N5

Graphic Communication

S4 Exam

January 2014

Duration 1 Hr and 30 Mins

Total Marks – 60

Attempt ALL questions.

All dimensions are in mm.

All sketches and drawings are in third angle projection.

You may use rulers and compasses for sketching.

Black or blue ink must be used for answering questions, pencil may be used for sketching.

Name

Seat

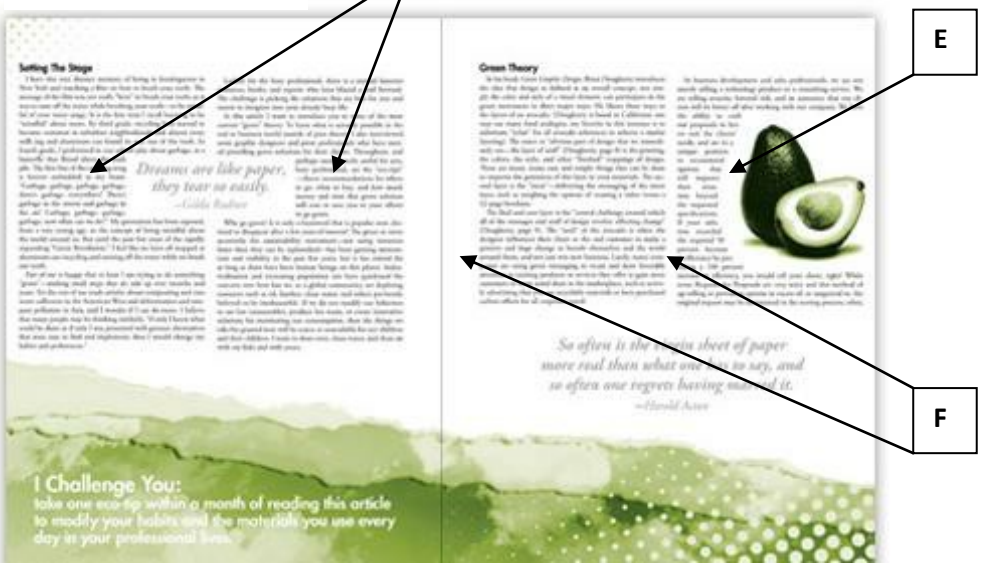
MARKS DO NOT WRITE IN THIS SIDE OF THE MARGIN

Question 1.

1. The two different documents shown below were produced using DTP software.

Document 1

Document 2



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(a) State the DTP term for each of the features A to F shown on documents 1 and 2.

A Text / Sub-Heading

B Logo / Header

C Footer

D Text Box / Column

E Text Wrap

F Margin / Gutter

6

(b) When designing DTP documents you should think about the principals for an effective display.

(i) In document 2 the designer used green and blue-green as the main colour scheme throughout the display. State the effect that this creates.

Makes the page calming/soothing - Relates to nature

1

(ii) State a suitable colour the designer could use in document 2 if he wished to create a contrasting heading.

Red or Orange

1

(iii) State one instance where alignment has been used in document 2.

Both Headings and text at the top of the page are Aligned

Quote on the left page is aligned to image on the right

1

(iv) Describe the effect that alignment has on desk top published documents.

Gives the page structure / Makes the page look neat & tidy /

Make the page easier to read

1

(v) Name the DTP edit used on the alternative heading below for Document 1.

Text Flow

1

Alternative heading for Document 1

Total Marks: 11

MARKS

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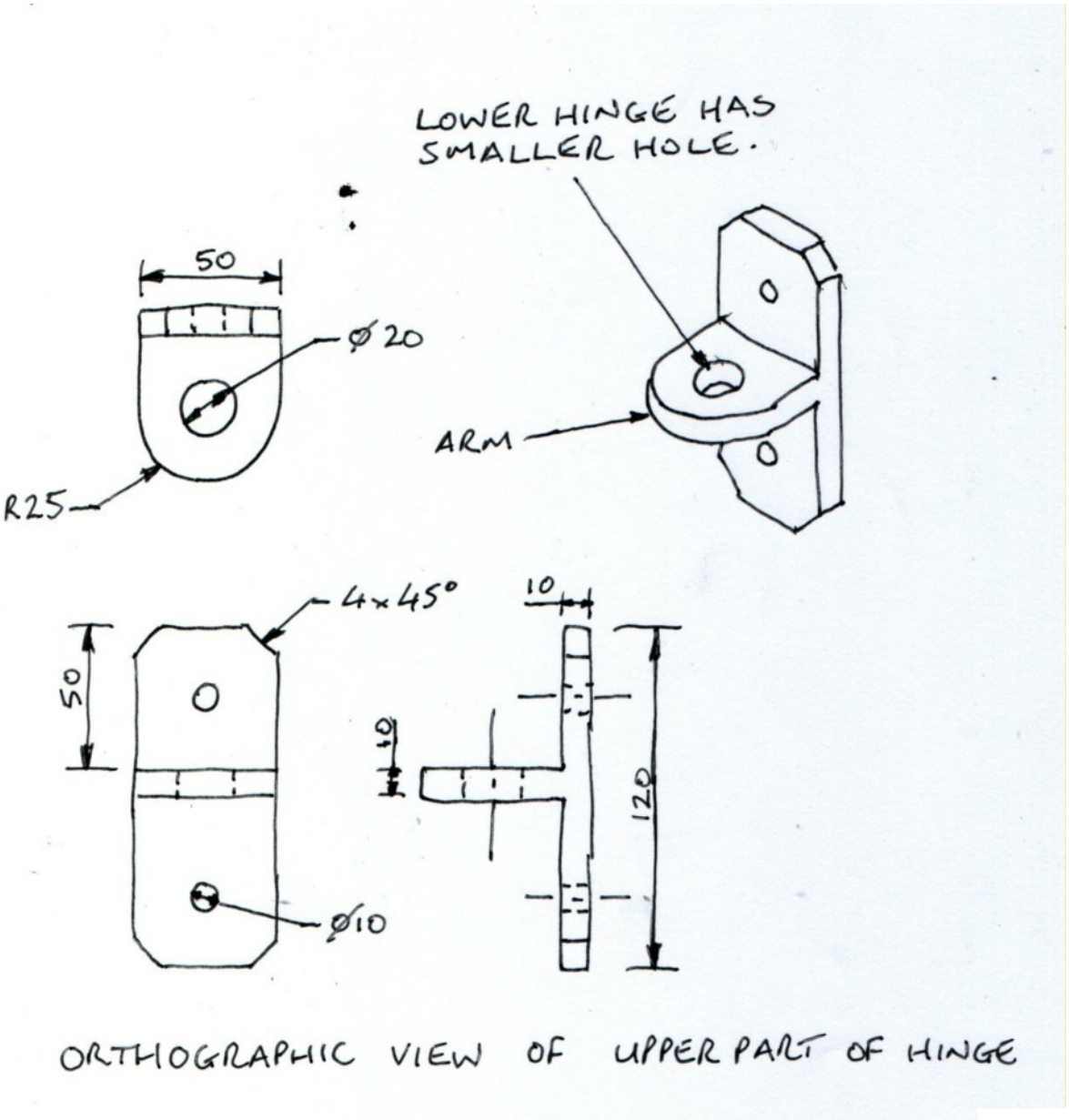
Question 2.

