

FOR OFFICIAL USE



National  
Qualifications  
SPECIMEN ONLY

Mark

**SQ21/N5/01**

**Graphic  
Communication**

Date — Not applicable

Duration — 1 hour and 30 minutes



Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth

Day

Month

Year

Scottish candidate number

**Total marks — 60**

Attempt ALL questions.

All dimensions are in mm.

All technical sketches and drawings use third angle projection.

You may use rulers, compasses or trammels for measuring.

Use **blue** or **black** ink.

Before leaving the examination room you must give this booklet to the Invigilator.

If you do not, you may lose all the marks for this paper.



1. A graphic designer has produced three promotional layouts.

(a) (i) State one instance where alignment has been used in Layout 1.

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(ii) Describe the effect that alignment has on Layout 1.

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Layout 1

1

1

(b) Describe two ways in which the designer has created unity in Layout 2.

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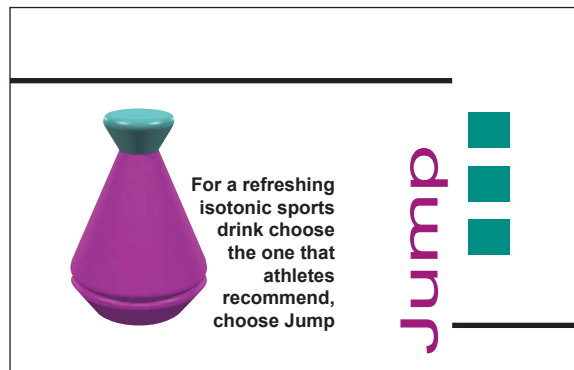
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Layout 2

2

1. (continued)

(c) Describe **two** methods used to create contrast in **Layout 3**.

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Layout 3

2

Early in the design process, the designer decided it was important to move the bottle away from Position 1 to Position 2 as shown below.



Position 1



Position 2

(d) State **one** reason for doing this.

1

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1. (continued)

In the final DTP layout shown opposite, the designer chose **blue** for the background colour.

- (e) (i) State whether blue is an advancing or receding colour. 1

\_\_\_\_\_

- (ii) Describe the effect that the blue background colour has on the bottle. 1

\_\_\_\_\_

The colours used on the bottle itself are shades of red and green. The designer wishes to create a more **harmonious** colour scheme on the bottle and decides to change the red shade to another colour.

- (f) State a **tertiary** colour the designer should try instead of red. 1

\_\_\_\_\_

The ‘Jump’ promotion will be published in a magazine and caring for the environment is important to the magazine publisher.

- (g) State **two** ways in which the publisher can reduce the magazine’s impact on the environment. 2

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Using DTP software to produce a magazine brings many benefits to the publishing industry and its workforce.

