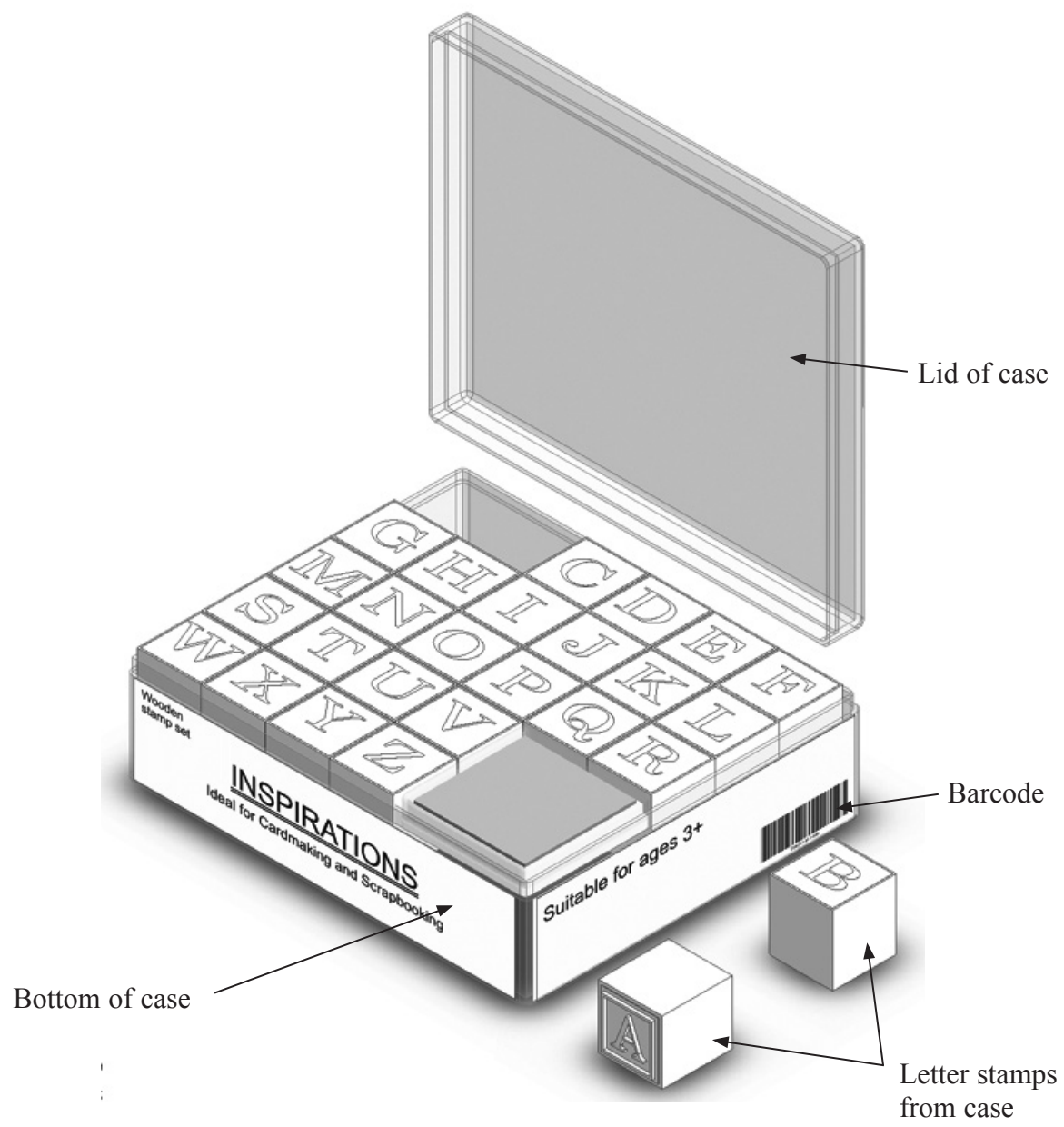




Answer ALL the questions. Write your answers in the spaces provided.

1. The drawing below shows a child's letterpress stamping set.  
The lid fits tightly onto the bottom.



Leave  
blank

(a) Two specification points for the **case** of the stamping set are that it must:

- protect the contents
- allow the retailer to easily monitor sales.

Under each of the following headings, give **one** more point that should be included in the specification for the case.

For each point, give **one** reason why it should be included.

(i) **Quality**

Point .....

.....

Reason .....

.....

.....