A hinge has been designed to attach a wooden gate to a wooden post. A 3D model was produced from preliminary sketches (shown below) created at the design stage.



MARKS

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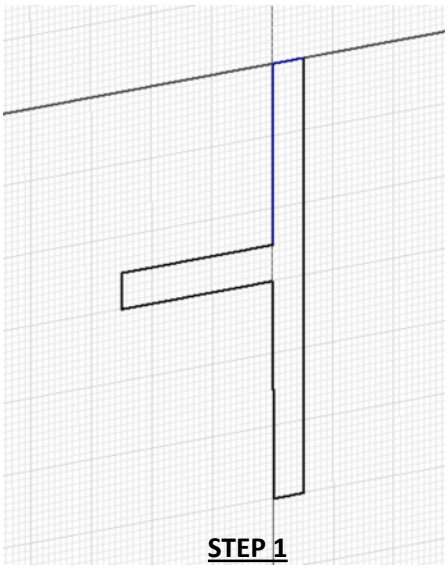
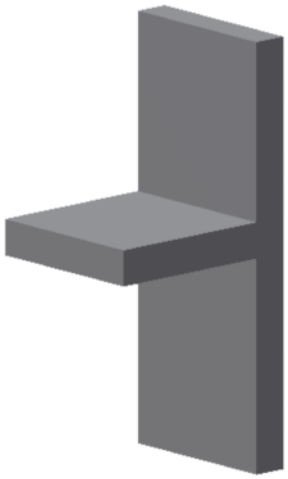
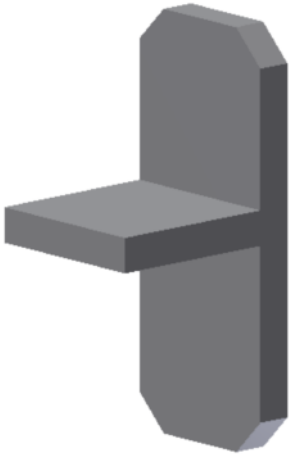
Below are the steps taken to produce the upper part of the hinge using a commercial 3D modelling software package (e.g. Inventor 2011).



STEP 1

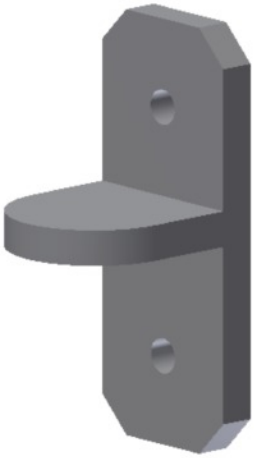


STEP 2

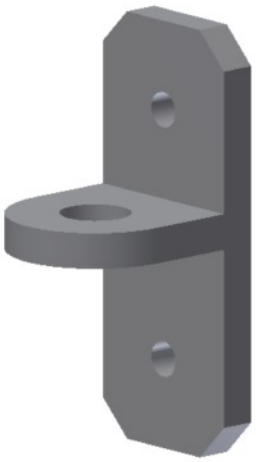


STEP 3

STEP 4



STEP 5



STEP 6

a) State the size of the extrusion used at step 2. 50 mm **1**

b) Describe how you would use a 3D modelling package to get from **step 5** to **step 6** with reference to the dimensions in the preliminary sketches. You may use sketches in the space provided to support your answer.

Create a sketch on the surface where the small hole is to be removed. Draw a circle Ø20 using the circle tool in the centre of the surface. Extrude the circle, subtracting the material 10 mm so that all the material has been subtracted from the hinge.

3

MARKS

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c) i) Name the editing command used to get from **step 2** to **step 3**.

Chamfer

1

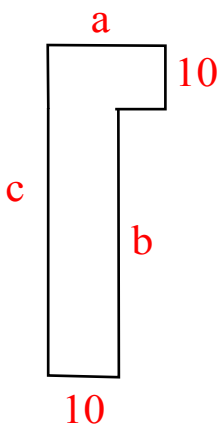
ii) Name the editing command used to get from **step 3** to **step 4**.