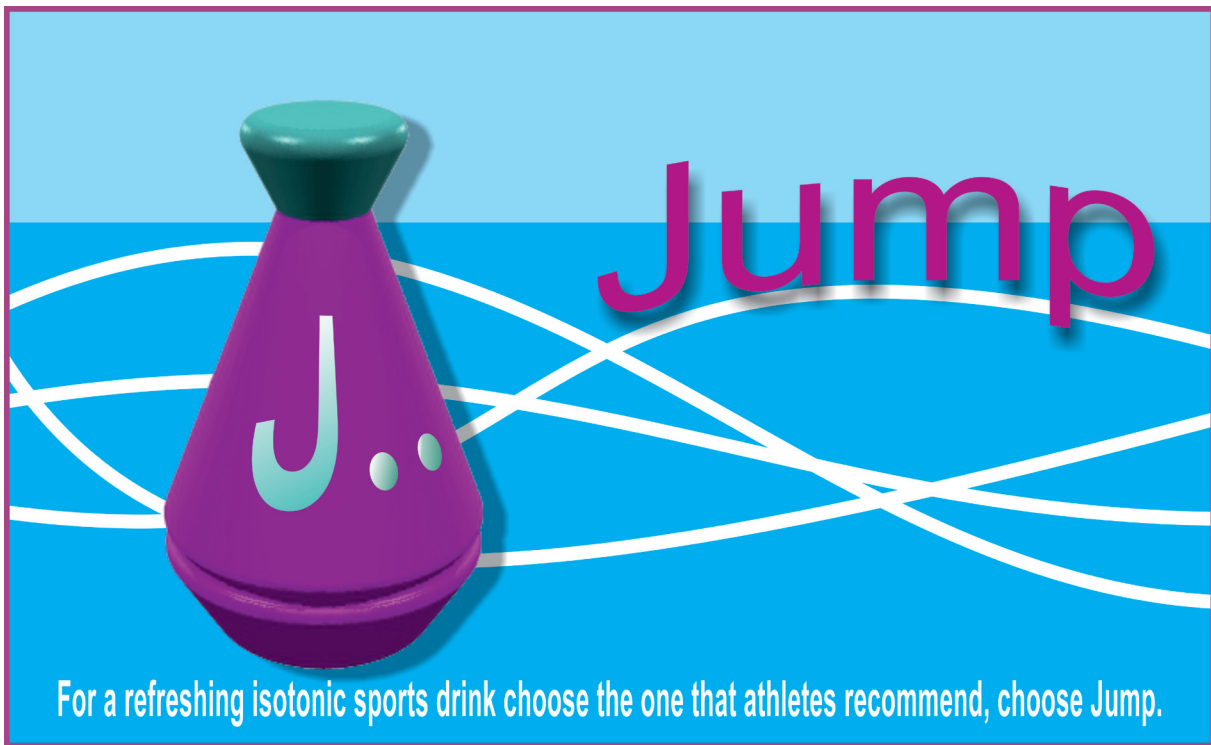
- (h) State **one** benefit that DTP has brought to the publishing industry (other than environmental benefits). 1

\_\_\_\_\_

Total marks 13



1. (continued)



Final layout

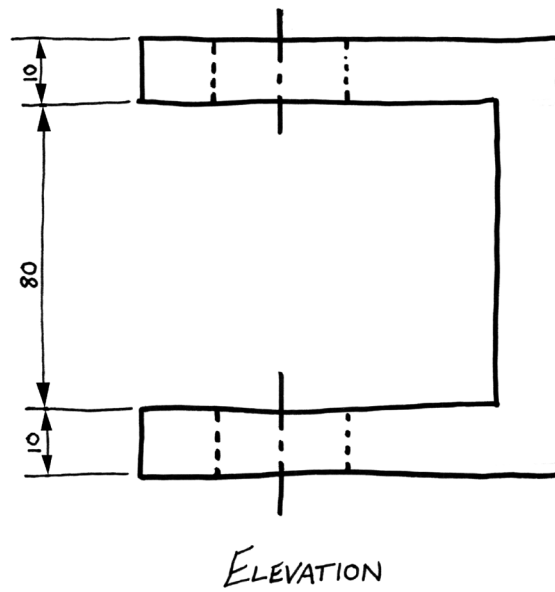
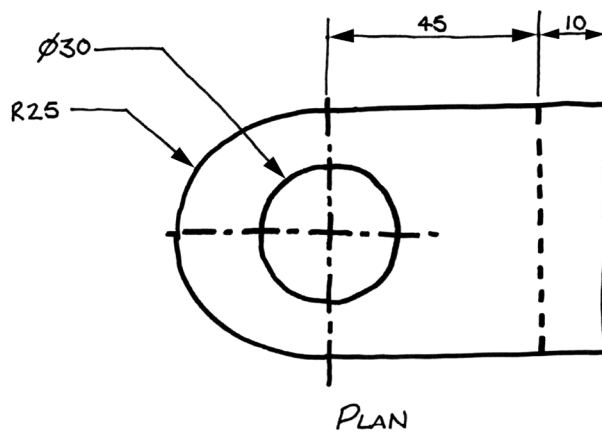


\* S Q 2 1 N 5 0 1 0 5 \*



2. (continued)

