



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Applied - 2009

**Vocational Specialism -
 Graphics and Construction Studies
 (240 marks)**

**Tuesday, June 9, 2009
 Morning, 9.30 am - 11.00 am**

For the Superintendent only

<p>Centre Stamp</p>

General Directions

1. Write your examination number in this space:

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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.

Section 1

**COMPULSORY
QUESTION 1**

(60 Marks)

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

(a) Explain what is involved in each of the following stages of a Design Process.

1. Investigation/Research: _____

2. Evaluation: _____

(b) Name a **shaping tool** that you used during this course.

Name: _____

In the space provided draw a freehand sketch of the tool.



(c) Explain what is meant by the term '**Sustainable Energy**'.

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





(e) Describe **ONE** practical skill that you learned during this course.

(f) Name **TWO preservatives** that can be applied to an outdoor woodwork project.

1. _____

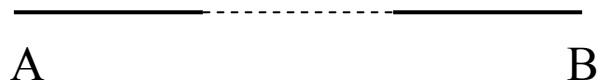
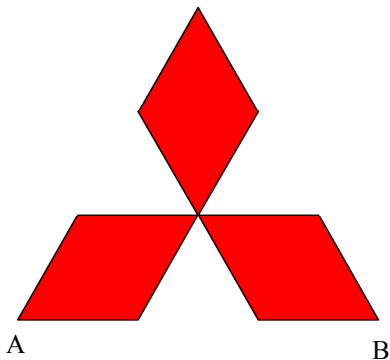
2. _____

(g) Convert the following dimensions to millimetres.

3.5 cm = _____ mm.

3.5 m = _____ mm.

(h) The diagram shown in red below is based on an equilateral triangle. Draw the logo in the space provided given the base AB.



(i) Name the electrical item shown.

Name: _____

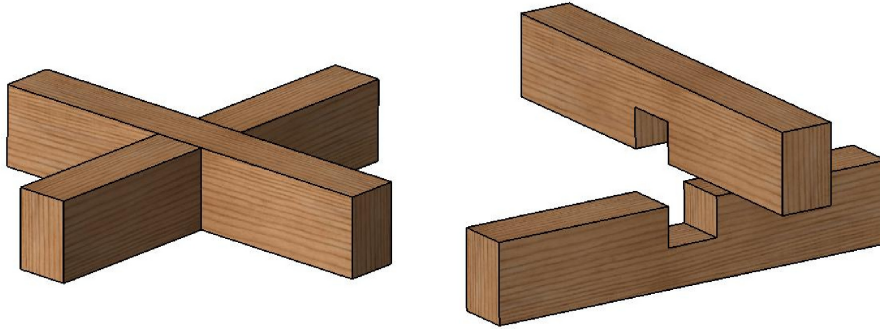
What is the safety reason for using this item on a building site?

Reason: _____



(j) The diagram shows an assembled view and an exploded view of a woodwork joint.

Name this joint and describe where it could be used in a project.



Name: _____

Use: _____

(k) The diagram shows an example of a manufactured board.

What is the name of this board?

Name: _____

Name **TWO** other types of manufactured board.

1. _____

2. _____



(l) This wooden toy is made from beech.

List **TWO** reasons why beech is a suitable wood for use in the toy.

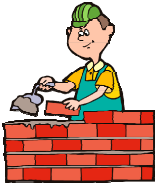


1. _____

2. _____



(m) The pictures below show people working in various building trades.

Name each person's trade and briefly describe their job on a building site.

Picture	Trade	Job Description
	<p>_____</p>	<p>_____</p> <p>_____</p>
	<p>_____</p>	<p>_____</p> <p>_____</p>
	<p>_____</p>	<p>_____</p> <p>_____</p>

(n) What do the letters C.A.D. stand for in regard to Graphics and Communication?

C. _____

A. _____

D. _____



(o) Two types of upper floor construction are shown below.
Name each floor type and give **TWO** advantages in each case.



