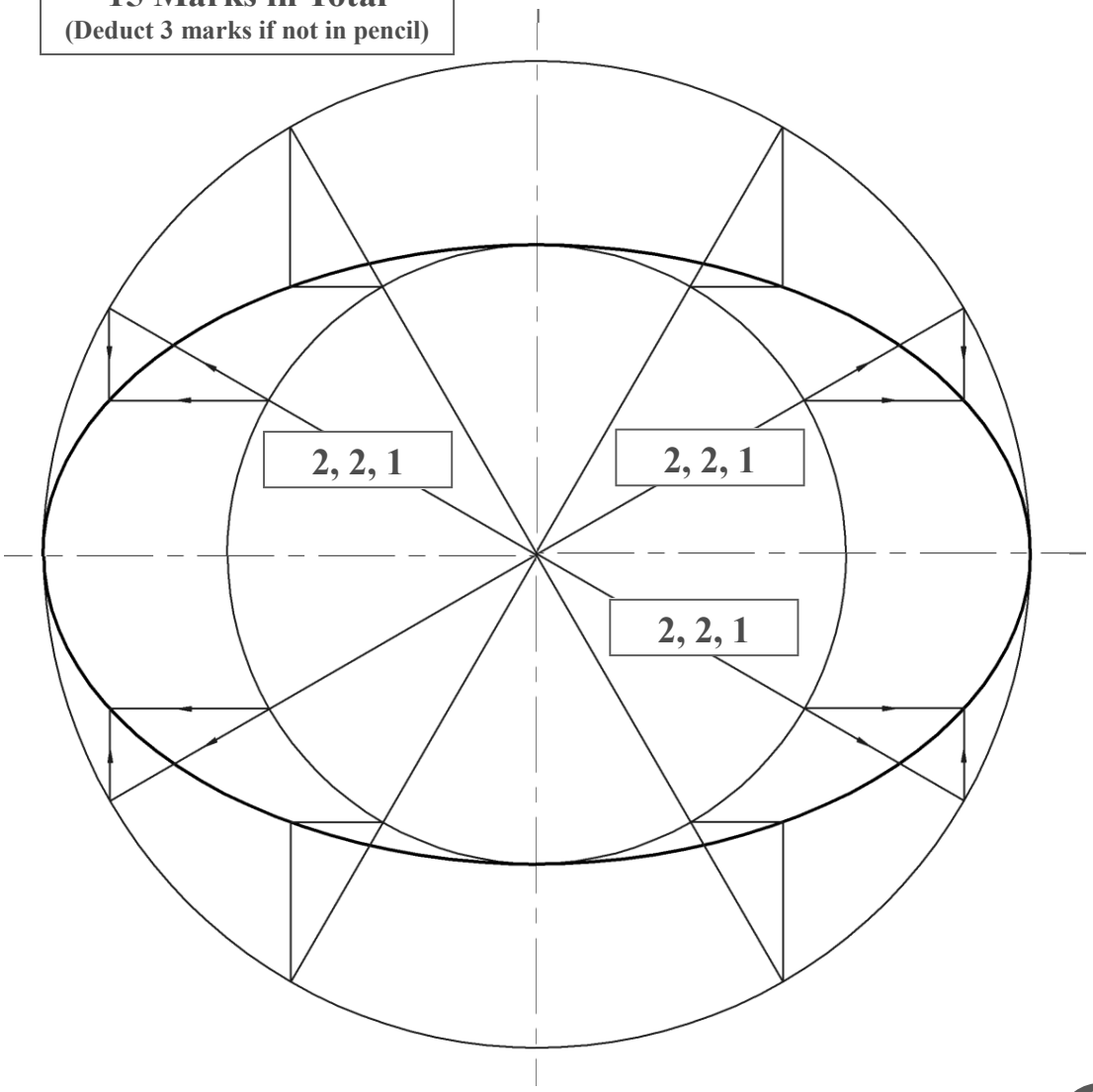
On the drawing below, one quarter of an ellipse is drawn.

Complete the ellipse.

