



Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Applied - 2007

Vocational Specialism - Graphics & Construction Studies (240 marks)

Tuesday, 12 June 2007
Morning, 9.30 am - 11.00 am

For the Superintendent only

Centre Stamp
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

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.

Section 1

COMPULSORY QUESTION 1

(60 Marks)

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

(a) List **TWO** materials you used in your end of year practical project.

1. _____

2.5 marks each

2. _____

(b) Sketch in the space provided one marking out tool that you used during this course.

5 marks



(c) Give **TWO** examples where scale drawings are used.

2.5 marks each

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

1



2



2.5 marks each

1 Fret saw

2 Pillar drill

(e) List **TWO** methods of applying a surface finish to a piece of furniture.

2.5 marks each

1. _____

2. _____

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

2.5 marks each

1. _____

2. _____

(g) List **TWO** advantages of timber framed house construction.

2.5 marks each

Advantage 1: _____

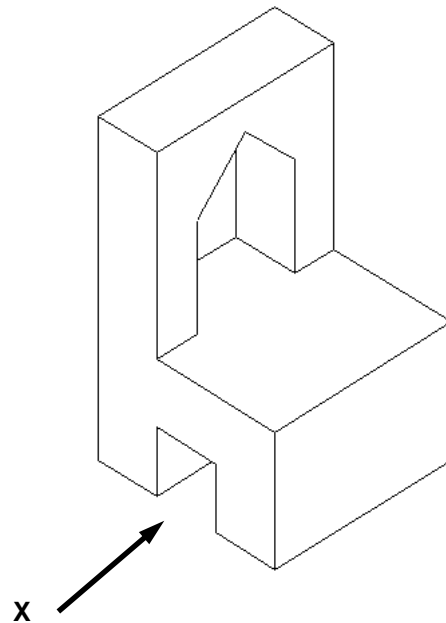
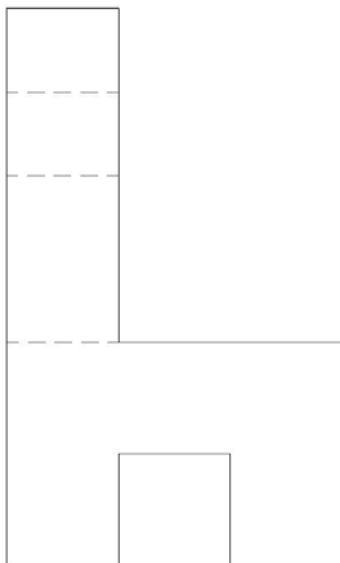
Advantage 2: _____

(h) Sketch an elevation of the chair when viewed from arrow "X".

5 marks

Outline = 3 marks

Any two broken lines = 1 mark each



(i) List **TWO** safety items that should be worn on a building site?

1. **2.5 marks each**

2. _____

(j) In the space provided, sketch one method of jointing wood that you learned during this course.

3 marks



Explain, briefly, this method of jointing wood.

2 marks

(k) Name **FIVE** professions associated with the construction industry:

1 mark each x 5 = 5 marks

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

(l) The following is a list of woods that grow in Ireland.
Suggest a suitable use for each wood

Wood	Use
Ash	1 mark each x 5 = 5 marks
Beech	
Scots Pine	
Douglas Fir	
Oak	

(m) (1) When purchasing building materials VAT is added to the cost.

What do the letters **VAT** stand for?

1 mark each x 3 = 3 marks

- V. _____
- A. _____
- T. _____

(m) (2) A sheet of plywood costs €32 plus 10% VAT.
Calculate the total cost of the sheet of plywood.

2 marks

Cost = 32.00
VAT = 3.20
Total = 35.20

(n) Two woodwork projects are listed below.

Suggest a suitable finish for each of the projects and give a reason for your suggestion.

