DULWICH COLLEGE | SINGAPORE |

Year 9 Examination
Design & Technology
May 2017

Name:.....

Time allowed: 60 minutes

Answer **all** questions in the spaces provided.
The marks for each question are shown in brackets.
Read the questions carefully.

Total Marks available	/ 63	Teacher comment:
	%	
Level/Grade		

Student reflection

Section A

Answer **all** questions in this section.

For Examiner's Use

1 Fig. 1 shows a cordless rechargeable drill.

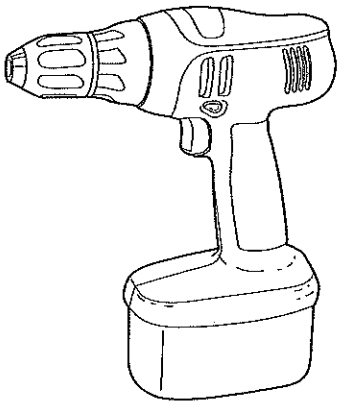


Fig. 1

(a) State **one** benefit of using a cordless rechargeable drill.

..... [1]

(b) State **one** drawback of using a cordless rechargeable drill.

..... [1]

2 **(a)** Name the types of file shown in section below.

....

[4]

(b) Describe **one** safety check you should carry out before using a file.

..... [1]

For Examiner's Use

3 **(a)** Name the measuring tool shown in Fig. 2.

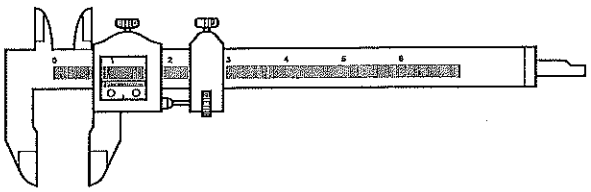


Fig. 2

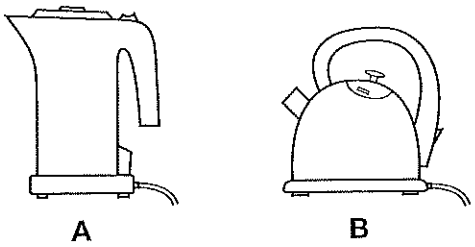
..... [1]

(b) Give **one** specific use for the tool in Fig. 2.

..... [1]

For Examiner's Use

4 Fig. 4 shows two different kettles.



A **B**

Fig. 4

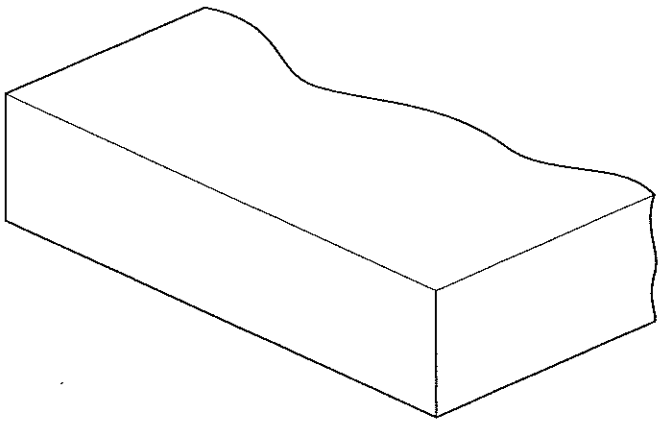
(a) Name a specific plastic for the body of kettle **A**.

..... [1]

(b) Name a specific metal for the body of kettle **B**.

..... [1]

5 Complete the drawing below to show the construction of blockboard.



[2]

For Examiner's Use

6 Fig. 7 shows details of an incomplete design for a tape dispenser.
The support is made from thermoplastic sheet and the base from hardwood.

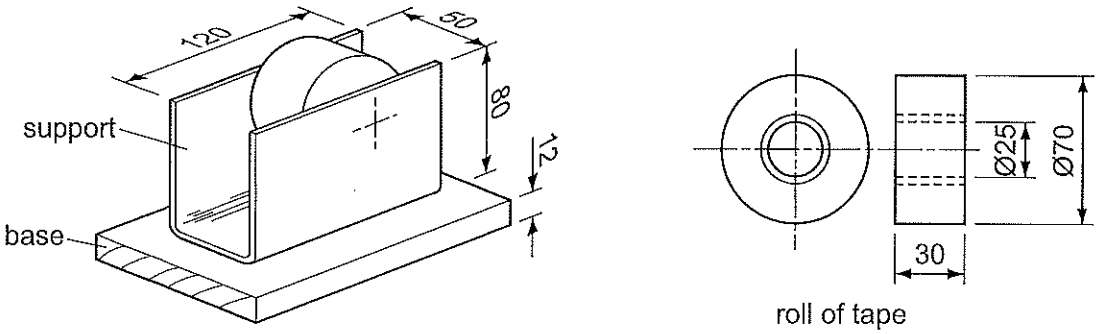


Fig. 7

(a) Give **one** advantage of using thermoplastic sheet rather than thermosetting plastic sheet for the support.