Name: _____

Name: _____

Advantage 1: _____

Advantage 1: _____

Advantage 2: _____

Advantage 2: _____

Section 1

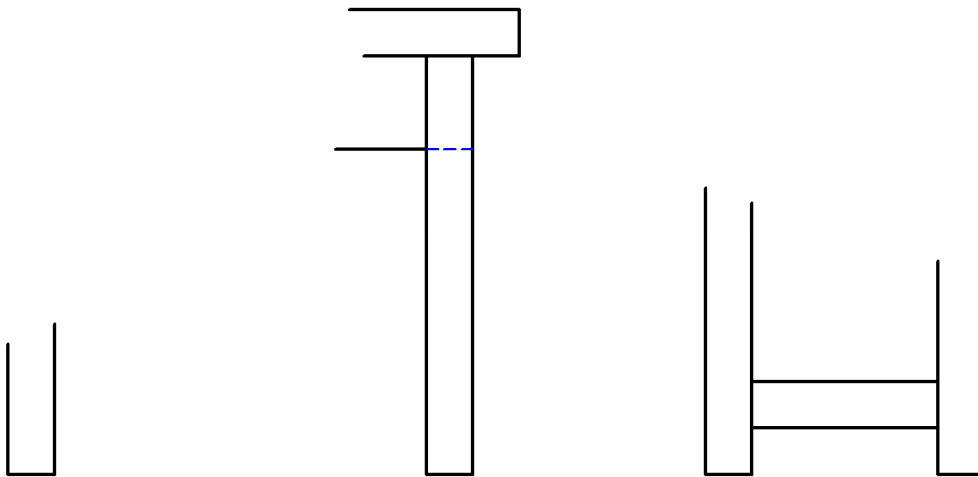
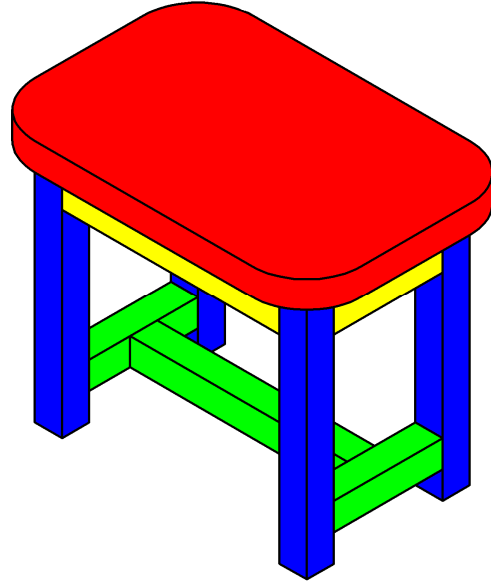
COMPULSORY QUESTION 2

(45 Marks)

2. Graphic Communication

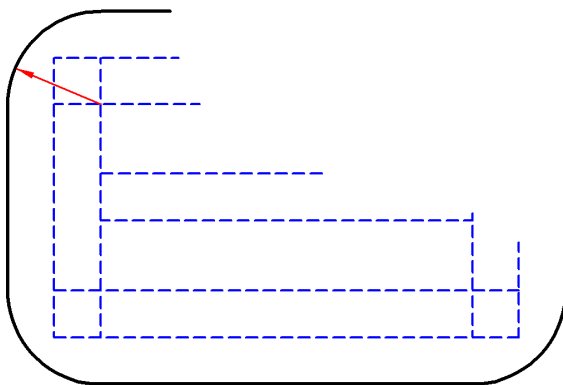
The graphic on the right shows a pictorial view of a stool.

- (a) Complete the Elevation, Plan and End View of the stool on the drawing below.
- (b) Apply appropriate colour or shading to the finished drawing.