1. Coffee Table

Finish **1.5 marks** _____

Reason **1 mark** _____

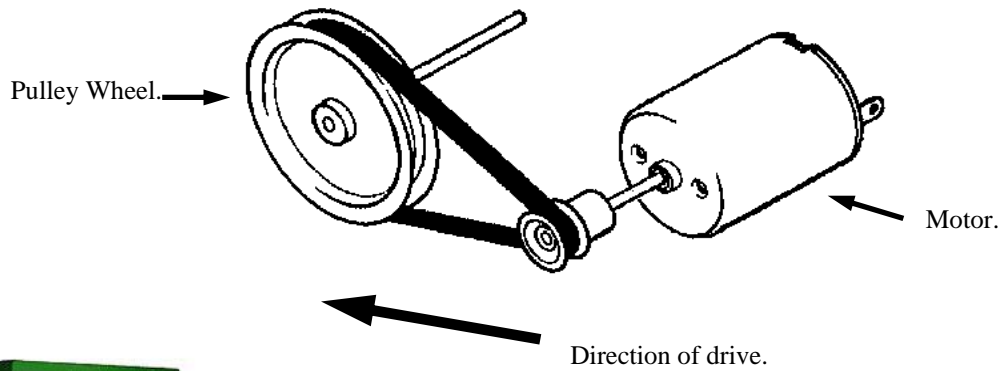
2. Exterior Hardwood Gate.

Finish **1.5 marks** _____

Reason **1 mark** _____

(o) The diagram shows a pulley system and motor used in a Pillar Drill.

Indicate using sketches how the direction of the Pulley Wheel can be reversed?



Pillar Drill

5 marks

Section 1

COMPULSORY QUESTION 2

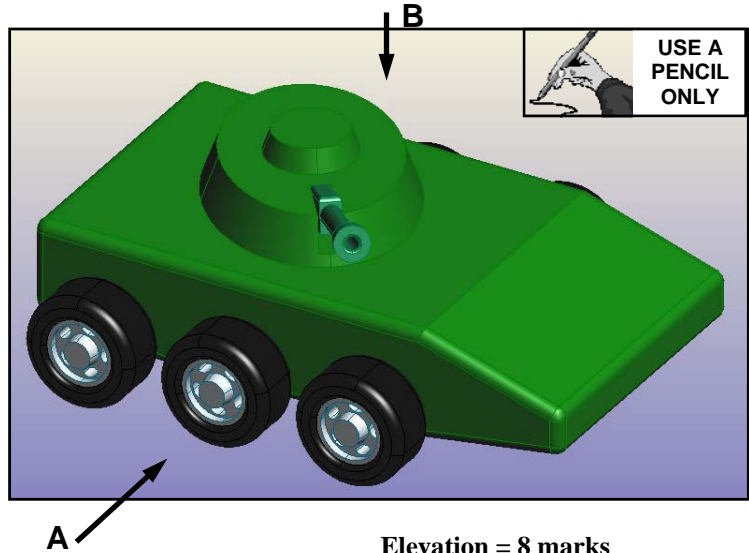
(45 Marks)

2. Graphic Communication

- (a) The figure shows a model army tank.

Draw well proportioned sketches of the following views:

- (a) (1) A front elevation looking in the direction of the arrow A.
 (a) (2) A plan looking in the direction of the arrow B.

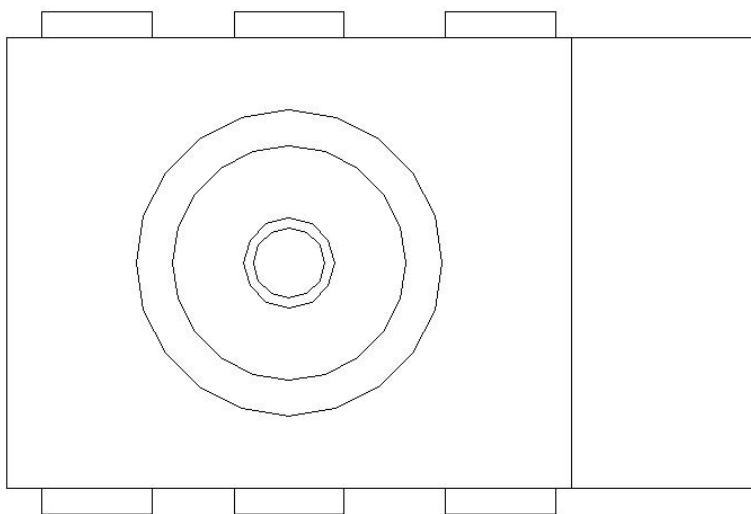
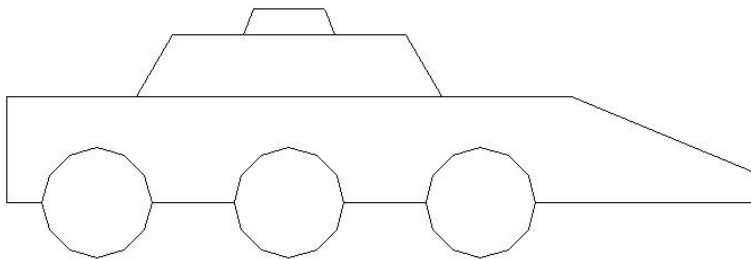