Fillet

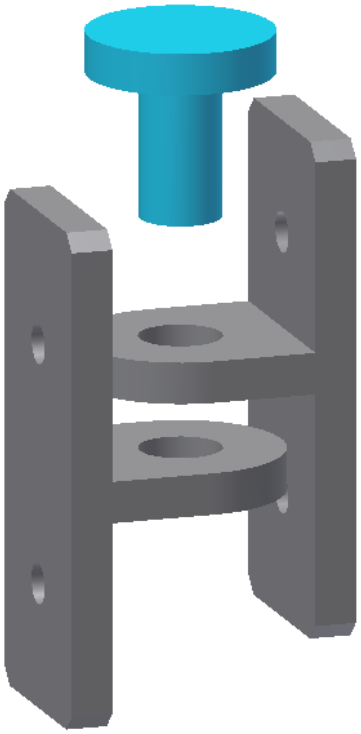
1

d) A pin would be used to secure both parts of the hinge. Describe, ***with reference to dimensions and CAD modelling terms***, how to produce a 3D CAD model of this pin. You must make reference to the dimensions on the preliminary sketch. A suggested form for the pin is shown below. You may use sketches to support your answer.

Create a sketch and draw using the line tool half of the pin. Dimension 'a' must be greater than 10mm, 15mm approx. Dimension 'b' must be greater than 20mm to allow the pin to go through both hinges, 30mm approx. Revolve the profile 360° around the centre axis 'c', adding the material to create the 3D pin.



Suggested form for the pin.



3

MARKS

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e) An Orthographic production drawing is produced from the 3D CAD model as shown below.

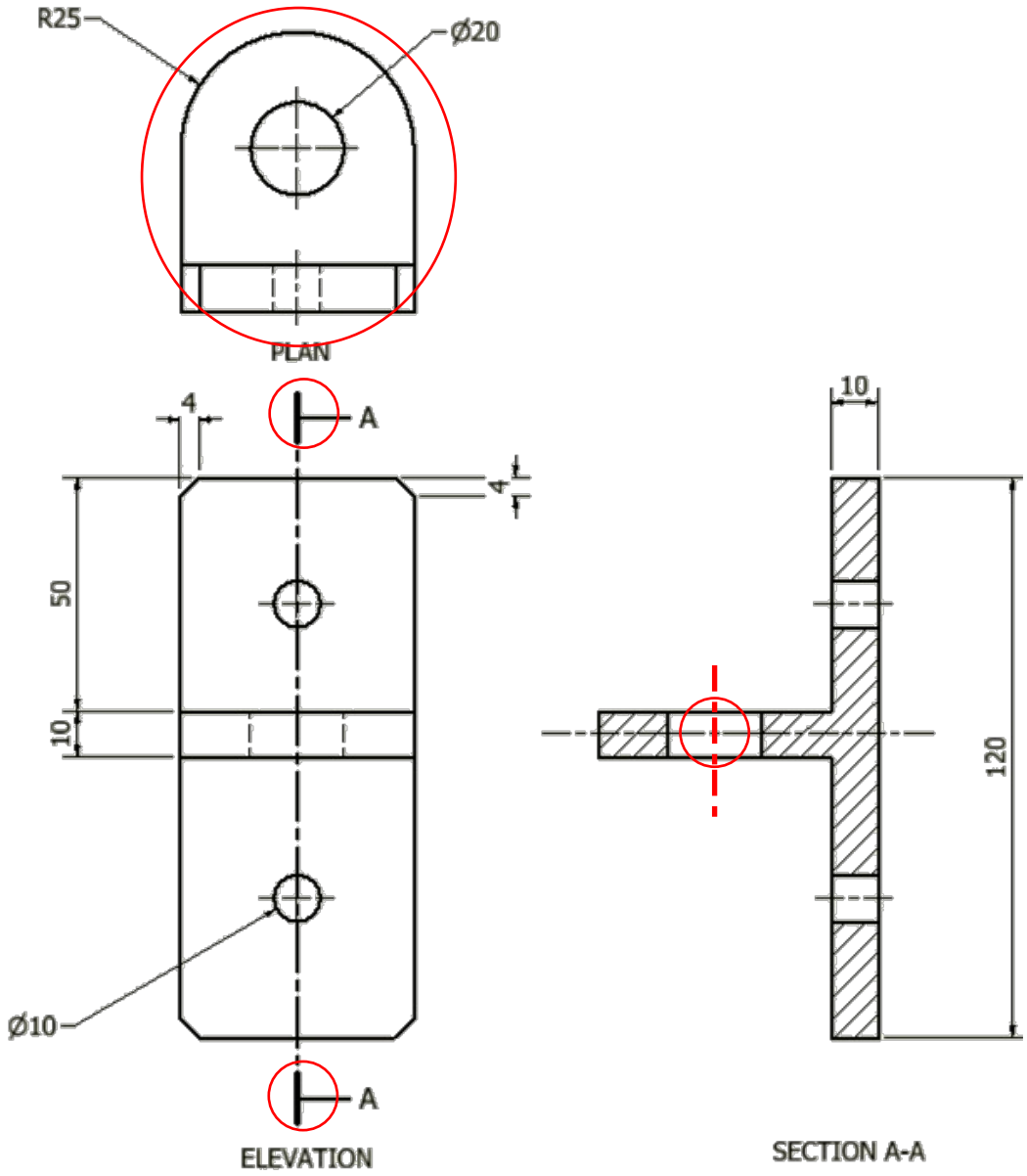
There are errors in the drawing. State 3 errors in the production drawing. You may annotate the drawing to support your answer.

i) No arrow heads on sectional line

ii) Plan is facing the wrong direction

iii) Horizontal centre line should be vertical through the circle

3



Orthographic Production drawing of the hinge

Total Marks: 12

Question 3.