Elevation

End View

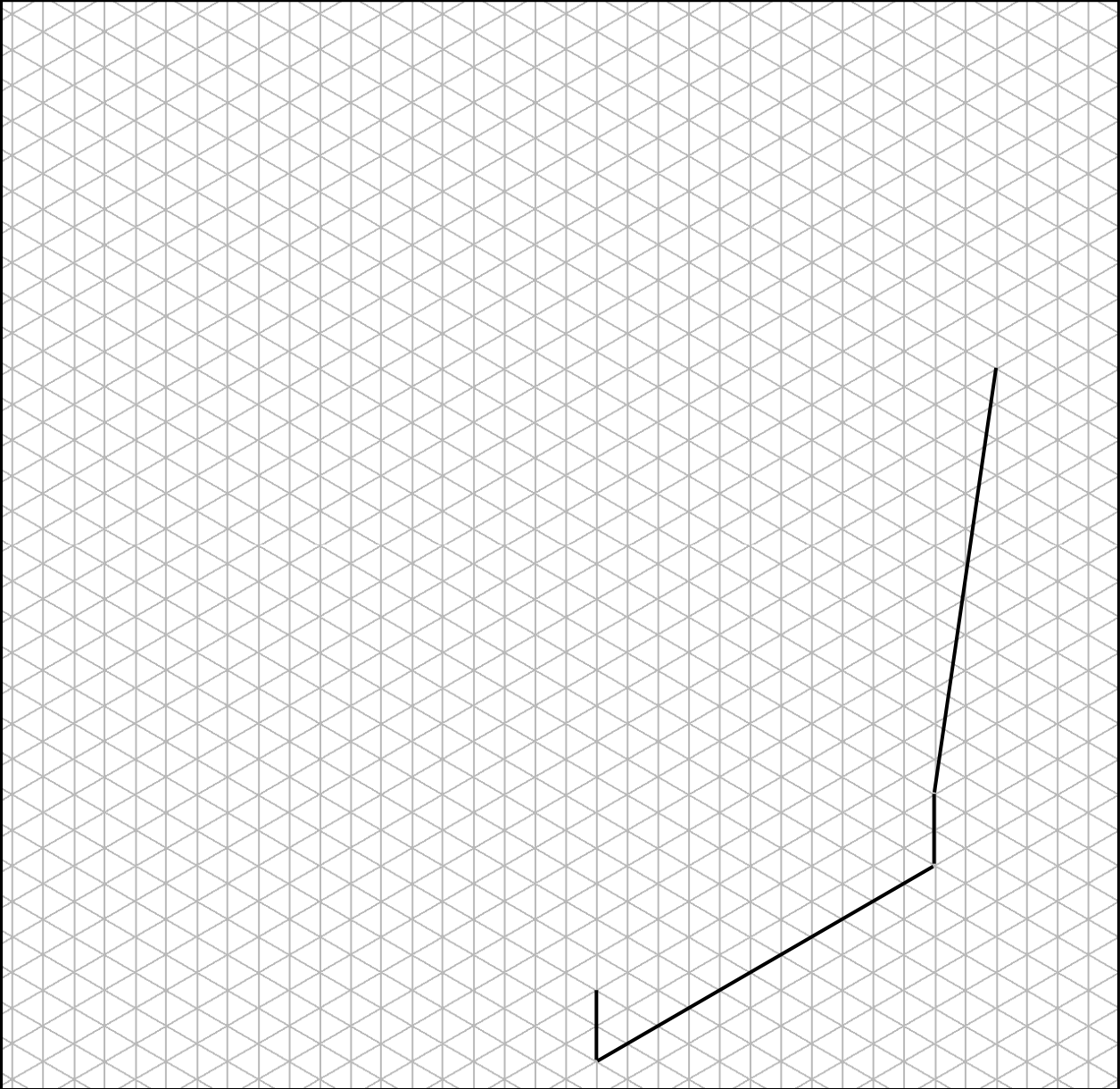


Plan



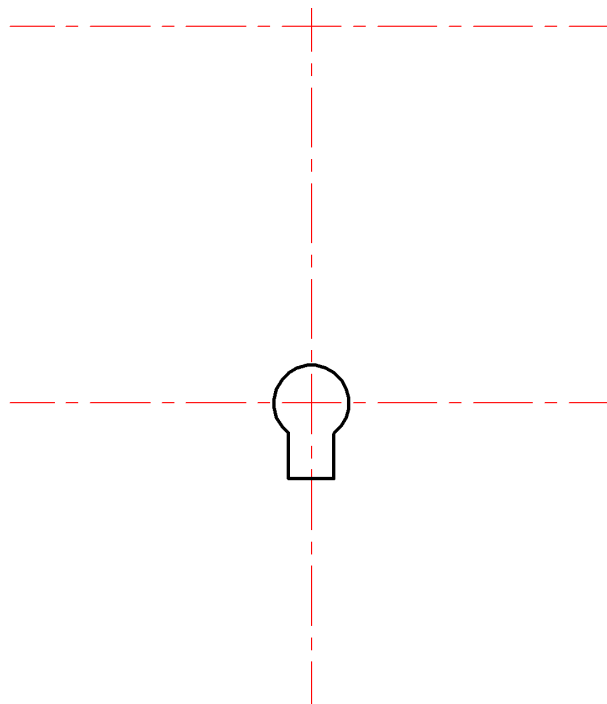
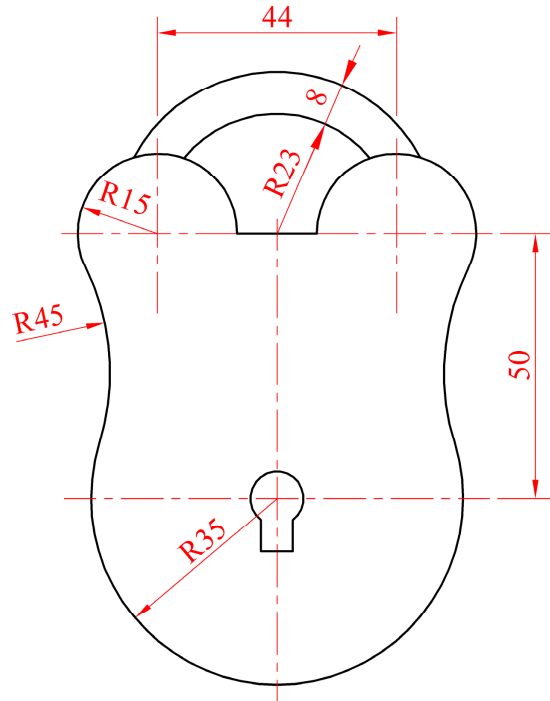
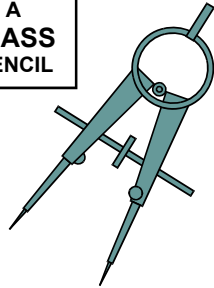
(b) The picture shows a portable DVD player.

On the grid below draw a well proportioned isometric sketch of the DVD player with the screen in the open position as shown.



- (c) The drawing on the right shows a padlock. Using the given dimensions, complete the drawing of the padlock below.

USE A
COMPASS
AND PENCIL



Section 2

(135 Marks)

Answer ANY THREE Questions from this section.

1. Construction

- (a) Before development can begin on a building site, Planning Permission must be obtained. Briefly explain the difference between Outline Planning Permission and Full Planning Permission.