USE A COMPASS AND PENCIL ONLY

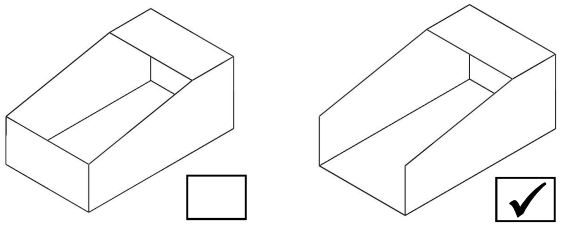


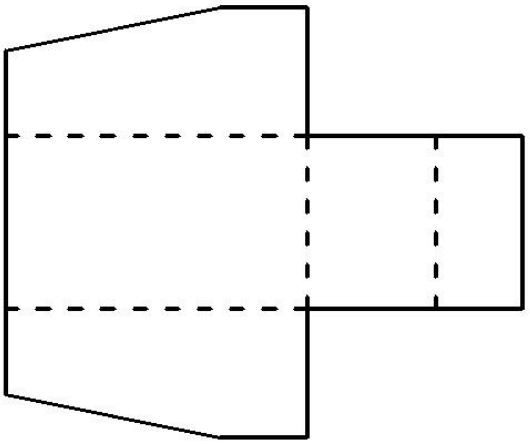
15 Marks in Total
(Deduct 3 marks if not in pencil)

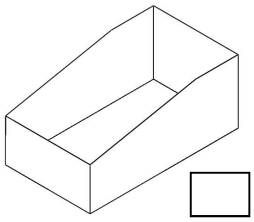


15

(c) (1) Indicate using a tick which drawing below matches the development on the right.

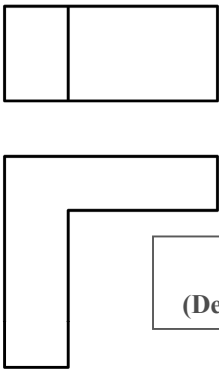


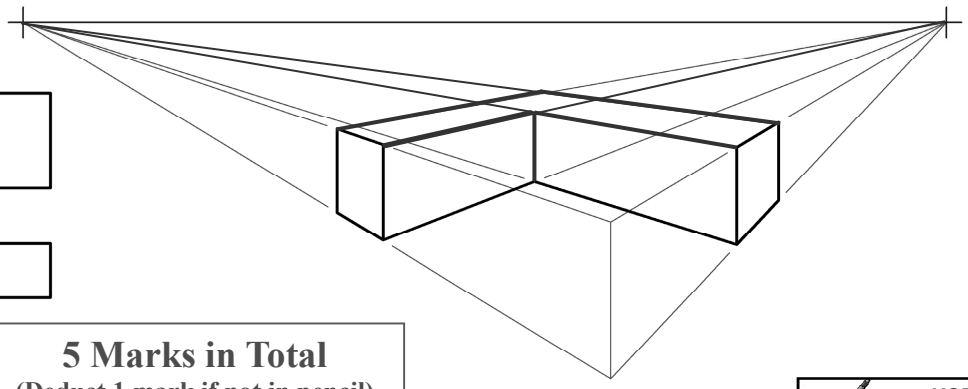




4 Marks

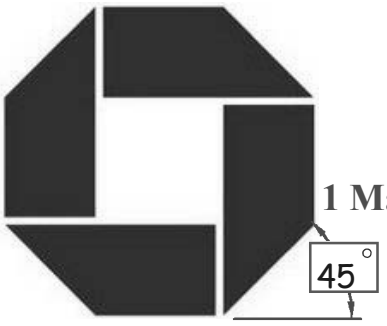
(c) (2) Complete the perspective drawing of the object, shown in plan and elevation on the left below.





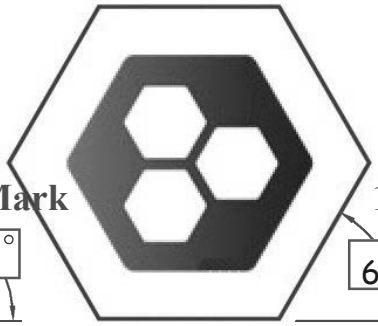
5 Marks in Total
(Deduct 1 mark if not in pencil)

(c) (3) Identify the outer polygons in each of the logos below and fill in the correct base angle in each case.