MARKS

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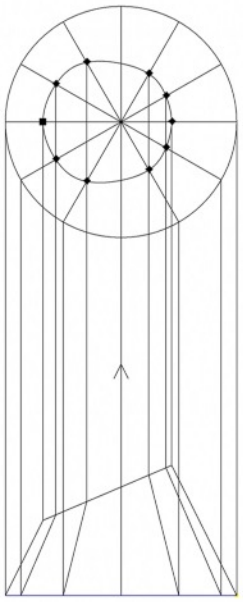
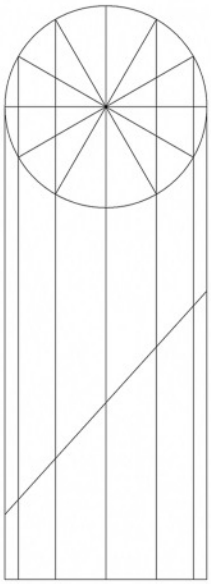
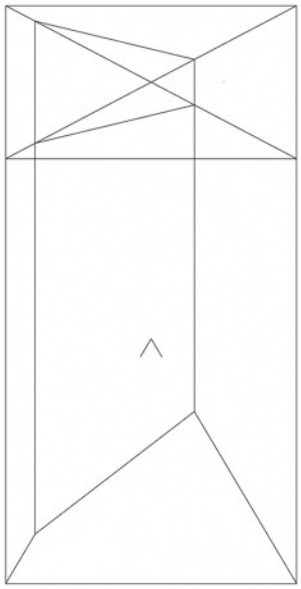
Six cut geometric forms are shown as orthographic views. Options for true shapes are given opposite and contain only six correct true shapes which match the cut geometric forms. Place the number of the matching true shape in the box under each cut geometric form in the orthographic views.



1



4



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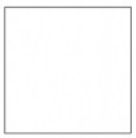

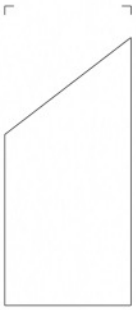

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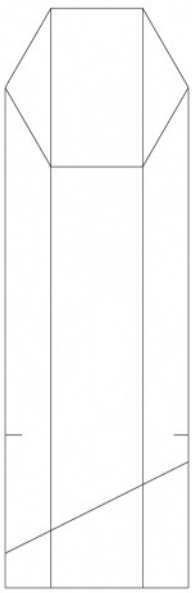

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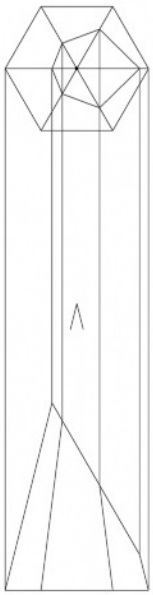
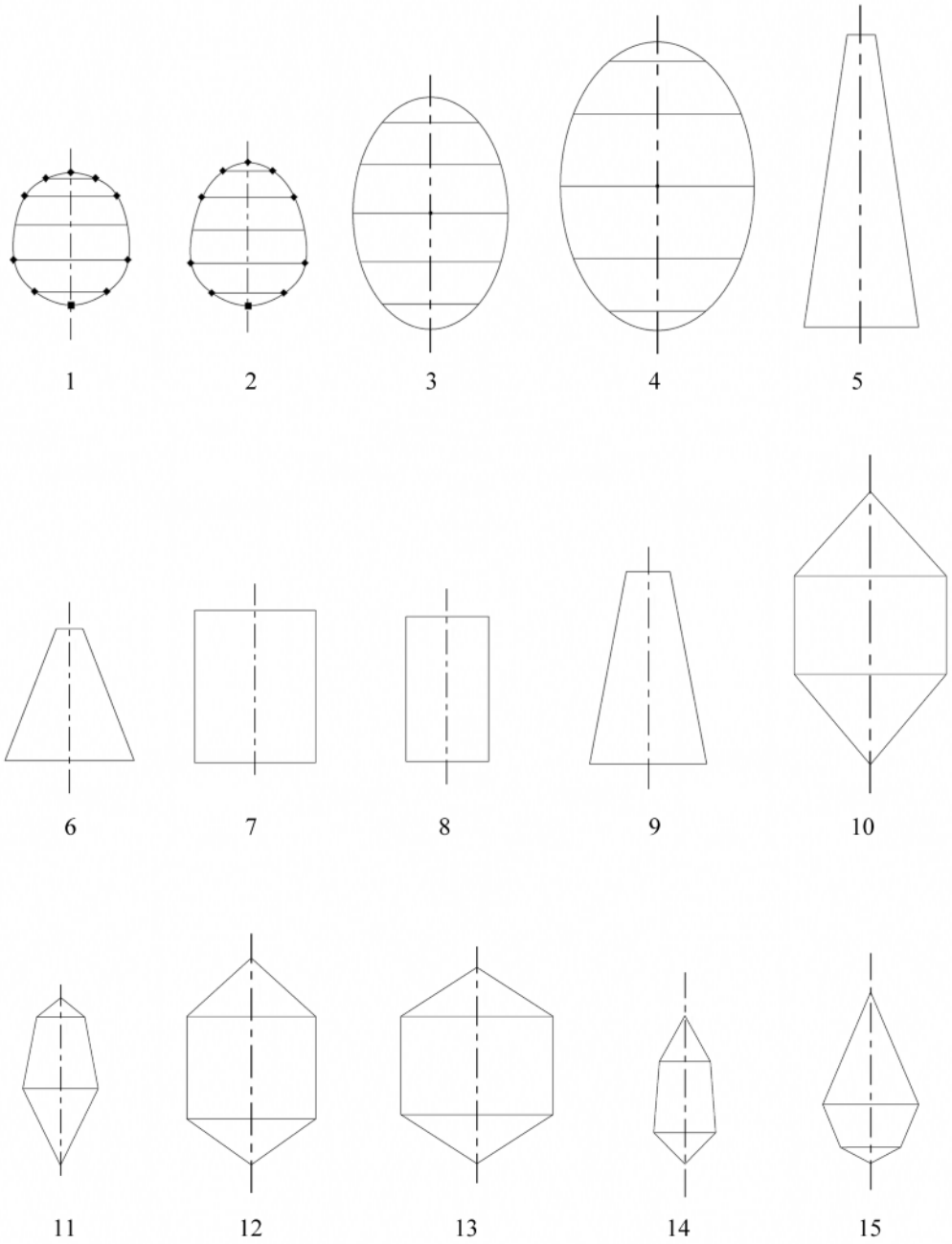


11

6

Total Marks: 6

True shape options



MARKS

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Question 4.