Outline Planning Permission: _____

Full Planning Permission: _____

- (b) Shown is a diagram of an external wall of a timber framed house.

Identify any **FIVE** of the nine Components shown.

1. _____

2. _____

3. _____

4. _____

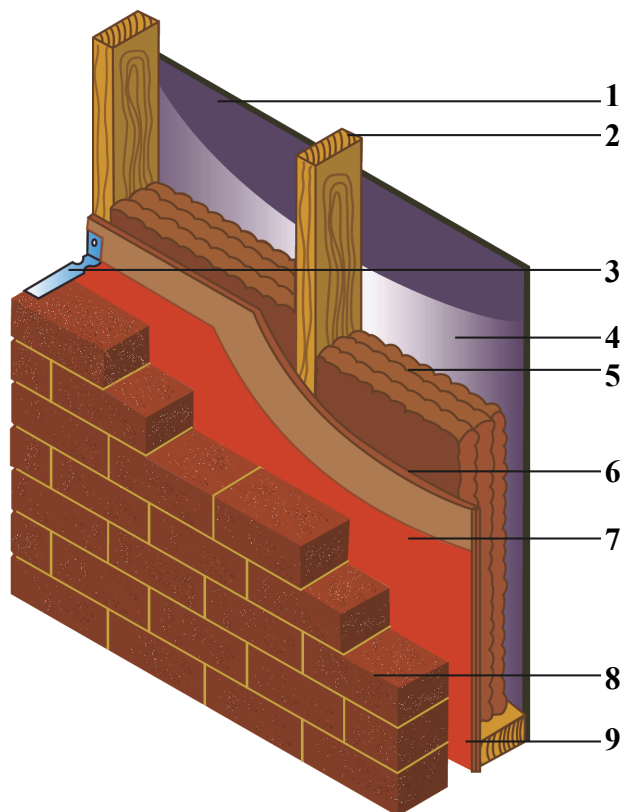
5. _____

6. _____

7. _____

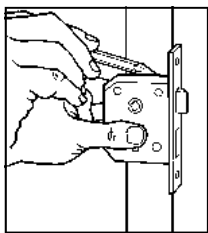
8. _____

9. _____



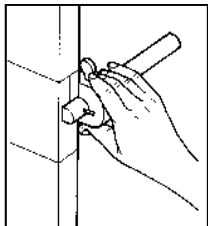
- (c) There are 6 typical steps involved in fitting a door lock. The first step is completed below.
- (1) Explain what is happening in the diagrams in steps two, three and four below.
- (2) In the boxes provided sketch stages five and six to match the given descriptions.