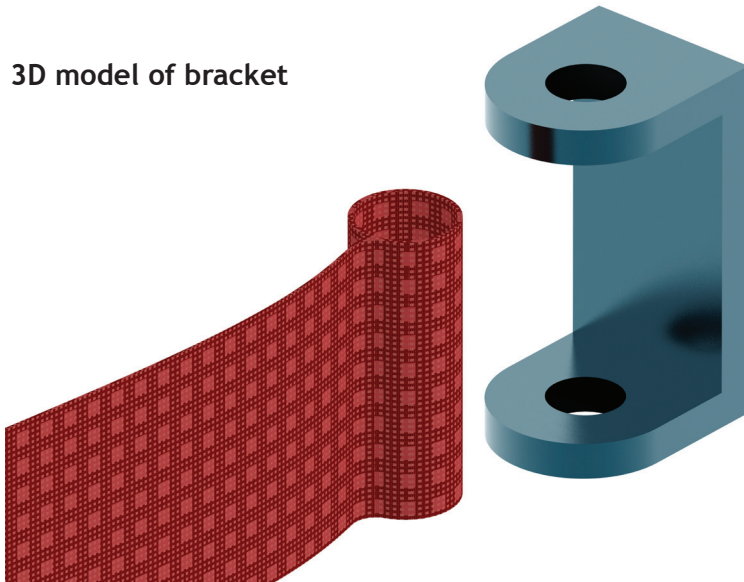
Figure—Preliminary sketch of bracket



2. (continued)

A pin is needed to secure the belt to the bracket. The pin **must not** fall through the bracket. See the figure below.

3D model of bracket



Suggested form for pin

- (c) Describe, with reference to dimensions and CAD modelling terms, how to produce a 3D CAD model of a pin that will secure the belt to the bracket.

You must make reference to the dimensions on the preliminary sketch. A suggested form for the pin is shown above.

You may use sketches to support your answer.

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4



2. (continued)

MARKS

DO NOT  
WRITE IN  
THIS  
MARGIN

An orthographic production drawing is produced from the 3D CAD model as shown below.

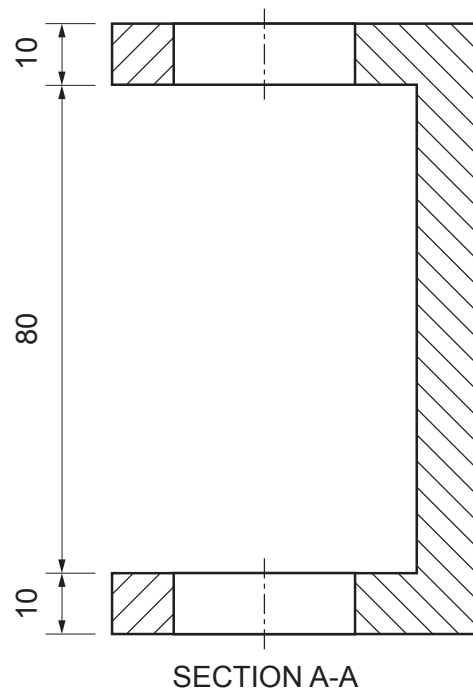
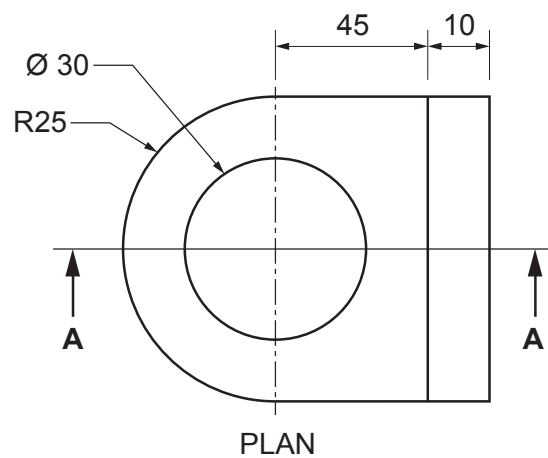
There are errors in the drawing.

(d) State **three** errors in the production drawing.

3

You may annotate the drawing to support your answer.

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_
- (iii) \_\_\_\_\_



Orthographic production drawing of bracket

Total marks 11



3. 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.