A company that exports game consoles across Europe is experiencing huge changes in sales figures. The marketing team wish to bring this to the attention of the company directors.

A graphic designer has been asked to produce graphs or charts that make the sales figures more visual for use in promotional graphics. The sales figures are shown below.

Sales figures A

Top European buyers by percentage in December 2013.

UK Sales	21%
Italian Sales	13%
French Sales	21%
German	16%
Spanish	29%

Sales figures B

Games console	Number of sales
PS3	2,380
PS4	4,220
Xbox 360	1,950
Xbox One	5,050
Nintendo Wii	1,790
PS Vita	1,010
Nintendo 3DS	1,270

(a) State the best type of graph or chart to show the **Sales figures A** in December.

Pie Chart

1

(b) State one reason for using this type of graph or chart.

The areas are split into a percentage share of a whole number

1

(c) State the best type of graph of chart to use when representing **Sales figures B** information.

Bar / Line Chart

1

(d) State one reason for using this type of graph or chart.

To compare sales figures between items

1

Total marks: 4

MARKS

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Question 5.

Plans of a house are shown below.

(a) State the type of plans shown at A, B and C.

A Location Plan **1**

B Floor Plan **1**

C Site Plan **1**

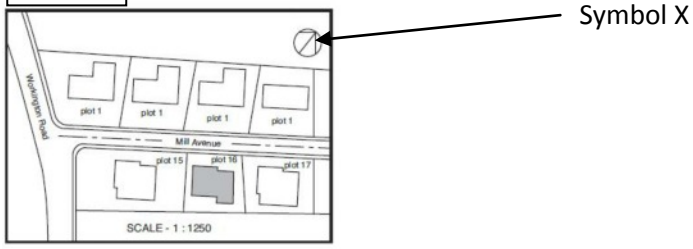
(b) State what the **symbol X** on **Plan A** represents.

Symbol X North Symbol **1**

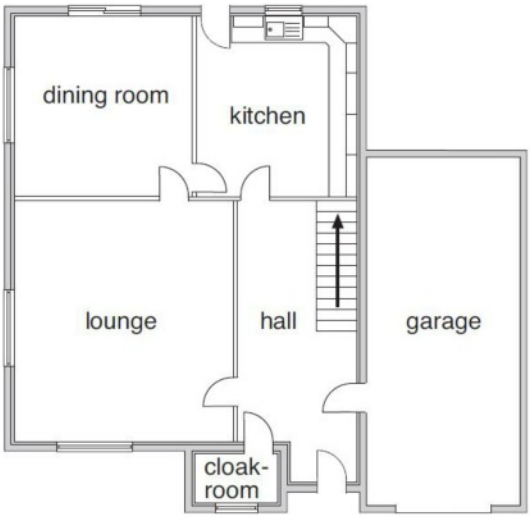
(c) State an appropriate scale for displaying the information in **Plan A**.

Scale: 1 : 1250 **1**

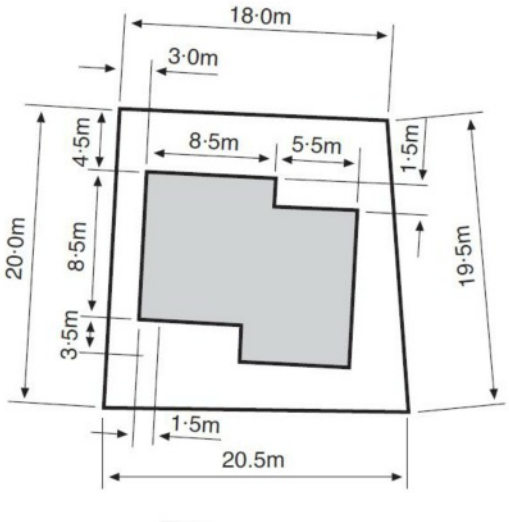
Plan A



Plan B



Plan C



Total Marks: 5

MARKS

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Question 6.

The elevation, end elevation and the plan of a pipe elbow are shown in **Drawing X**.

(a) State which 2 of the pictorial views 1 to 6 on the next page represent the pipe elbow shown in **Drawing X**.