1.

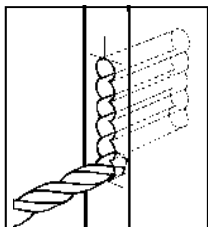


Using a pencil, mark out the size and position of the lock on the edge of the door.

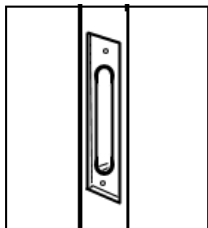
2.



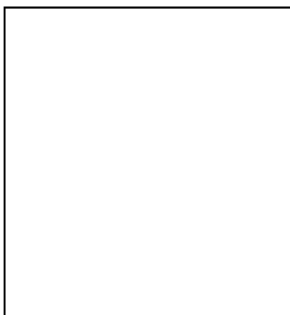
3.



4.

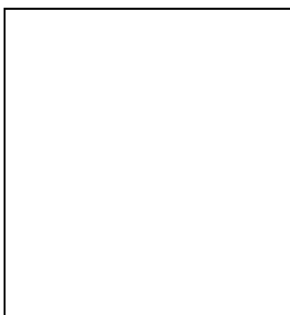


5.



Mark out the centre points and drill the holes for both the handle and the key.

6.



Complete the fixing of both the lock and handle.



2. Building Services

- (a) (1) Shown below are FOUR components used in plumbing systems.
Name each component and briefly state what each one is used for.



Name: _____

Use: _____



Name: _____

Use: _____



Name: _____

Use: _____



Name: _____

Use: _____

- (a) (2) Name **TWO** materials that are used in the manufacture of pipes.

1. _____

2. _____

- (b) (1) Shown is a list of energy sources used to generate electricity.
Using a tick, identify whether the source is renewable or non renewable.

ENERGY SOURCE	RENEWABLE	NON RENEWABLE
Oil		
Gas		
Wind		
Wood		
Coal		

- (b) (2) Name **TWO** ways in which electricity may be conserved in the home.

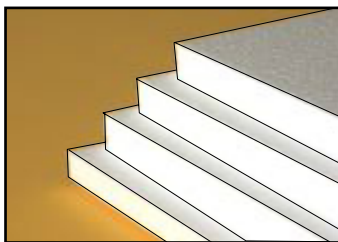
1. _____
2. _____

- (c) (1) Name the **TWO** types of insulation shown below and suggest a location in the home where they could be used.



Name: _____

Location: _____



Name: _____

Location: _____

- (c) (2) Briefly outline **TWO** ways of making a new house more energy efficient at the design stage.

1. _____

2. _____

3. Woodcraft

- (a) Shown are a number of bits commonly used for drilling different materials.
Name each of the drill bits and suggest a material they would be suitable for drilling.



Name: _____

Material: _____



Name: _____

Material: _____



Name: _____

Material: _____



Name: _____

Material: _____

- (b) Identify **THREE** possible accidents which could occur in a woodcraft workshop, and list **THREE** precautions that could be taken to help prevent them.

Possible Accidents:

1. _____

2. _____

3. _____



Precautions:

1. _____

2. _____

3. _____

(c) The diagram shows a bookcase storage unit.

(1) Name a suitable material that could be used in the sides and shelves of this unit.

Material: _____



(2) Briefly describe a method of joining the shelves to the side of the bookcase.

(3) In the space provided below, sketch a design improvement to make the bookcase more attractive.



4. Design and Manufacture of Educational Toys

- (a) Two similar toys are shown below. **One** is made from **plastic** and **one** is made from **wood**.



	Materials and the Environment	
	Manufacture	
	Safety	
	Cost	
	Educational Value	

(b) The diagram shows a toy insect with a mechanism.

(1) Suggest a hand tool used to shape the body of the insect.

Hand Tool: _____



(2) Name the mechanism used and describe how it works.

(c) The diagram shows a toy train.

(1) What is the main **educational value** of the toy?



(2) Explain how you would transfer the numbers from a printed sheet of paper to the wood.

(3) Name a **saw** that could be used to cut out the numbers.

