

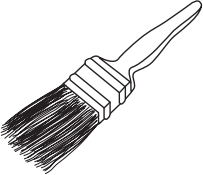
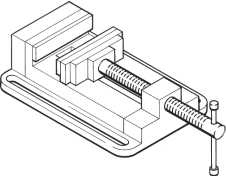
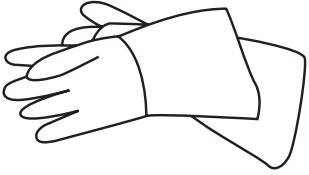
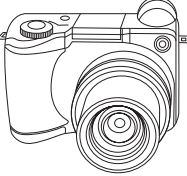
Answer ALL the questions. Write your answers in the spaces provided.

1. The table below shows some tools and equipment.

(a) Complete the table by:

- (i) naming each tool or piece of equipment
- (ii) describing its use.

The first one has been done for you.

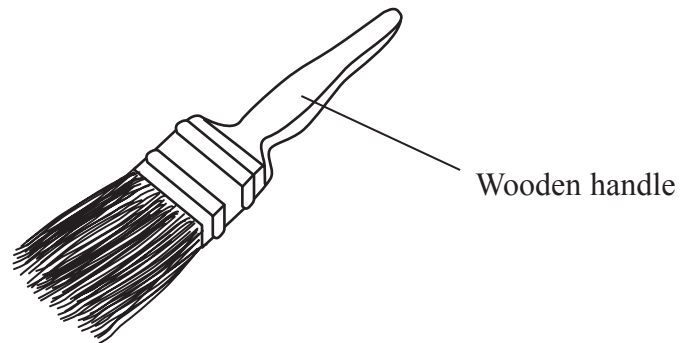
Tool/Equipment	Name	Use
	Brush	Applying varnish
		
		
		

(6)



Leave blank

(b) The drawing below shows a brush.



(i) The brush can be used to apply varnish to a wooden tabletop.

Mark with a cross (☒) **one** other finish from the list below that can be applied with a brush.

plastic dip coating polish stain etching (1)

(ii) Give **one** reason why the brush should be cleaned after use.

..... (1)

(iii) The wooden handle of the brush has a finish applied to it.

Give **two** reasons for applying a finish to the handle of the brush.

1
2 (2)

(c) The handle of the brush could be manufactured from plastic using the injection moulding process.

Injection moulding is a self-finishing process.

Give **one** reason why a self-finishing process is important in the manufacture of the brush handle.

..... (1)

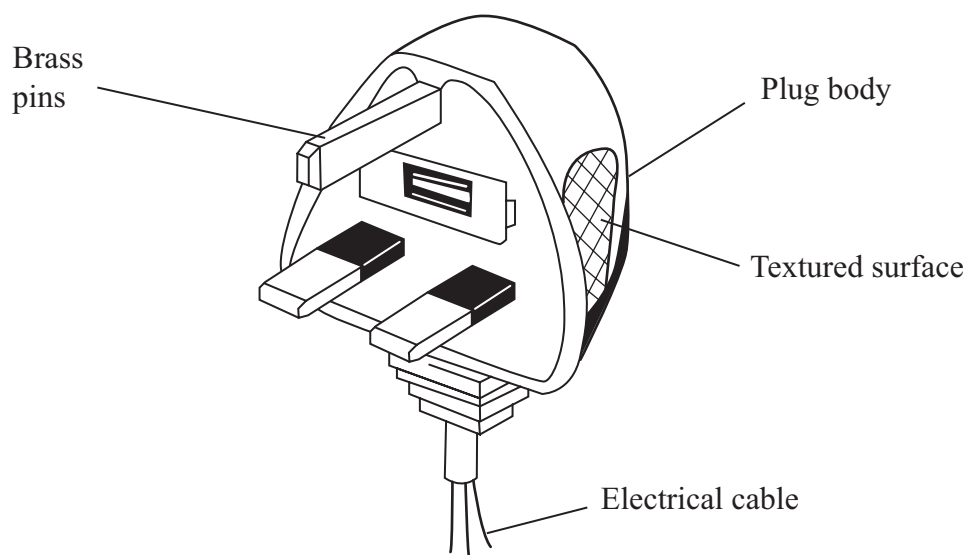
(Total 11 marks)

Q1

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2. The drawing below shows a 3-pin plug.