..... [1]

(b) Name **two** methods of heating the plastic sheet so that it could be bent to shape.

1 ..... [1]

2 ..... [1]

(c) Use sketches and notes to show:

- how the support could be fixed to the base;
- how the roll is allowed to rotate and can be replaced easily;
- a device that will cut the tape and leave a small amount for the next person using the tape;
- details of materials, constructions and fittings used.

[9]

[Turn over

For Examiner's Use

7 Fig. 10 shows a notelet holder made from hardwood.

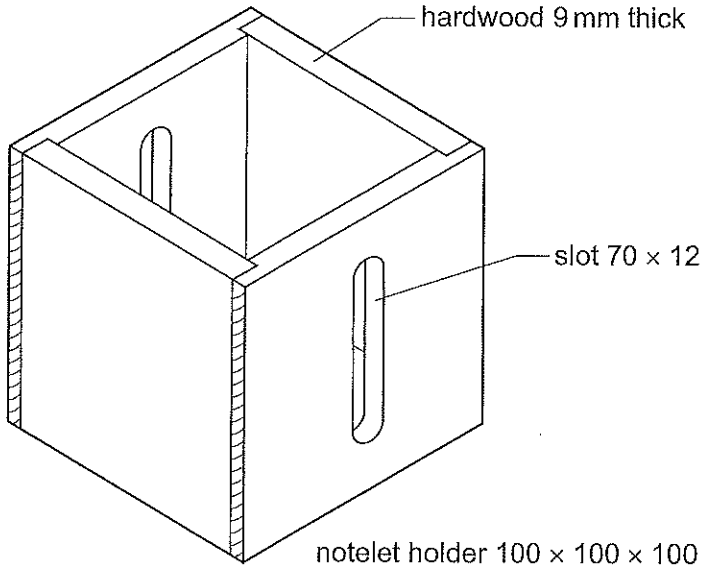


Fig. 10

(a) (i) Name a suitable hardwood for the notelet holder.

..... [1]

(ii) Describe **two** features of hardwoods that can make them attractive.

1 ..... [1]

2 ..... [1]

(b) Use sketches and notes to show how **one** of the slots could be cut out.

[4]

[Turn over

(c) A lapped joint is used to join the sides together at each corner. Fig. 11 shows part of the lapped joint marked out.

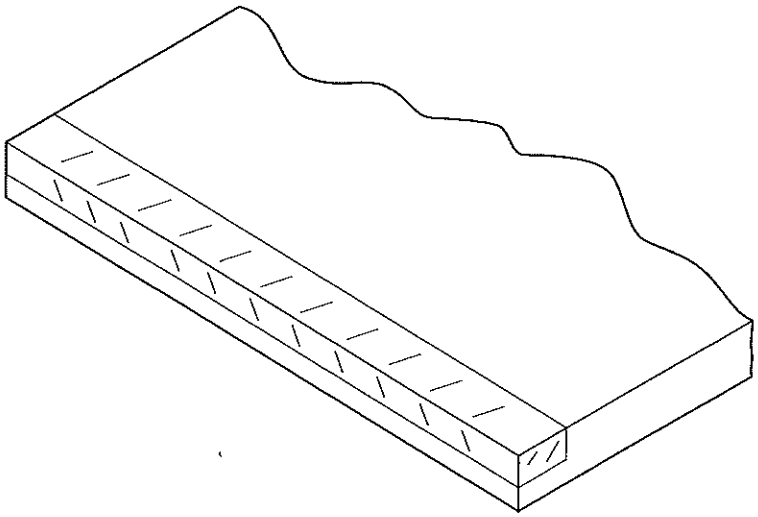


Fig. 11

(i) Indicate clearly, on Fig. 11, **one** line that would be marked out using a marking gauge and **one** line that would be marked out using a cutting gauge. [2]

(ii) Use sketches and notes to show how you would cut out the lapped joint.
Name all the tools and equipment used.