Name: _____

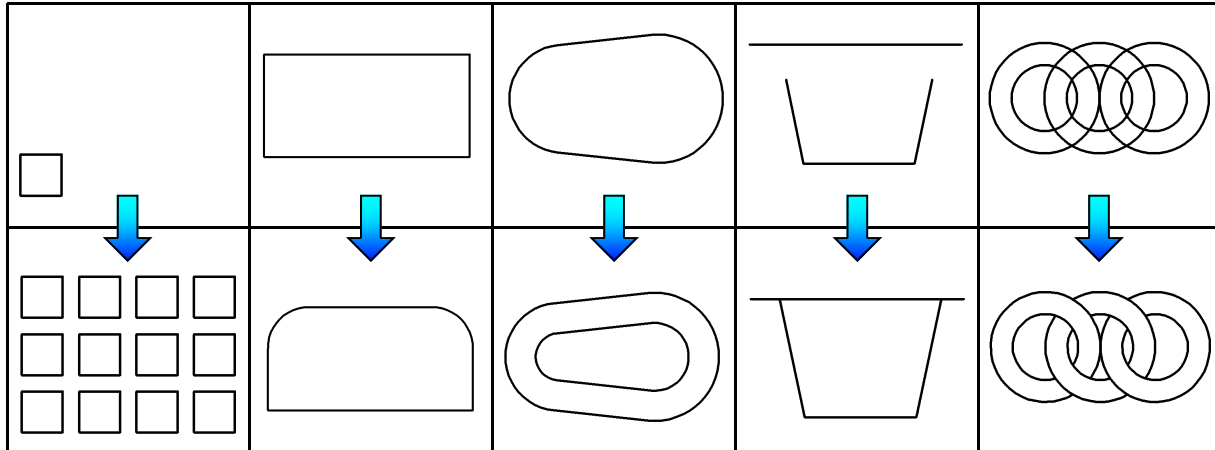
(4) Sketch an **alternative design idea** for each carriage instead of using numbers?




(You need only show 2 carriages in your sketch)

5. Computer Aided Design

(a) Identify each of the CAD commands/tools required to produce the modified drawing from the original drawing below.



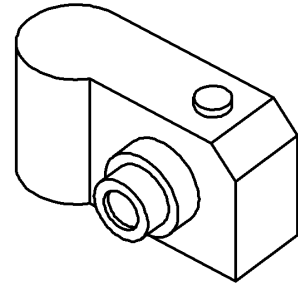
(b) Three data storage devices are shown below. Identify each device, give a typical use and give **ONE** advantage **or** disadvantage of each device.

			
Name	_____	_____	_____
Typical Use	_____ _____ _____	_____ _____ _____	_____ _____ _____
Advantage or Disadvantage	_____ _____ _____	_____ _____ _____	_____ _____ _____

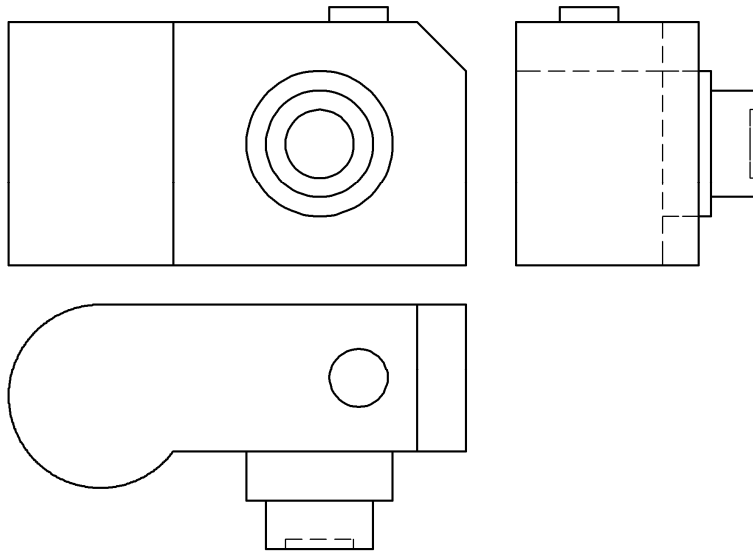
- (c) (1) Name a CAD package that you have used while studying Graphics and Construction Studies.

Package: _____

- (2) The graphic on the right shows a 3D view of digital camera. The drawing below shows the plan, elevation and end view of the camera.



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



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

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