Elevation = 8 marks

Main shape = 3 marks
 Gun carousel = 2 marks
 Wheels = 3 marks

Plan = 7 marks

Main shape = 2 marks
 Gun carousel = 2 marks
 Wheels = 3 marks

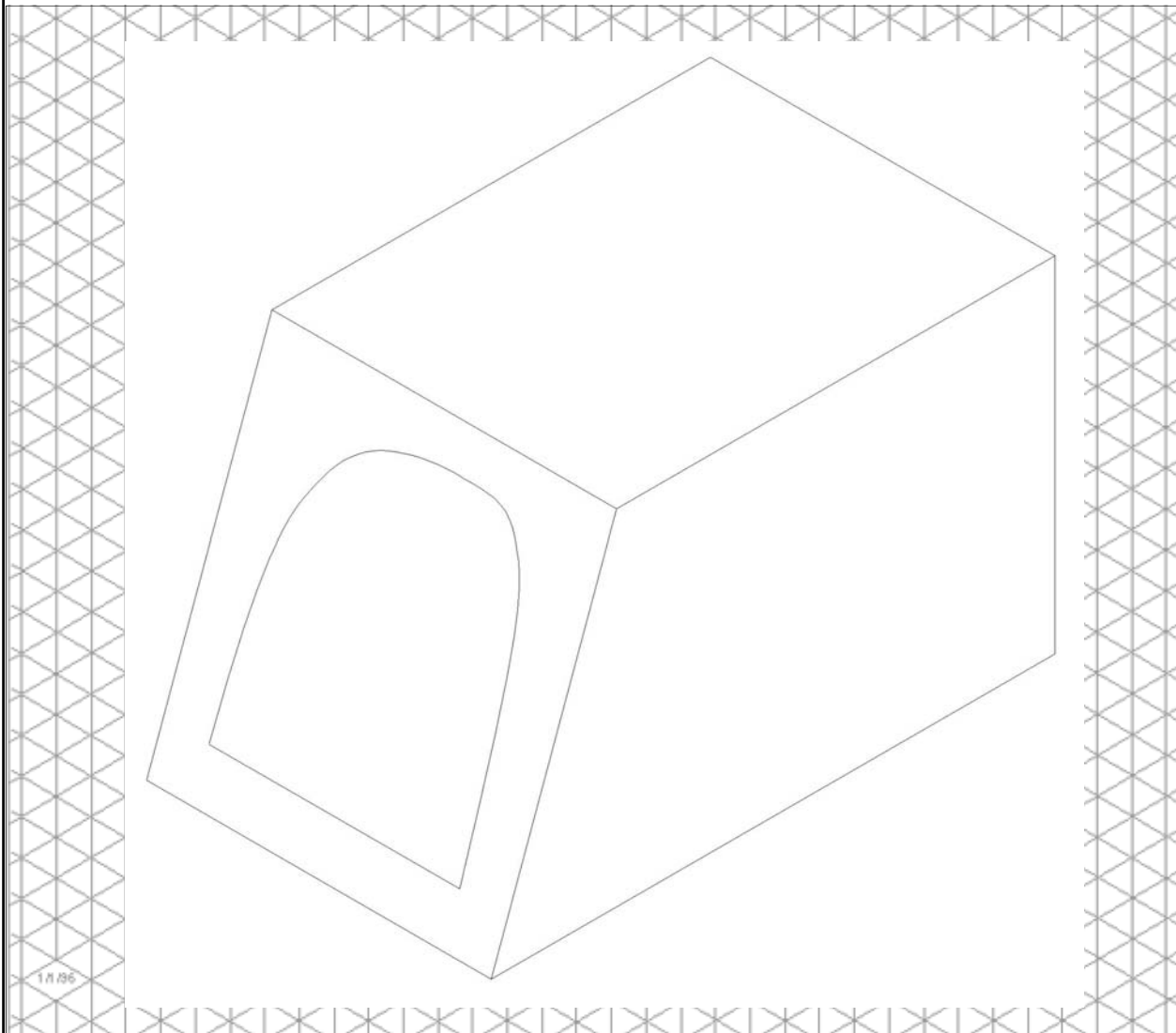


(b) The pictures show open and closed views of a CD storage box.

Draw, in the space provided a well proportioned isometric sketch of the CD storage box in the closed position