(2)

(ii) **Environment**

Point .....

.....

Reason .....

.....

.....

(2)

(iii) **Safety**

Point .....

.....

Reason .....

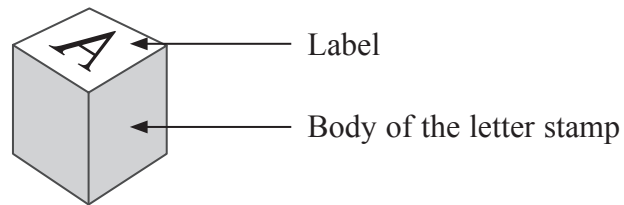
.....

.....

(2)



(b) The drawing below shows one of the letter stamps.



The body of the letter stamp is made from pine.

One reason why the body of the letter stamp is made from pine is that it is attractive.

Give **two** other reasons why pine is a suitable material from which to make the body of the letter stamp.

- 1 .....
  - .....
  - 2 .....
  - .....
- (2)**

(c) The label on the top of the letter stamp is manufactured using lithography.

Give **two** reasons why lithography is a suitable process to manufacture the label.

- 1 .....
  - .....
  - 2 .....
  - .....
- (2)**

(d) The label on the top of the letter stamp is finished by using varnishing.

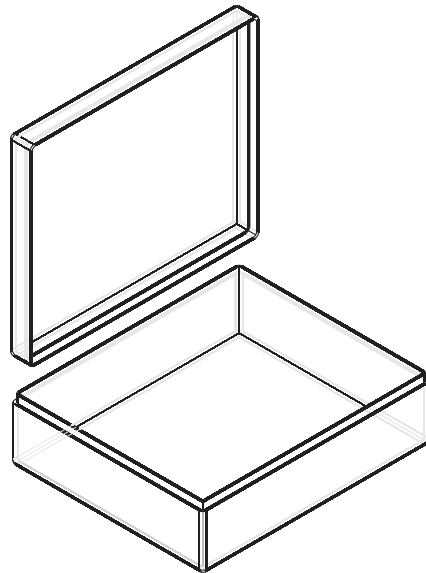
Explain **one** reason why varnishing is used for finishing this label.

- .....
  - .....
- (2)**



Leave  
blank

(e) The drawing below shows the case of the stamping set.



The case is made from acrylic.

Give **two** properties of acrylic that make it a suitable material for the case.

For each property, give **one** reason why it makes acrylic suitable.

Property 1 .....

Reason .....

.....

Property 2 .....

Reason .....

.....

(4)



Leave  
blank

(f) The manufacturer of the case uses sampling during production.

Explain **one** reason for sampling during the production of the case.

.....  
.....  
.....  
.....

(2)

(g) Two purposes of the **case** of the stamping set are to:

- protect the contents
- allow the retailer to easily monitor sales.

Explain under the following headings how the **case** of the stamping set achieves these purposes.

(i) Protect the contents.

.....  
.....  
.....  
.....

(2)

(ii) Allow the retailer to easily monitor sales.

.....  
.....  
.....  
.....

(2)

(Total 22 marks)

Q1

--	--

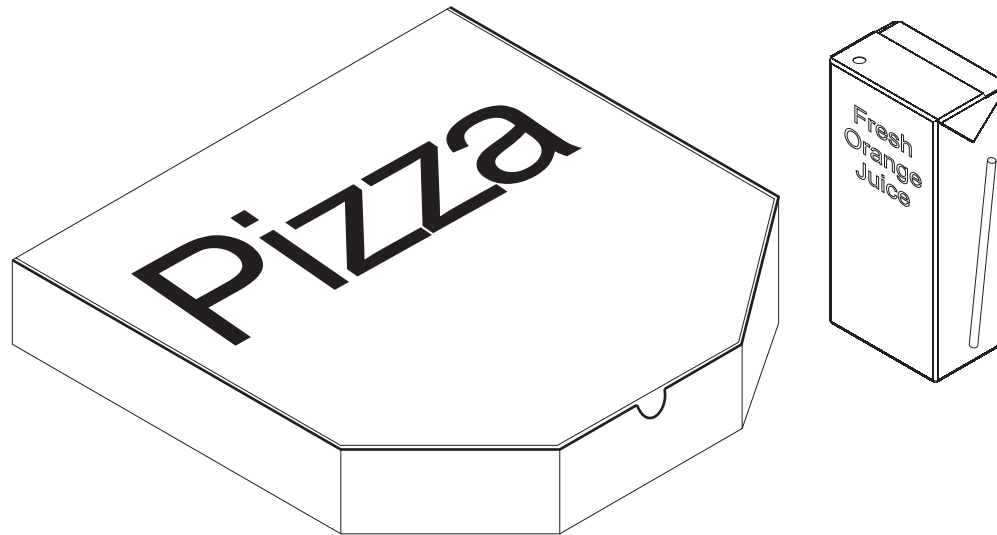


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7  
**Turn over**

2. The drawings below show the containers from a takeaway meal.



(a) The orange juice carton is made from a laminate of three different materials. Each material has a specific function.