(i) 3 **(ii)** 6 **2**

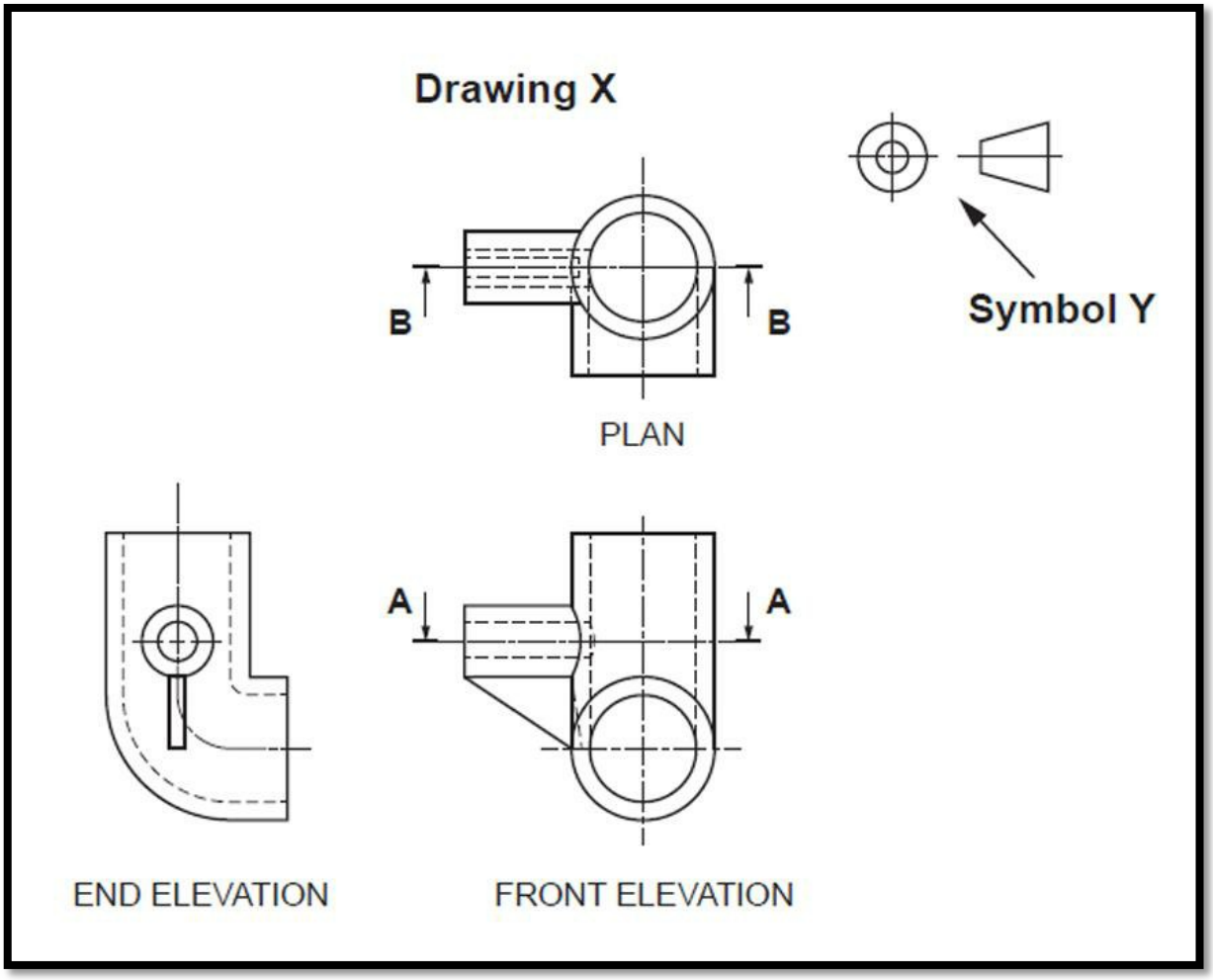
(b) (i) Eight sectional views 7 to 14 are shown on the next page. State the correct sectional view for **Section A-A** and **Section B-B** in the orthographic views.

Section A-A 9 **Section B-B** 12 **2**

(ii) State one benefit of using a sectional drawing in relation to this pipe elbow.

To show the internal structure / To see the wall thickness

1



MARKS

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(c) State the name of the symbol shown at **Y** on the Orthographic drawing.

3rd Angle Projection Symbol

1

(d) Explain what scale 5:1 means.

The drawing will be 5 times bigger than the original

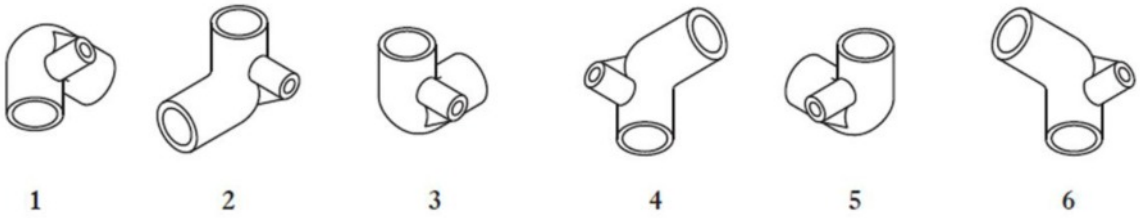
1

(e) State where on orthographic drawings, the information scale 5:1 would be found.

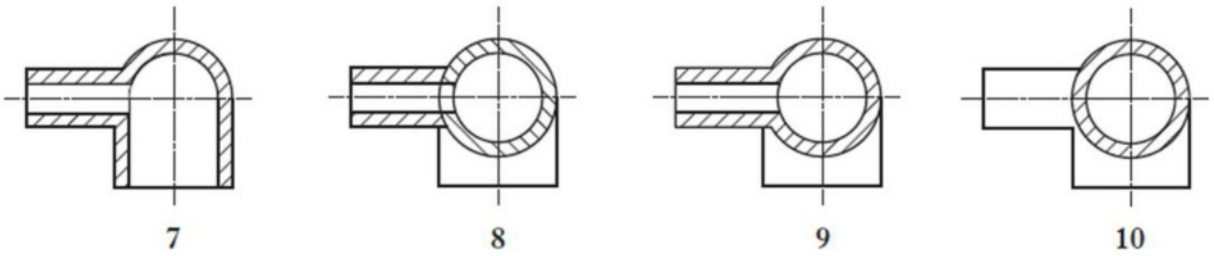
The scale would be found in the Title Box

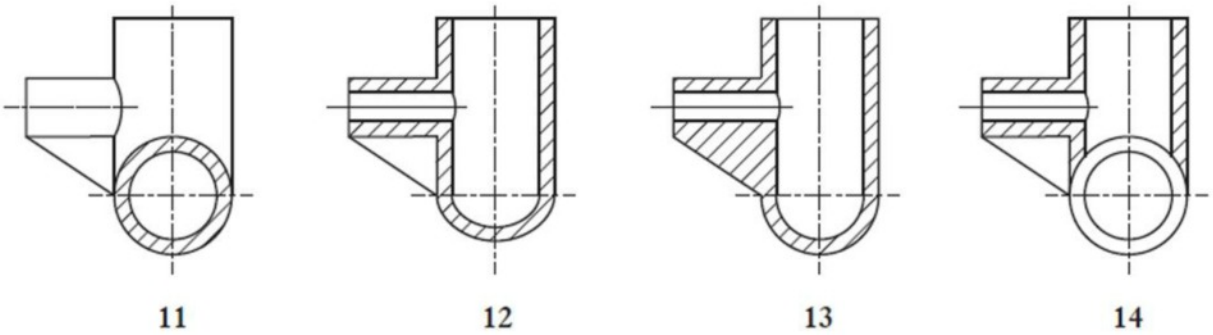
1

Pictorial views 1 to 6.