6

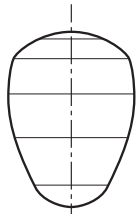
**Orthographic views**

<p><b>A</b></p> <p><input type="checkbox"/></p>	<p><b>B</b></p> <p><input type="checkbox"/></p>	<p><b>C</b></p> <p><input type="checkbox"/></p>
<p><b>D</b></p> <p><input type="checkbox"/></p>	<p><b>E</b></p> <p><input type="checkbox"/></p>	<p><b>F</b></p> <p><input type="checkbox"/></p>

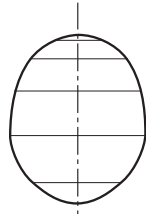


3. (continued)

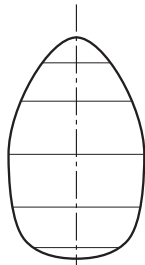
True shapes options



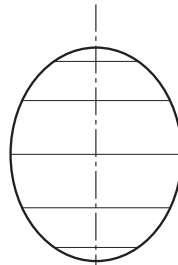
1



2



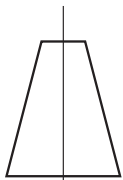
3



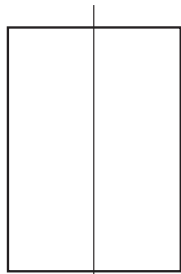
4



5



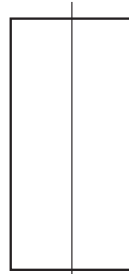
6



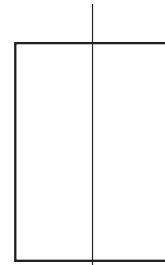
7



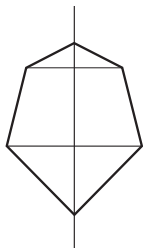
8



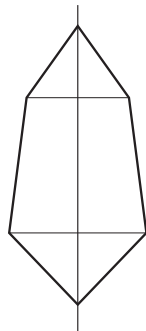
9



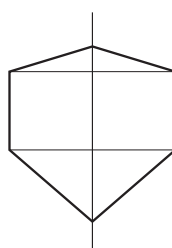
10



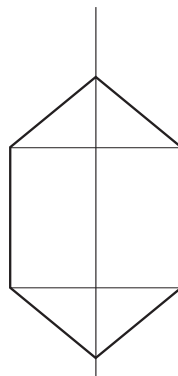
11



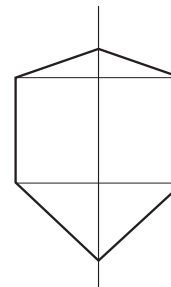
12



13



14



15



\* S Q 2 1 N 5 0 1 1 1 \*

4. A company that makes bicycles is celebrating a successful year. They have excellent sales figures and want to use them to help promote their success.

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.



<b>Sales figures A</b>	
<b>Worldwide bicycle sales by percentage in 2011</b>	
UK Sales	37%
European sales	27%
USA sales	20%
Australian sales	11%
Sales in other countries	5%

<b>Sales figures B</b>	
<b>Monthly bicycle sales in 2011</b>	
Month	Number of sales
Jan	1,600
Feb	1,100
Mar	1,200
Apr	2,600
May	2,200
Jun	3,200
Jul	5,600
Aug	6,900
Sept	2,400
Oct	1,150
Nov	1,100
Dec	9,250

(a) Based on Sales figures A:

(i) state the best type of graph or chart to use when presenting Sales figures A information; 1

\_\_\_\_\_

(ii) state one reason for using this type of graph or chart. 1

\_\_\_\_\_

(b) Based on Sales figures B:

(i) state the best type of graph or chart to show the Sales figures B over the year; 1

