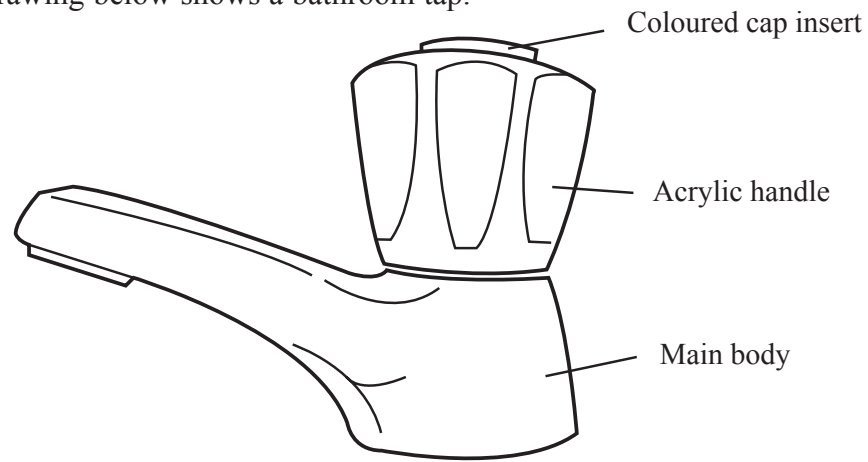




Answer ALL the questions. Write your answers in the spaces provided.

1. The drawing below shows a bathroom tap.



(a) Two specification points for the bathroom tap are that it must

- be easy to grip with wet hands
- show if the tap will be used for hot or cold water.

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

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

(i) **Market**

Point .....

Reason .....

(2)

(ii) **Environment**

Point .....

Reason .....

(2)

(iii) **Quality**

Point .....

Reason .....

(2)



Leave  
blank

(b) The main body of the bathroom tap is made from brass which is then plated.

One reason why the main body of the bathroom tap is made from brass is that brass can be finished by being plated.

(i) Give **two** other reasons why brass is a suitable material from which to make the main body of the bathroom tap.

1 .....

2 ..... (2)

(ii) Give **two** reasons why plating is a suitable finish for the main body of the bathroom tap.

1 .....

2 ..... (2)

(c) The handle of the bathroom tap is made from acrylic.

Give **two** properties of acrylic that make it suitable for the handle of the bathroom tap.

For each property give **one** reason why acrylic is suitable.

Property .....

Reason .....

Property .....

Reason ..... (4)

(d) Quality control checks are carried out on the coloured cap insert at important stages during the manufacture.

Name **two** important quality control checks that should be made during the manufacture of the coloured cap insert.

1 .....

2 ..... (2)



Leave blank

(e) The acrylic handle is suitable for high volume production using the injection moulding process.

Describe **one** way in which the shape of the handle makes it suitable for high volume production by the injection moulding process.

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

(f) Two purposes of the bathroom tap are that it must

- be easy to grip with wet hands
- show if the tap will be used for hot or cold water.

Explain, under the following headings, how the bathroom tap achieves these purposes.

(i) Be easy to grip with wet hands

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

(ii) Show if the tap will be used for hot or cold water.

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

(Total 22 marks)

Q1

--	--



Leave blank

2. The drawing below shows a pair of wooden steps.



(a) The hinge is made from brass, which is an alloy.

State the **two** main metals required to make brass.

1 .....

2 .....

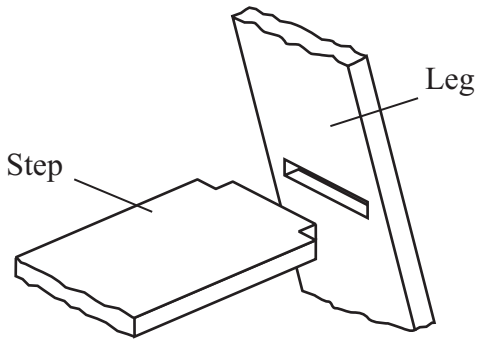
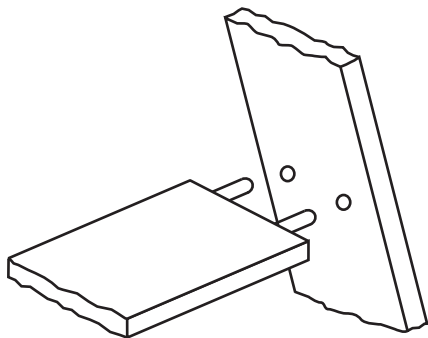
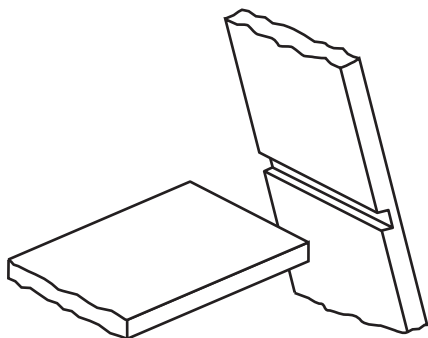
(2)



(b) The step is joined to the leg using a woodworking joint.