1 Mark

1 Mark



1 Mark

Section 2 *(135 Marks)*

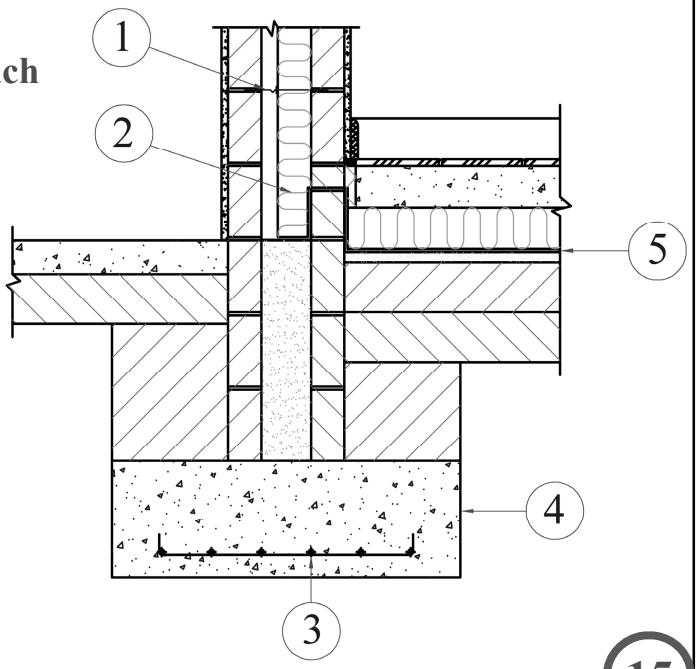
Answer <u>any THREE</u> Questions from this section.

1. Construction

(a) The drawing shows a section though a strip foundation of an external wall of a house. The internal floor and external footpath are also shown.

Identify the **FIVE** labelled components.

1. Any 5 correct x 3 Marks each
2. _____
3. _____
4. _____
5. _____



15

(b) (1) Name the device shown in the picture.

Name: 4 Marks

(2) What room in a house would you install this device in?

Room: 5 Marks

(3) Explain why it is necessary to have such a device installed in this location.

Reason: 5 Marks

14

(c) External doors can be made from different materials.

Identify the main material used in each of the doors below and evaluate them under the given headings.

Name: **4 Marks**

Name: **4 Marks**

1 Mark	**Maintenance**	**1 Mark**
1 Mark	**Durability**	**1 Mark**
1 Mark	**Impact on the Environment**	**1 Mark**
1 Mark	**Cost (€)**	**1 Mark**

16

2. Building Services

(a) (1) Shown below are **FOUR** items used by plumbers.
Name the items shown and state what each one is used for.

Name: 2 Marks

Use: 1 Mark

Name: 2 Marks

Use: 1 Mark

Name: 2 Marks

Use: 1 Mark

Name: 2 Marks

Use: 1 Mark

(a) (2) The plumbing fitting shown on the right has PVC and rubber parts.

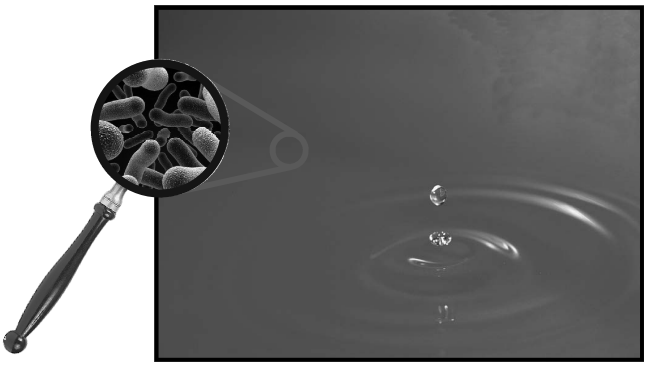
Explain the function of the rubber part.

Function: 3 Marks

15

(b) (1) Drinking water from a tap can become contaminated.

Identify **FOUR** sources of water contamination.



1: 2 Marks

2: 2 Marks

3: 2 Marks

4: 2 Marks

(2) Explain how water, being supplied to the home, is made safe for drinking.

6 Marks

14

(c) The **TWO** items shown are used to conserve energy in the home.
Name each item and describe how it can be used to conserve energy.

Name: 4 Marks

Conserves energy by: 4 Marks

.