15 marks



(c) The image shows the model of a bus

Draw a well proportioned sketch of the surface development of the model bus, excluding the wheels.

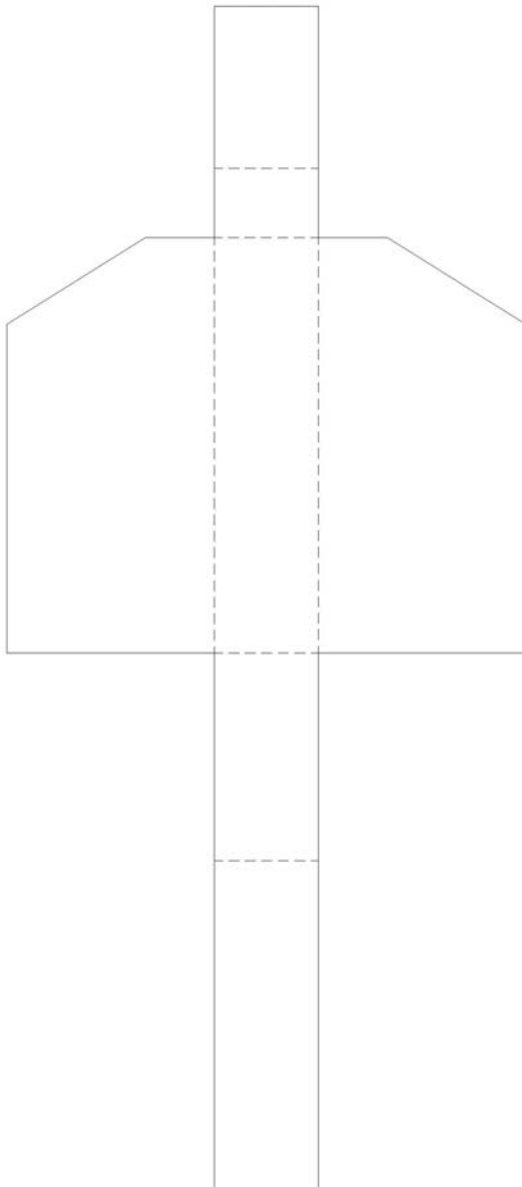
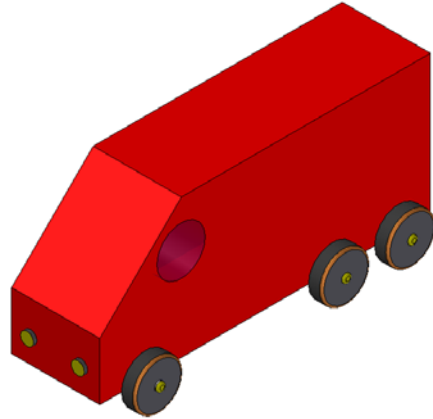


15 marks

2 sides = 8 marks

Remainder = 4 marks

Broken lines = 3 marks



Section 2

(135 Marks)

Answer ANY THREE Questions from this section.