Sectional views 7 to 14





Total Marks: 8

MARKS

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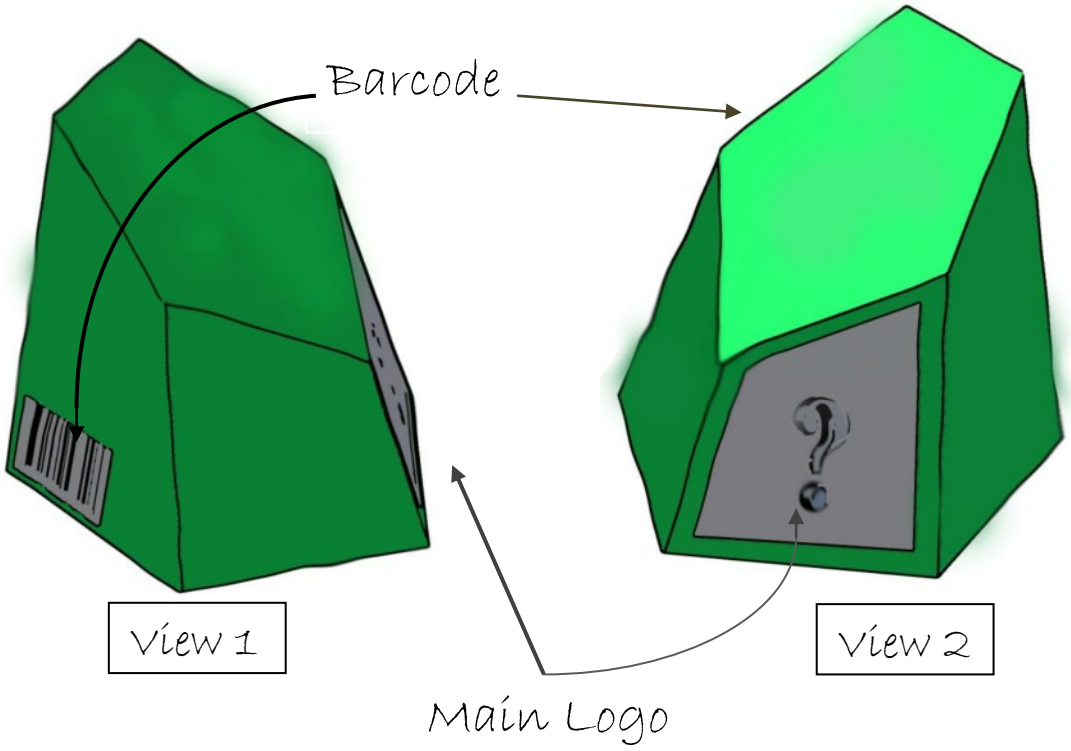
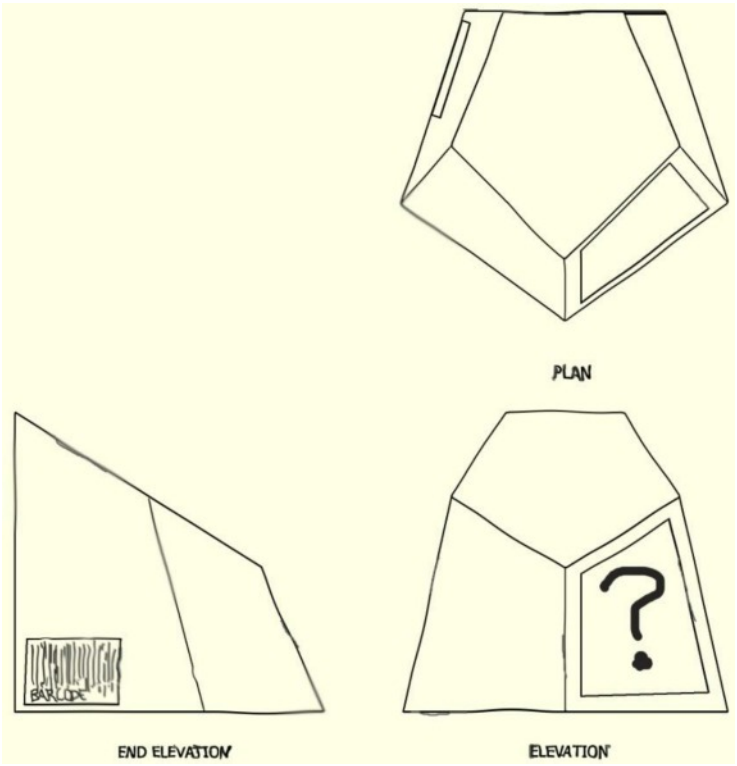
Question 7.

A chocolate confectionary manufacturer is developing a new packaging design for one of its products. One of their designers has made preliminary pictorial and orthographic sketches for a possible new package as shown below.

Preliminary pictorial sketch of package design



Preliminary orthographic sketch of package design



MARKS

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The package would be made from a single sheet of card. A sketched surface development showing the outer surface of the package design is shown below.

Indicate on the surface development below, the location of:

(a) The main logo – using the letter "**L**"; **1**

(b) The barcode – using the letter "**B**" **1**

(c) The designer plans on using desk top publishing software to produce a promotional leaflet to advertise the package design. State one benefit that DTP has brought to the publishing industry (other than environmental benefits).