Name: 4 Marks

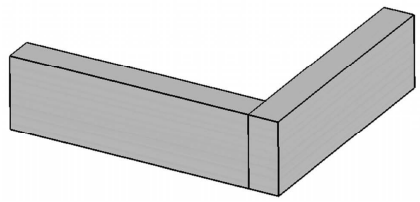
Conserves energy by: 4 Marks

16

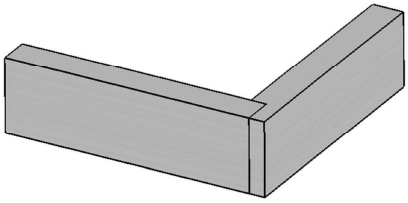
3. Woodcraft

(a) **SIX** different woodcraft joints are shown below.
Name any **FOUR** of the joints.

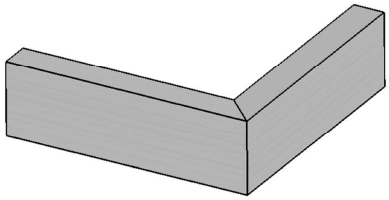
Any 4 Correct x 4 Marks each



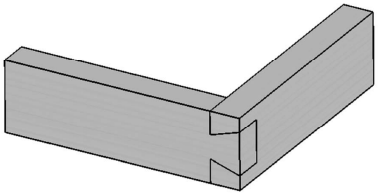
Name: _____



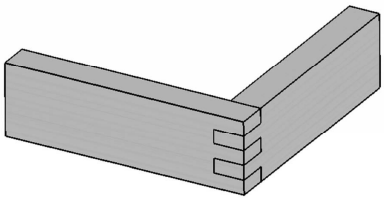
Name: _____



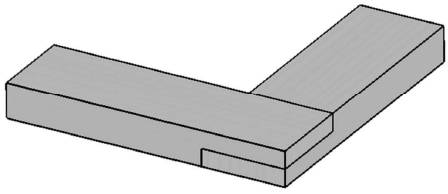
Name: _____



Name: _____



Name: _____



Name: _____

16

(b) A picture of an outdoor wooden chair is shown.

(1) Name a suitable wood for this chair.

5 Marks

_____

(2) Name a suitable treatment/finish that could be applied to the wooden chair.

5 Marks

_____

(3) Describe a suitable method of applying this treatment/finish to the chair.

4 Marks

_____

_____

14

(c) The diagram shows a power tool.

(1) Name this tool.

Name: _____ **2 Marks**

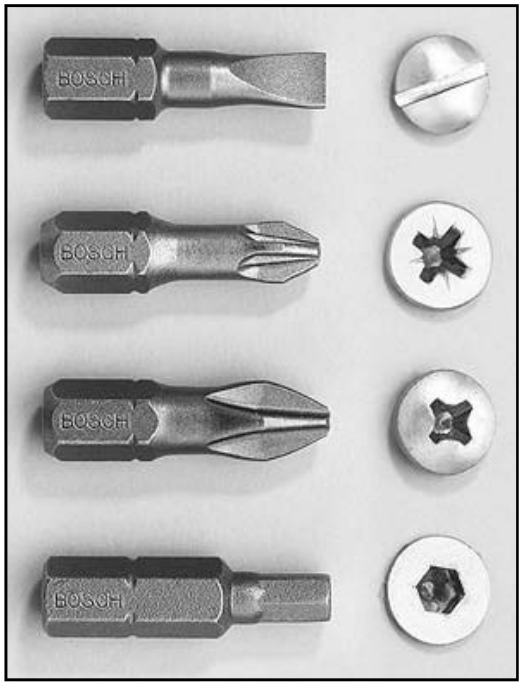
(2) Briefly describe what you would use this tool for.

Use: _____ **2 Marks**

_____

_____

(c) (3) Name the screwdriver heads shown.



A **2 Marks**

B **2 Marks**

C **2 Marks**

D **2 Marks**

(c) (4) In the space below, make a neat freehand **sketch** of a hand screwdriver.

3 Marks
(Deduct 1 mark if not in pencil)

15

4. Design and Manufacture of Educational Toys

(a) (1) Identify the **THREE** different mechanisms that can be seen in the toys below.