The table below shows three different joints which could be used to join the step to the leg.

Complete the table by giving the full name of each joint.

Joint	Name
	<p>..... and .....</p>
	<p>.....</p>
	<p>.....</p>

(4)

(c) The wooden steps are finished with a coat of varnish.

(i) Give **three** risks associated with using varnish in the school workshop.

1 .....

2 .....

3 .....

(3)



(ii) Explain **one** reason why the wooden steps are finished with clear varnish.

.....

.....

(2)

(Total 11 marks)

Leave  
blank

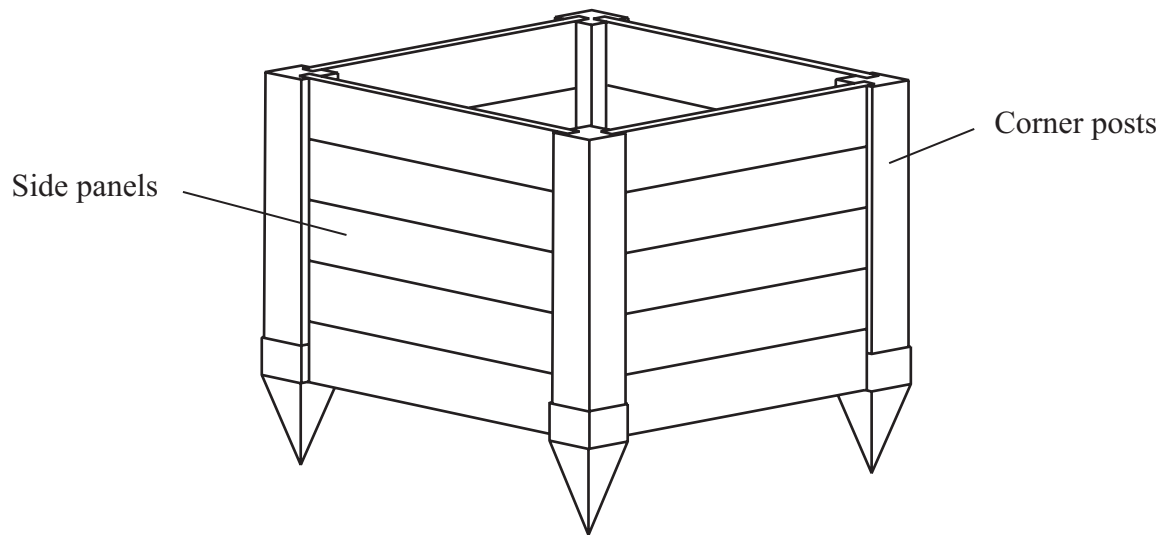
Q2

7

Turn over



3. The drawing below shows a compost bin which is used for recycling garden waste.



(a) Oak was considered for the manufacture of the compost bin.

Give **three** properties of oak.

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

(b) Chipboard was considered as a material from which to make the side panels of the compost bin.

Explain **one** reason why chipboard is not a suitable material from which to make the side panels of the compost bin.

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

(c) The four corner posts are driven 300mm into the ground to prevent the compost bin from moving.

Mild steel was chosen instead of wood for making the corner posts.

Explain **one** reason why mild steel was chosen instead of wood for making the corner posts.

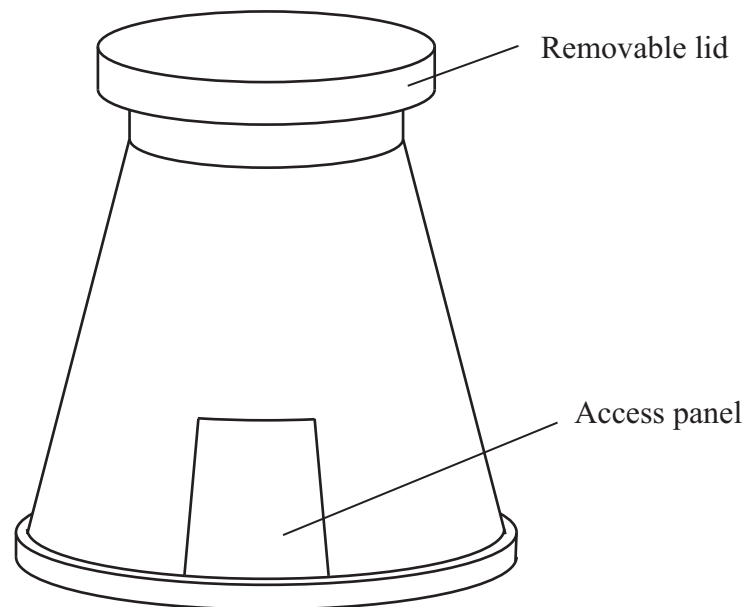
- .....
- ..... **(2)**





Leave blank

(d) An alternative type of compost bin made from ABS is shown below.  
The removable lid is manufactured by the injection moulding process.



Name **two** properties of ABS which make it suitable for the removable lid.

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

Property .....

Reason .....

Property .....

Reason .....

(4)

Q3

(Total 11 marks)

**TOTAL FOR PAPER: 44 MARKS**

**END**



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