1. Construction

(a) (1) Explain why it is necessary to control planning?

3 marks

(a) (2) List **TWO** types of planning permission.

1. 3 marks

2. 3 marks

(a) (3) List **TWO** documents required for planning permission.

1. 3 marks

2. 3 marks

(b) A vertical section through the eaves of a slated roof is shown below.

Name any **FIVE** of the parts shown.

3 marks each x 5 = 15 marks

1. RAFTER

2. SLATING BATTEN

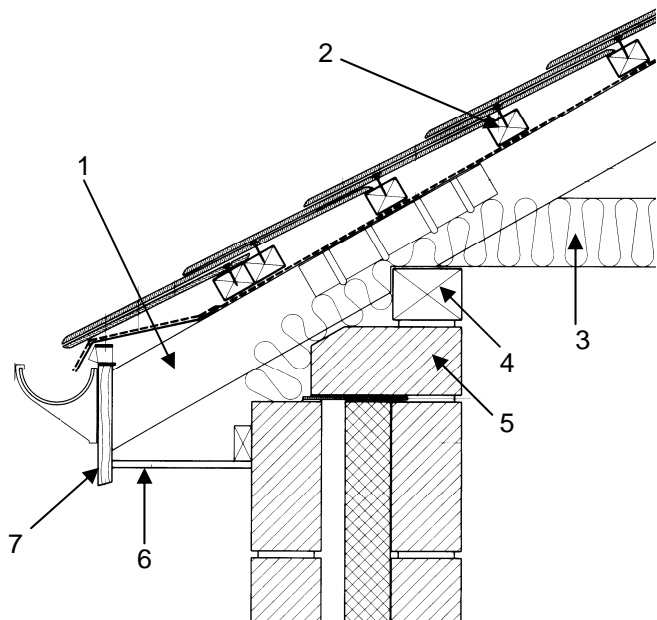
3. INSULATION

4. WALL PLATE

5. CAVITY CLOSER

6. SOFFIT

7. FASCIA



- (c) (1) Name the **THREE** types of window shown below.
Suggest a different material from which each window could be made.



2 marks

Name: _____

1 mark

Material: _____



2 marks

Name: _____

1 mark

Material: _____



2 marks

Name: _____

1 mark

Material: _____

- (c) (2) Discuss **TWO** methods that can be used in the design of new windows to make windows more energy efficient.

3 marks each x 2 = 6 marks

2. Building Services

(a) (1) A diagram of a central heating system is shown below.

Name any **FIVE** of the parts shown.

2 marks each x 5 = 10 marks

1. COLD WATER STORAGE CISTERN

2. EXPANSION / VENT PIPE

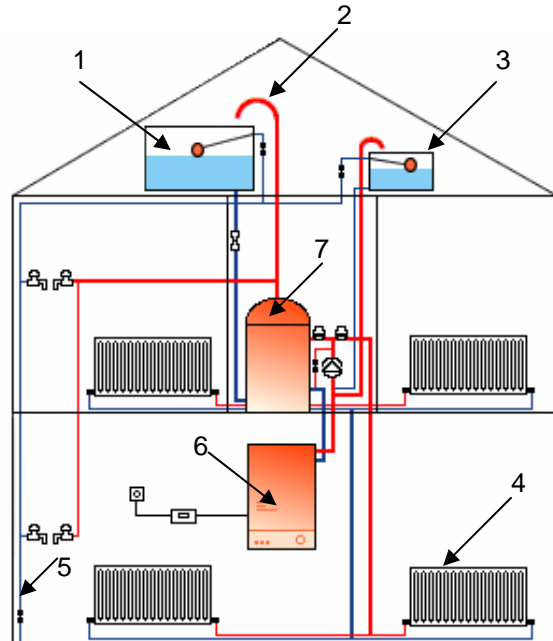
3. EXPANSION TANK

4. RADIATOR

5. RISING MAIN

6. BOILER

7. HOT WATER CYLINDER [INDIRECT]



(a) (2) Select any **THREE** of the parts identified and explain the function of each.