Complete the table below with the missing material and the two missing functions.

Material	Function
Polyethylene	
	Acts as a barrier to light
Paper	

(3)





Leave  
blank

(b) The pizza box is made from corrugated card.

(i) In the space below, draw the edge of a piece of corrugated card.

(2)

(ii) State **two** properties of corrugated card.

1 .....

2 .....

(2)

(c) A cutting mat should be put under corrugated card when it is being cut with a scalpel.

Give **two** reasons for using a cutting mat.

1 .....

.....

2 .....

.....

(2)

(d) The pizza box was produced by adapting an existing commercial packaging net. One reason for adapting an existing net is that the design process is made quicker.

Give **two** more reasons for adapting existing packaging nets.

1 .....

.....

2 .....

.....

(2)



(e) One-off, batch and high volume are three different scales of production.

There are advantages for a manufacturer for each of the scales of production.

State **one** advantage to a manufacturer of each scale of production. Each advantage must be different.

One-off .....

.....

Batch .....

.....

High volume .....

.....

**(3)**

(f) Manufacturers can use Computer Integrated Manufacturing (CIM) systems.

One feature of a CIM system is CAD.

Name **two** other features of a CIM system.

1 .....

.....

2 .....

.....

**(2)**

(g) Manufacturers often use efficient lay planning.

State **two** advantages of efficient lay planning to a manufacturer.

1 .....

.....

2 .....

.....

**(2)**



Leave  
blank

(h) During the printing of colour images, quality control methods are used.

Name **two** quality control methods that might be used during the production of printed colour images.

1 .....

.....

2 .....

.....

(2)

(i) Manufacturers often use CAD to create 3D virtual models of products.

Explain **one** advantage, to a manufacturer, of using 3D virtual models instead of physical models.

.....

.....

.....

.....

(2)

Q2

(Total 22 marks)

--	--



3. East Berries Restaurant requires frames to display photographs of its dishes, such as the one shown below. The photograph frames will be placed on tables.



The specification for each photograph frame is that it must:

- display one photograph in an upright position and stand without additional support
  - allow the photograph to be removed and replaced easily with a different one
  - have space to display the photograph and the restaurant's name
  - be made using materials and processes suitable for batch production.
- (a) In the spaces opposite, use sketches and, where necessary, brief notes to show **two different** design ideas for the **photograph frame** which meet this specification.

Do **not** evaluate your designs in part (a).

Candidates are reminded that if pencil is used for diagrams/sketches that it must be dark (HB or B). Coloured pens, pencils and highlighter pens must **not** be used.

**PLEASE DO NOT WRITE OR DRAW IN THIS SPACE.**

**PLEASE USE THE SPACES OPPOSITE FOR YOUR DESIGNS.**



**Design Idea 1**

Leave  
blank

**(8)**

**Design Idea 2**

**(8)**



Leave blank

(b) Three of the original specification points are repeated below.

Evaluate how **one** of your design ideas succeeds or fails to meet each of these specification points.

Write the number of your chosen design idea (1 or 2) here .....

(i) Display one photograph in an upright position and stand without additional support.

.....  
.....  
.....  
.....

(2)

(ii) Allow the photograph to be removed and replaced easily with a different one.

.....  
.....  
.....  
.....

(2)

(iii) Be made using materials and processes suitable for batch production.

.....  
.....  
.....  
.....

