Section A

Answer all questions in this section.

An exit sign is shown below. The sign is made from 6 mm thick acrylic.

A1 Complete the full size isometric view of the exit sign in the space provided to the right by drawing:

(a) the outer shape of the sign [7]

(b) the thickness of the sign. [2]

A2 The EXIT lettering is shown on the grid below. The dots on the grid are 5 mm apart.

Complete the EXIT sign by adding the missing letters on the isometric view. [2]
A sign forbidding the taking of photographs is shown below.

(a) Complete the half size view of the sign in the space provided to the right by drawing:

(i) the outer border with diagonal bar
(ii) the camera image.

(b) Another backboard is needed for a ‘NO FOOD OR DRINK’ sign.

Design a suitable image for the backboard in the circle provided.

Part A:
The outer border with diagonal bar is made from 3 mm thick red acrylic and goes in front of the backboard.

Part B:
The backboard has a black image on white 3 mm thick acrylic and goes behind Part A.
Section B
Answer either question B4 or B5.

B4 An isometric view of a litter bin is shown below.

(a) Complete the orthographic views of the litter bin to a scale of 1:10. [13]

(b) The litter bin has a cylindrical steel liner inside which can be removed when emptying the bin.

Complete the pictorial view of the liner below by adding the top ellipse. [7]

(c) The image to the right has been produced using Computer Aided Design (CAD).

(i) State two advantages of using CAD to produce the image.

1. ..........................................................................................................................

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

(ii) A vinyl self-adhesive sticker of the image is to be made using Computer Aided Manufacturing (CAM).

State one suitable CAM machine for making the sticker.
........................................................................................................................... [1]

(iii) The manufactured sticker is to be positioned on the front face of the litter bin below the opening.

State the maximum width & height of the sticker so that it can fit into the space available.

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

Height ................................................................................................................. [2]
A cardboard leaflet holder is shown below.

(a) Complete the development (net) of the leaflet holder to a scale of 1:2.  [10]

(b) Complete the table below to show one tool or item of equipment you would use to produce a prototype of the leaflet development (net).

<table>
<thead>
<tr>
<th>Process</th>
<th>Tool/item of equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marking out the development (net) on card</td>
<td></td>
</tr>
<tr>
<td>Scoring the fold lines</td>
<td></td>
</tr>
<tr>
<td>Cutting out the development (net)</td>
<td></td>
</tr>
</tbody>
</table>

(c) The leaflet holders are to be produced in quantities of 5000.

(i) State a suitable adhesive for joining the development (net) together.

................................................................................................................................. [1]

(ii) Explain one advantage of using a die cutter to manufacture the developments (nets).

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

Another leaflet holder is shown to the right.

The leaflet holder is made from 15 mm thick MDF.

(d) To a scale of 1:3, complete the table by drawing the parts needed to make the leaflet holder.  [9]