1.5 marks each x 3 = 4.5 marks

Neatness and accuracy = 0.5 marks

1. _____

2. _____

3. _____

(b) (1) Name **THREE** alternative energy sources used to generate electricity in Ireland.

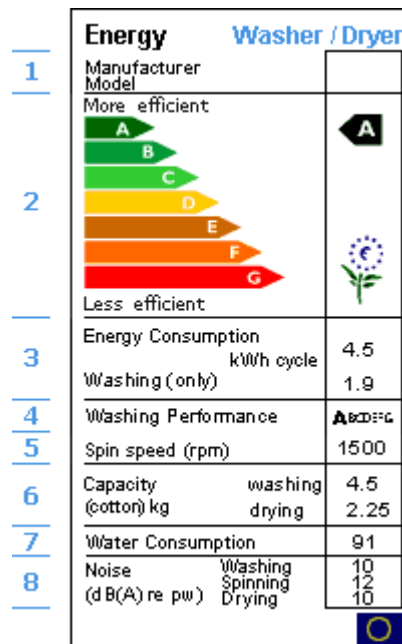
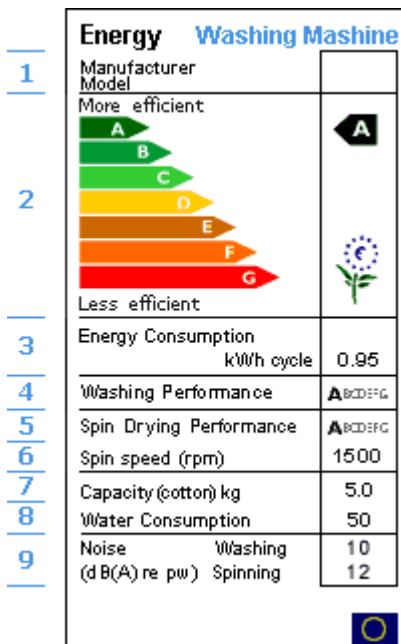
3 marks each x 3 = 9 marks

1. _____
2. _____
3. _____

(b) (2) Explain how electricity is distributed from its source to the home.

6 marks

(c) The diagram shows an appliance label for a washing machine on the left and a washer / dryer on the right.



(c) (1) What is the purpose of attaching appliance labels to electrical items?
6 marks

(c) (2) Which of the above machines is more energy efficient? Explain your answer.
Washing machine more efficient = 5 marks

Explanation = 4 marks

3. Woodcraft

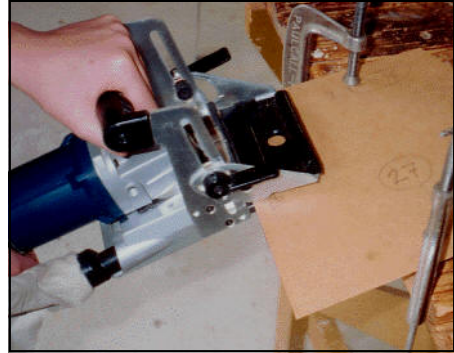
(a) A picture of a power hand tool is shown opposite.

(a) (1) Name the tool. **4 marks**

Answer _____

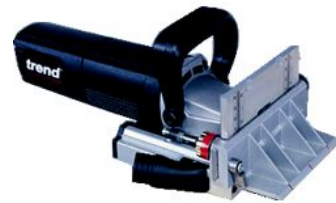
(a) (2) Explain what this tool is used for.

5 marks



(a) (3) Describe how the tool is used and the safety precautions to be observed with its use.

6 marks



(b) The diagram shows a picnic table

(b) (1) Name a suitable wood for this picnic table.

4 marks

(b) (2) Name a suitable treatment to prolong the life of the picnic table.

5 marks



(b) (3) Name **TWO** adhesives suitable for exterior use.

3 marks each x 2 = 6 marks

1. _____

2. _____

(c) The diagram shows a wooden storage chest.