3 Marks

3 Marks

3 Marks

(2) In the space below, make a neat freehand **sketch** of another mechanism that could be used to generate secondary movement in a toy.

6 Marks
(Deduct 2 marks if not in pencil)

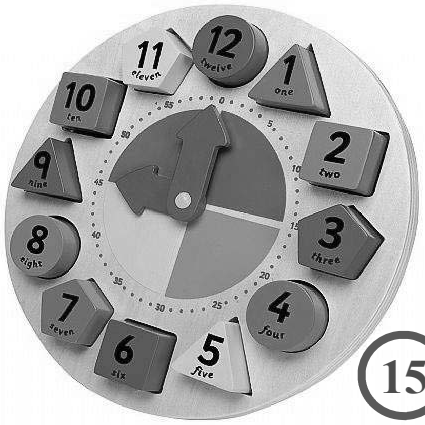
15

(b) List **THREE** educational features of this toy.

1. 5 Marks

2. 5 Marks

3. 5 Marks



15

(c) A children's jigsaw is shown on the right.

(1) Name a suitable saw for cutting out the curves.

3 Marks

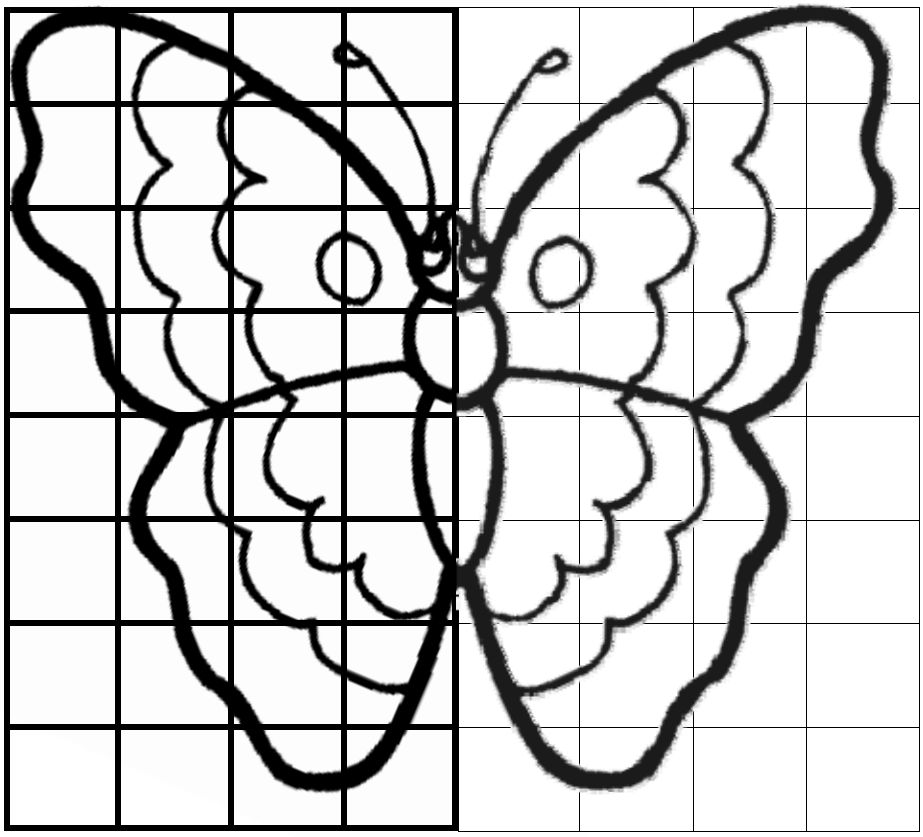
Saw: _____

(2) Why is accuracy important when cutting the curved lines?

Reason: 3 Marks _____

_____

(3) On the grid provided, draw the mirror image to complete the other half of butterfly.