(a) The plug body has been made from a thermoplastic material.

Mark with a cross (☒) **one** thermoplastic material from the list below that is suitable for the plug body.

epoxy resin ☐ ABS ☒ polyester ☒ (1)

(b) Brass has been used to make the pins of the plug.

(i) One property of brass is toughness.

Give **two** other properties of brass.

1

2

(2)

(ii) Give **two** reasons why the brass pins must have the property of toughness.

1

2

(2)



Leave
blank

(c) Part of the plug has a textured surface.

Give **two** reasons why part of the plug has a textured surface.

1

2

(2)

(d) (i) Copper wire has been used for the electrical cable.

Give **two** properties of copper that make it suitable for use as the electrical cable.

1

2

(2)

(ii) The copper wire is coated with a plastic material.

Explain **one** reason why the copper wire is coated with a plastic material.

.....

.....

(2)

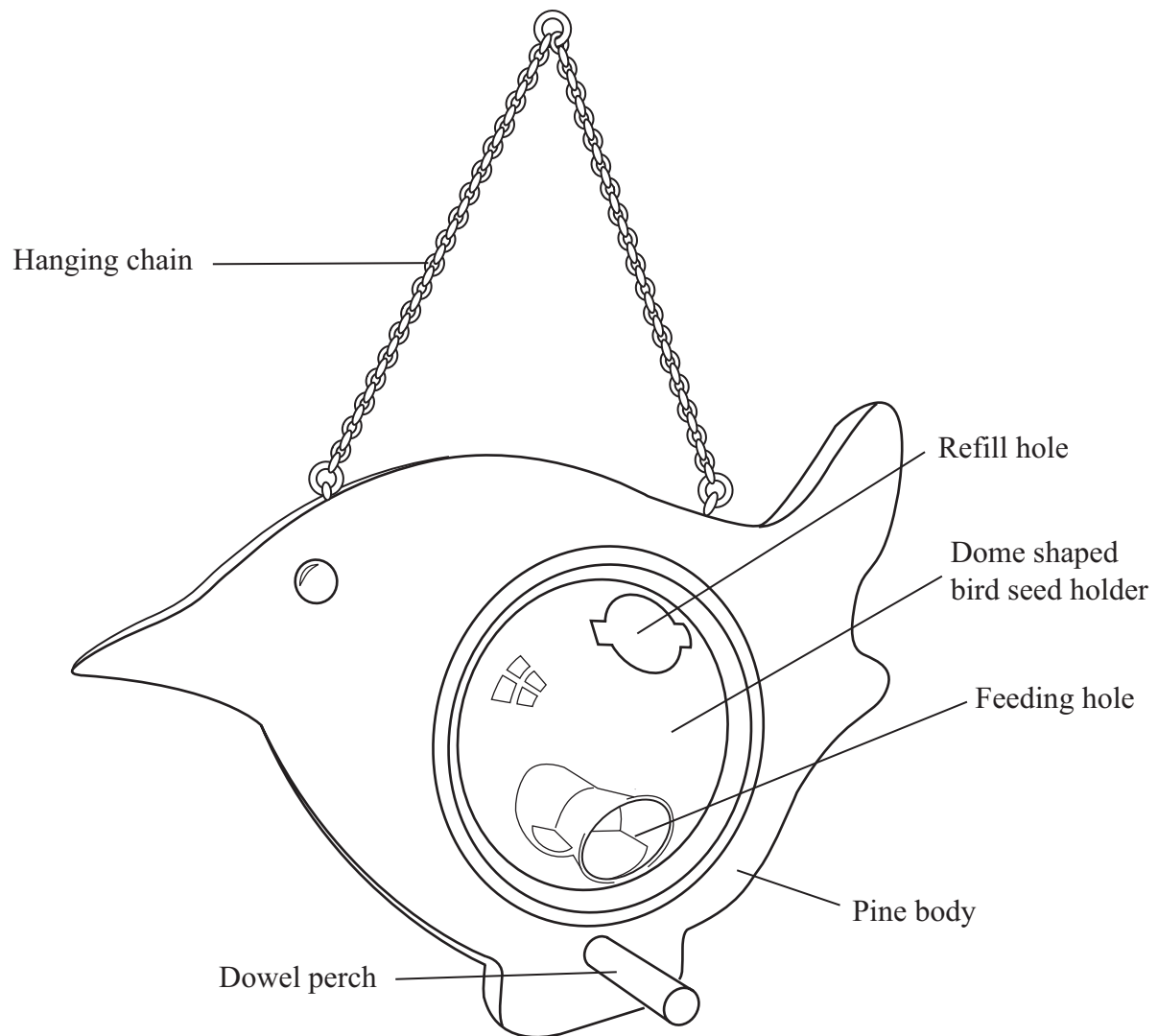
Q2

(Total 11 marks)

