Section A
Answer all questions in this section.

A1  A logo for a tool shop is shown below.

Complete the full size view of the tool shop logo in the space provided to the right by drawing:

(a) the outer shape of the rectangle [2]
(b) the claw hammer shape [7]
(c) the spanner shape. [5]
A2 A rotating open/closed sign for the shop is shown below.

The sign is made from the five pieces of 1 mm cardboard shown in the table.

Complete the exploded view of the rotating shop sign by adding:

(a) the rectangular hole in the front piece [2]
(b) the rotating wheel [4]
(c) the back piece. [2]

Ignore the thickness of the material.

A3 A split pin is inserted through the centre of the sign to fasten the parts together and allow the wheel to rotate.

Complete the sectional view by adding the split pin. [3]
Section B
Answer either question B4 or B5.

B4 Orthographic views of a tool rack are shown below.
The tool rack is made from 10 mm thick softwood.

(a) Complete the single point perspective view of the tool rack to a scale of 1:2. [13]

(b) Orthographic views of a socket spanner are shown below.
In the space below, complete the 4:1 drawing of the socket by adding:
(i) the right-hand half of the hexagon [1]
(ii) the sides of the socket spanner [1]
(iii) the top ellipse. [5]
Ignore hidden detail.

(c) The table below shows the sales of the most popular tools in a shop over one month.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Spanners</th>
<th>Screwdrivers</th>
<th>Hammers</th>
<th>Pliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Sold</td>
<td>42</td>
<td>53</td>
<td>15</td>
<td>37</td>
</tr>
</tbody>
</table>

In the space to the right draw a bar chart to show the sales of each tool. [5]
B5 Orthographic views of a blister pack for screws are shown below.

(a) Complete the full size isometric view of the blister pack below. [12]

(b) The mould for vacuum forming the blister is shown to the right.

Add sketches and notes to show:

(i) two different modifications to the mould that would make it easier to remove from the blister after vacuum forming [4]

(ii) a modification to the mould that would help prevent air pockets and ensure the blister has good definition and shape. [2]

(c) The blister packs are to be mass produced in quantities of 5000.

State one suitable commercial process that could be used to:

(i) cut out the card backboards ...................................................................... [1]

(ii) print the SCREWS lettering onto the backboards. ................................. [1]

(d) The blisters are to be vacuum formed in thin clear plastic, before being trimmed to size and glued to the backboard.

Complete the table below to show one safety precaution for each stage in the making process.

<table>
<thead>
<tr>
<th>Process</th>
<th>Safety precaution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacuum forming the plastic blister.</td>
<td>.................................</td>
</tr>
<tr>
<td>Trimming the plastic blister to size with a craft knife.</td>
<td>.................................</td>
</tr>
<tr>
<td>Gluing the plastic blister to the backboard with contact adhesive.</td>
<td>.................................</td>
</tr>
</tbody>
</table>

(e) The symbol below is to be printed onto the blister pack.

Explain one benefit of using symbols on products instead of written instructions.

............................................................................ [2]