(c) (1) Name a suitable wood for this storage chest.

4 marks



(c) (2) Briefly describe how you would make this project.

5 marks

(c) (3) The chest measures 1500mm long x 450mm wide x 400mm high. Prepare a cutting list of materials for the chest by completing the table below. Assume it is made from boards measuring 100mm x 20mm.

1 mark x each row = 6 marks [* discretion allowed]

Cutting List

	Quantity	Length mm	Width mm	Thickness mm
Front	4	1500	100	20
Back	4	1500	100	20
Two sides	8	410	100	20
Top	4	1500	100	20
Bottom	4	1460	100	20
Cleats	7	350*	50*	20

4. Design and Manufacture of Educational Toys

(a) Two wooden pull-along toys on wheels are shown below.



(a) (1) State **TWO** advantages of giving wooden toys to children.

2 marks each x 2 = 4 marks

(a) (2) What age group are toys similar to the ones shown suitable for?

3 marks

(a) (3) In the space below, draw a design for a pull-along toy based on an elephant.

8 marks

- (b) A pull-along toy is shown.
 (b) (1) Suggest a suitable material for this toy.

5 marks

- (b) (2) What changes would you make to the toy which would allow it to be used as a ride-on toy?

10 marks



- (c) Two educational toys are shown below.



Learning Frame



Puzzle

- (c) (1) Outline **THREE** advantages of each toy.

2 marks each x 3 = 6 marks

Frame: _____

2 marks each x 3 = 6 marks

Puzzle: _____

- (c) (2) In your opinion, which of the above toys is of most benefit to children?

1 mark

- (c) (3) Give a reason for your answer.

2 marks

5. Computer Aided Design

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

15 marks:

2 marks per line

1 mark for position

From point A

To point: @-30,-30

To point: @20,0

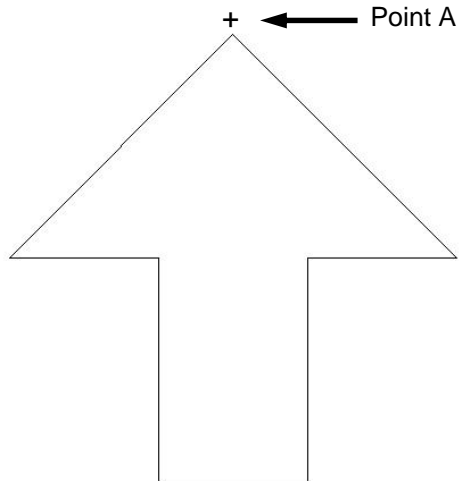
To point: @0,-30

To point: @20,0





To point: @0,30

To point: @20,0

To point: @-30,30.

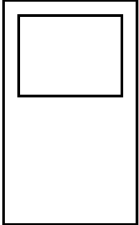
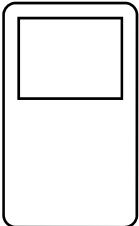
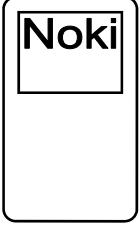
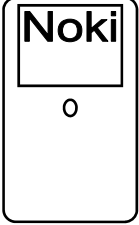
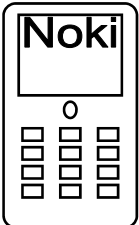


- (b) Shown below are media for the storage of computer files. Name any **THREE** and state one advantage and one disadvantage for each.

	NAME:	ADV. / DISADVANTAGE:
	3 names x 3 marks each = 9 marks CD / DVD Drive	3 advantages x 1 mark each = 3 marks 3 disadvantages x 1 mark each = 3 marks
	Floppy Disk Drive	
	Memory Stick OR USB Key	
	External Hard Drive	

- (c) Shown in the table below are FIVE steps used to sketch a mobile phone using a CAD package.
Identify the **FIVE** CAD commands used as the sketch progresses through each stage.

3 marks each x 5 = 15 marks

	Drawing	CAD Command.
1.		Line or Rectangle
2.		Fillet
3.		Text
4.		Circle or Ellipse
5.		Copy or Array

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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	