[4]

For Examiner's Use

8 Fig. 12 shows a bracket made from mild steel sheet that could be used to support a variety of garden tools.

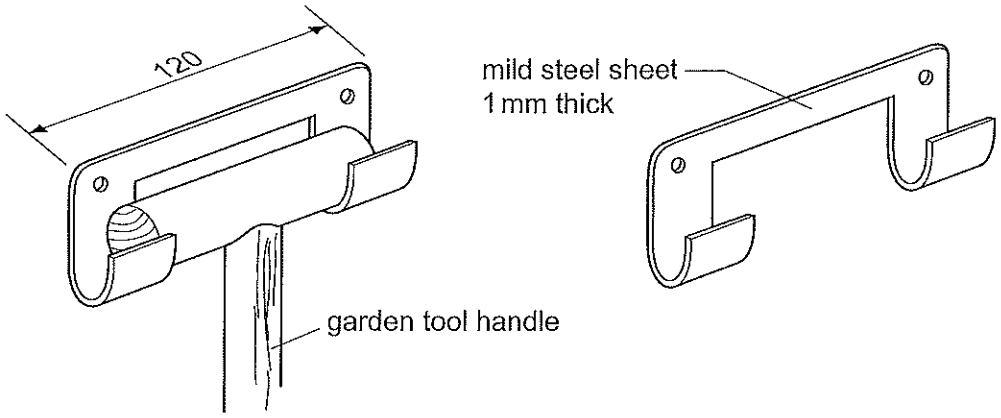


Fig. 12

(a) State **two** properties of mild steel that make it suitable for the bracket.

1 ..... [1]

2 ..... [1]

(b) State **two** important pieces of information you would need to find out before designing the bracket.

1 ..... [1]

2 ..... [1]

(c) Fig. 13 shows the steel sheet from which the bracket will be made.
Draw the flat shape of the bracket before bending and the positions for the holes on Fig. 13.

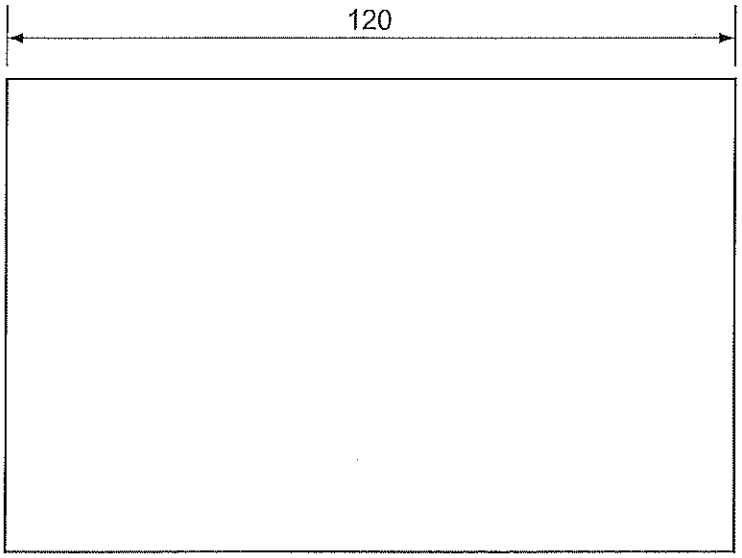


Fig. 13

[2]

For Examiner's Use

(d) (i) Give **one** reason why a centre punch would be used to mark the centre of the holes before they are drilled.

..... [1]

(ii) State **two** safety precautions you would take when drilling sheet steel.

1 ..... [1]

2 ..... [1]

(e) Give **two** reasons why a template would be useful when making twenty brackets.

1 ..... [1]

2 ..... [1]

(f) The bracket will be cut from mild steel sheet and bent to shape.
Use sketches and notes to show how the following processes could be carried out.
Name all the tools used.

(i) Cutting the mild steel sheet to shape.

[4]

(ii) Bending the mild steel sheet to shape.

[4]

For Examiner's Use

(g) (i) Give **two** reasons why the bracket would be painted.

1 ..... [1]

2 ..... [1]

(ii) Describe how the surface of the mild steel sheet would be prepared before it is painted.

.....

.....

..... [2]

(h) The bracket will be screwed to the side of a wooden shed.
Sketch and name the type of screws used.

[2]

[Turn over