USE A PENCIL ONLY

9 Marks

(Deduct 2 marks if not in pencil)

15

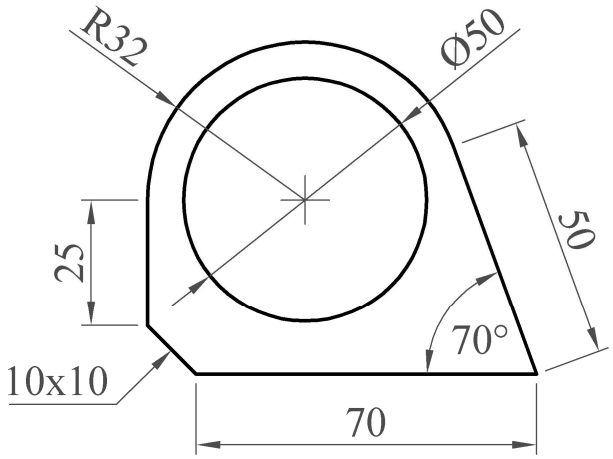
5. Computer Aided Design

(a) The graphic on the right shows a tape measure.

In the drawing below, the body of the tape measure is dimensioned using a variety of CAD dimension types.

In the list on the right below, write down the value of each of the dimension types.
(The first one has been completed for you).

12



Linear Dimension (Horizontal)	70	
Linear Dimension (Vertical)	25	2 Marks
Aligned Dimension	50	2 Marks
Angular Dimension	70°	2 Marks
Diameter Dimension	50	2 Marks
Radius Dimension	32	2 Marks
Leader Dimension	10x10	2 Marks

(b) (1) List **THREE** career opportunities associated with Computer Aided Design.

Career 1 _____ 3 Marks

Career 2 _____ 3 Marks

Career 3 _____ 3 Marks

(2) CDs or DVDs are often used by people working in the CAD industry to backup important files. Name **TWO** other backup devices and give **ONE** advantage of each.

Device 1 _____ 2 Marks

Advantage _____ 2 Marks

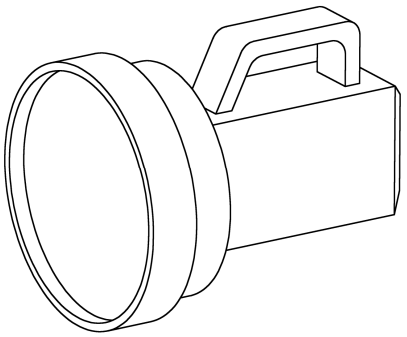
Device 2 _____ 2 Marks

Advantage _____ 2 Marks

17

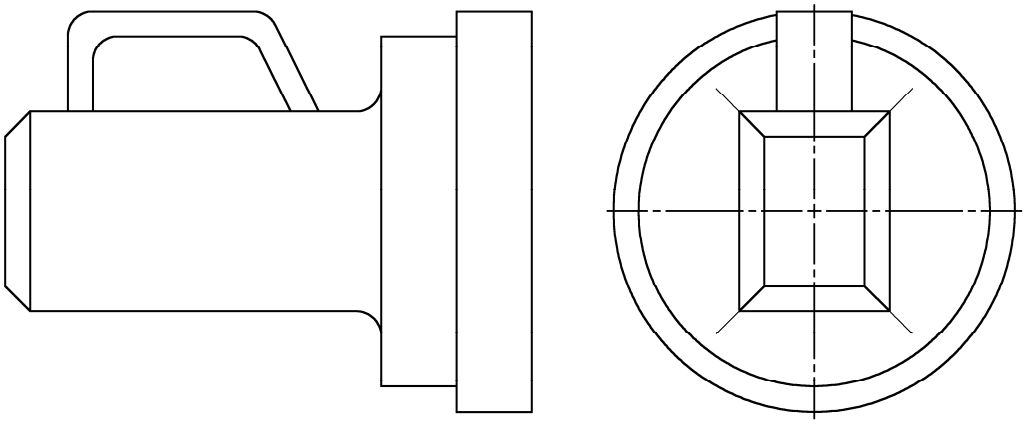
(c) (1) Name a CAD package that you have used while studying Graphics and Construction Studies.

Package: **6 Marks**



(2) The graphic on the right shows a 3D view of a hand held Flash Light.
The drawing below shows the elevation and end view of the Flash Light.

List **FIVE** CAD commands/tools/features that would be used to produce the drawing and briefly explain what each command/tool/feature does.



	Command/Tool/Feature	What it does
1	**1 Mark**	**1 Mark**
2	**1 Mark**	**1 Mark**
3	**1 Mark**	**1 Mark**
4	**1 Mark**	**1 Mark**
5	**1 Mark**	**1 Mark**