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3. The drawing below shows a bird feeder which holds bird seed.
It is sold in pet shops and garden centres.



Leave
blank

(a) Two specification points for the bird feeder are that it must:

- keep the bird seed dry
- prevent cats from getting at the feeding birds.

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

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

(i) The needs of the user.

Point

Reason

.....

.....

(2)

(ii) Environmental considerations.

Point

Reason

.....

.....

(2)

(iii) Quality.

Point

Reason

.....

.....

(2)



(b) The main body of the bird feeder is made from pine.

One reason for making the main body out of pine is that it can be treated with a preservative.

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

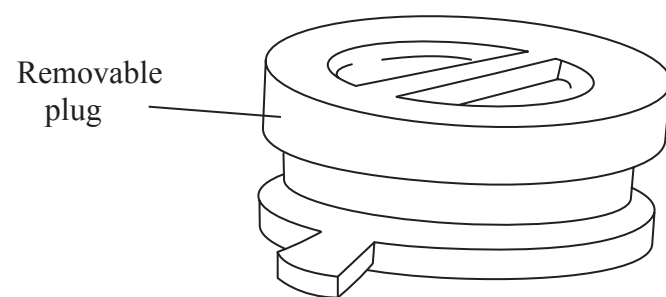
1

2

(2)

(c) The bird seed holder has a removable plug in the refill hole.

The removable plug is made by the injection moulding process.



Give **two** reasons why injection moulding is a suitable process to manufacture the removable plug.

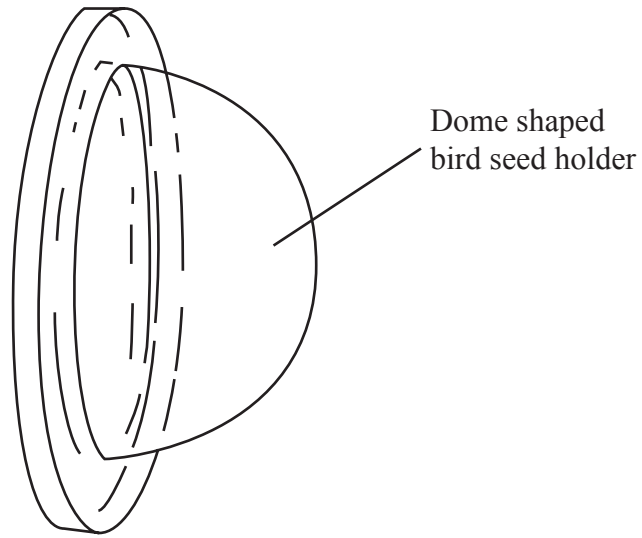
1

2

(2)



(d) The dome shaped bird seed holder is made from acrylic.



Give **two** properties of acrylic that make it suitable for the bird seed holder.

For each property give **one** reason why acrylic is suitable for the bird seed holder.

Property 1

Reason

.....

Property 2

Reason

.....

(4)

(e) Quality control checks are carried out at important stages during the manufacture of the bird seed holder.

Give **two** important quality control checks, other than safety, that should be made during the manufacture of the bird seed holder.

1

2

(2)



Leave blank

- (f) The pine body is made in high volume.
The shape of the pine body is suitable for manufacture using CAM.

Describe **one** way in which the shape of the pine body is suitable for manufacture in high volume using CAM.

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

- (g) Two purposes of the bird feeder are to:
- keep the bird seed dry
 - prevent cats from getting at the feeding birds.

Explain, under the following headings, how the bird feeder achieves these purposes.

- (i) Keep the bird seed dry.

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

- (ii) Prevent cats from getting at the feeding birds.

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

Q3

(Total 22 marks)

TOTAL FOR PAPER: 44 MARKS

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