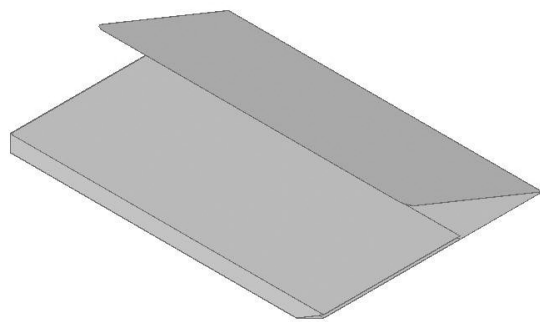
(2)

(Total 22 marks)

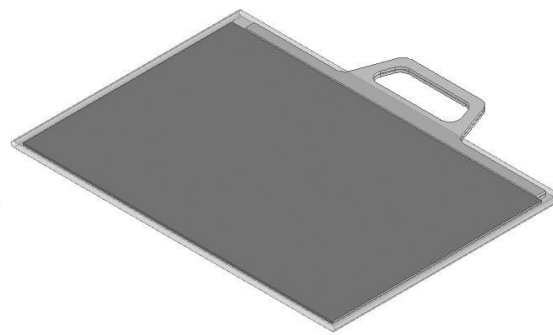
Q3



4. (a) The drawings below show two different folders that are used by students to carry their designs.



Folder made from card



Folder made from PVC

(i) State **three** properties of card.

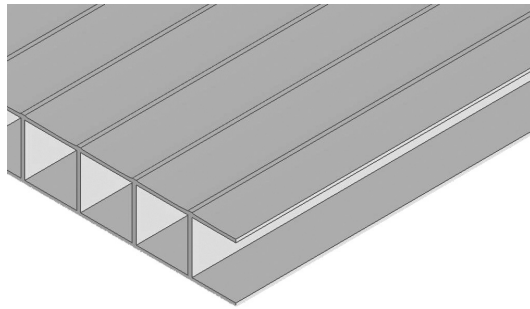
- 1 .....
  - .....
  - 2 .....
  - .....
  - 3 .....
  - .....
- (3)**

(ii) State **two** advantages of making a folder from PVC instead of card.

- 1 .....
  - .....
  - 2 .....
  - .....
- (2)**



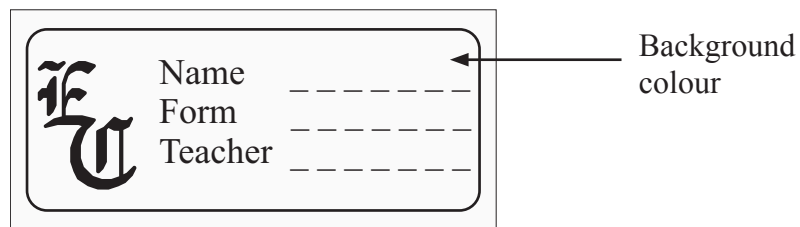
(b) The drawing below shows the edge of a plastic material that can be used to make folders.



Name the plastic material shown.

..... (1)

(c) The drawing below shows a label that could be put on the front of a folder.



Coloured paper or a colour printer could be used to provide the background colour.

Explain **one** advantage of printing onto coloured paper instead of using a colour printer to provide the background colour.

.....  
.....  
.....  
..... (2)





Leave  
blank

(d) The drawing below shows the logo from the label.



The logo was produced using a paint program.

Describe what would happen to the appearance of the logo if it was enlarged using a paint program.

.....  
.....  
.....  
.....

(2)

(e) State **one** reason why using a fine line pen would not be a suitable method for writing on the front of a plastic folder.

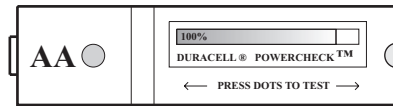
.....  
.....

(1)



(f) Modern and smart materials are used increasingly in products.

(i) The battery shown below uses a type of smart material to show how long the battery will last.



Name the type of smart material used.

..... (1)

(ii) Optical fibres have many uses.

State **one** use of an optical fibre.

.....  
..... (1)

(iii) Composite materials are often used instead of other more traditional materials.

State **one** reason why a composite material would be used instead of a more traditional material.

.....  
..... (1)

(g) The production of PVC packaging has a specific environmental risk associated with it.

Describe the specific environmental risk associated with the production of PVC.

.....  
.....  
.....  
..... (2)



Leave  
blank

(h) Many products are tested to ensure they meet British Safety Standards.

State **two** advantages for a consumer of products being tested to British Safety Standards.

1 .....

.....

2 .....

.....

(2)

(i) Email is frequently used for communication.

Explain **two disadvantages** for the consumer of using email for communication.

1 .....

.....

.....

.....

2 .....

.....

.....

.....

(4)

Q4

(Total 22 marks)

**TOTAL FOR PAPER: 88 MARKS**

**END**



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