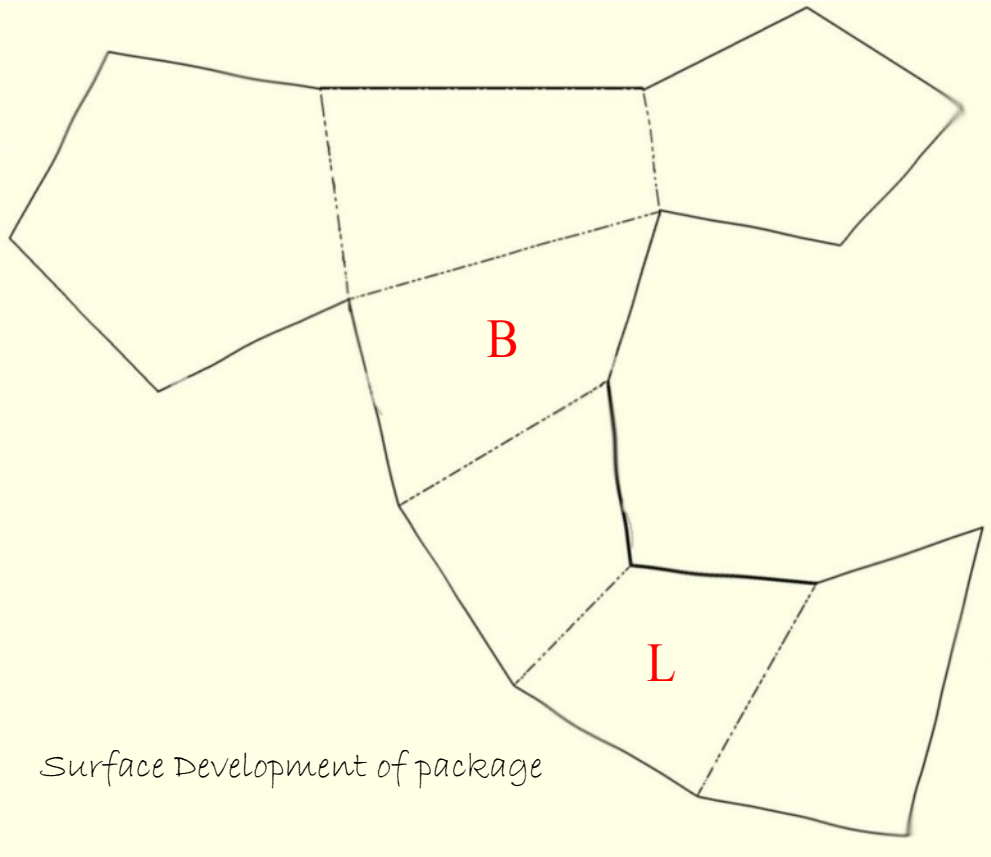
Quicker to produce documents / Easier to edit etc

1

(d) State **two** ways in which the publisher can reduce the magazine's impact on the environment.

Reduce the size of the magazine / Use recycled paper /

Produce magazine in black & White / On-line version rather than Hardcopy **2**



Total Marks: 5

MARKS

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Question 8.

A street liner bus advert promoting "Circulite", a stylish pendrive, is shown below. Some of the text and original images used in the poster are laid out in the **parts box** in their original form. The original parts and graphics were edited in a DTP package before being placed in the final layout.

(a) State the name of the DTP feature applied to each of the original items to get them ready for use in the final layout (**do not** use the same edit twice).

(i) "*The Circulite pendrive by Buzz-IT*" slogan – State one DTP edit

Dropped Shadow / Scale down **1**

(ii) Image of the wasp – State one DTP edit.

Crop **1**

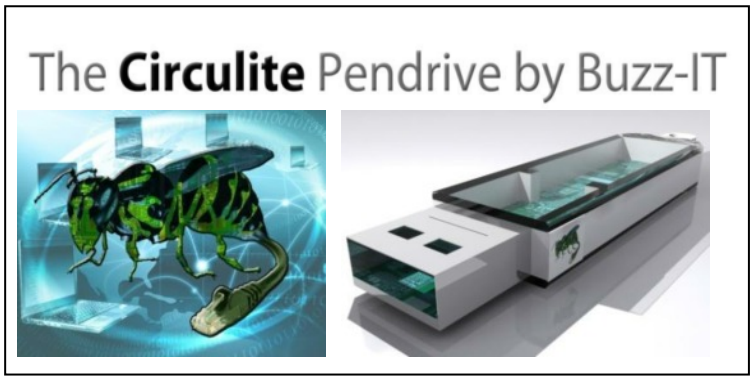
(iii) Image of pendrive – State on DTP edit (do not repeat a previous answer).

Bleed **1**

(b) When setting up the layout the designer used the following DTP features: Grid and Snap to Grid. State one way in which the use of Grid and Snap to Grid benefits the designer.

Easier to structure or Align elements of the page **1**

Parts Box



Street Liner Bus Advert

MARKS

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(c) An alternative design for the street liner is shown below. State the DTP edit which has been applied to all of the text (do not state alignment).

Tilt / Text Path/ Rotate **1**

(d) The graphic designer used a blue colour fill on opposing corners and on the "Circulite" product name. What effect does this create?

Using blue creates depth in the banner **1**

(e) Blue is a receding colour, give an example of an advancing colour.

Red / Orange / Yellow **1**

(f) In graphics we use the term The 3 P's to describe different types of Graphic Communication. The street liner display would fall into the category of Promotional Graphics which is listed as the third P, as shown below. State what the other 2 P's stand for (in the correct order).

1 Preliminary - initial ideas/sketches **1**

2 Production - Working drawings **1**

3 Promotional

Alternative design

Total Marks: 9