\_\_\_\_\_

(ii) state one reason for using this type of graph or chart. 1

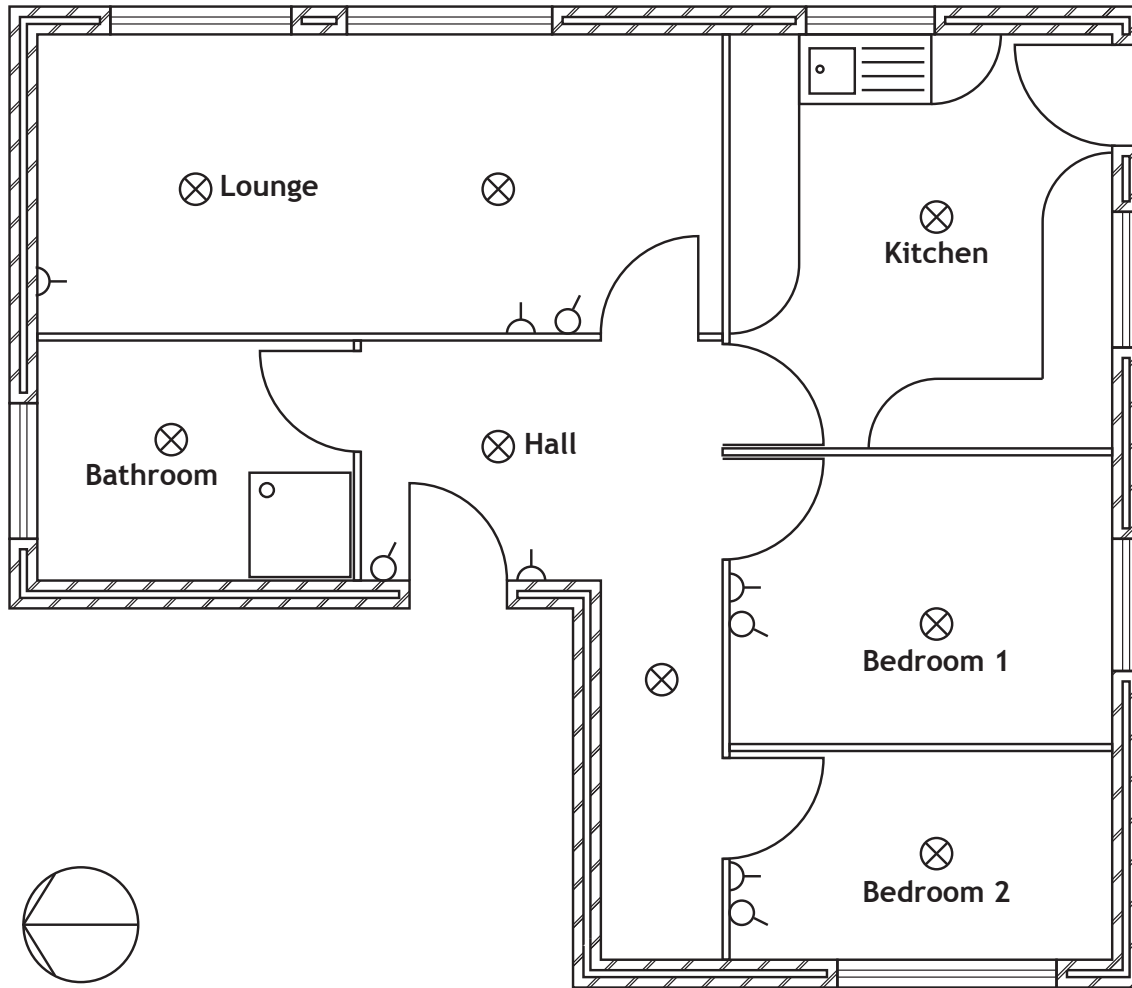
\_\_\_\_\_

Total marks 4

MARKS

DO NOT  
WRITE IN  
THIS  
MARGIN

5. (a) A floor plan with some electrical symbols is shown below.



Floor plan



\* S Q 2 1 N 5 0 1 1 3 \*

5. (a) (continued)

- (i) Identify, by placing an X in the appropriate box, which symbol represents a light switch. 1







- (ii) How many windows face east? 1

\_\_\_\_\_

- (b) All of the symbols shown above are stored in a CAD library.

- (i) State **one** advantage of using a CAD library. 1

\_\_\_\_\_

- (ii) State **one** advantage of using symbols in graphic communication. 1

\_\_\_\_\_

Total marks 4



6. Orthographic CAD drawings for a new door handle assembly are shown below.  
Pictorial views 1 to 5 are given on *Page seventeen*.

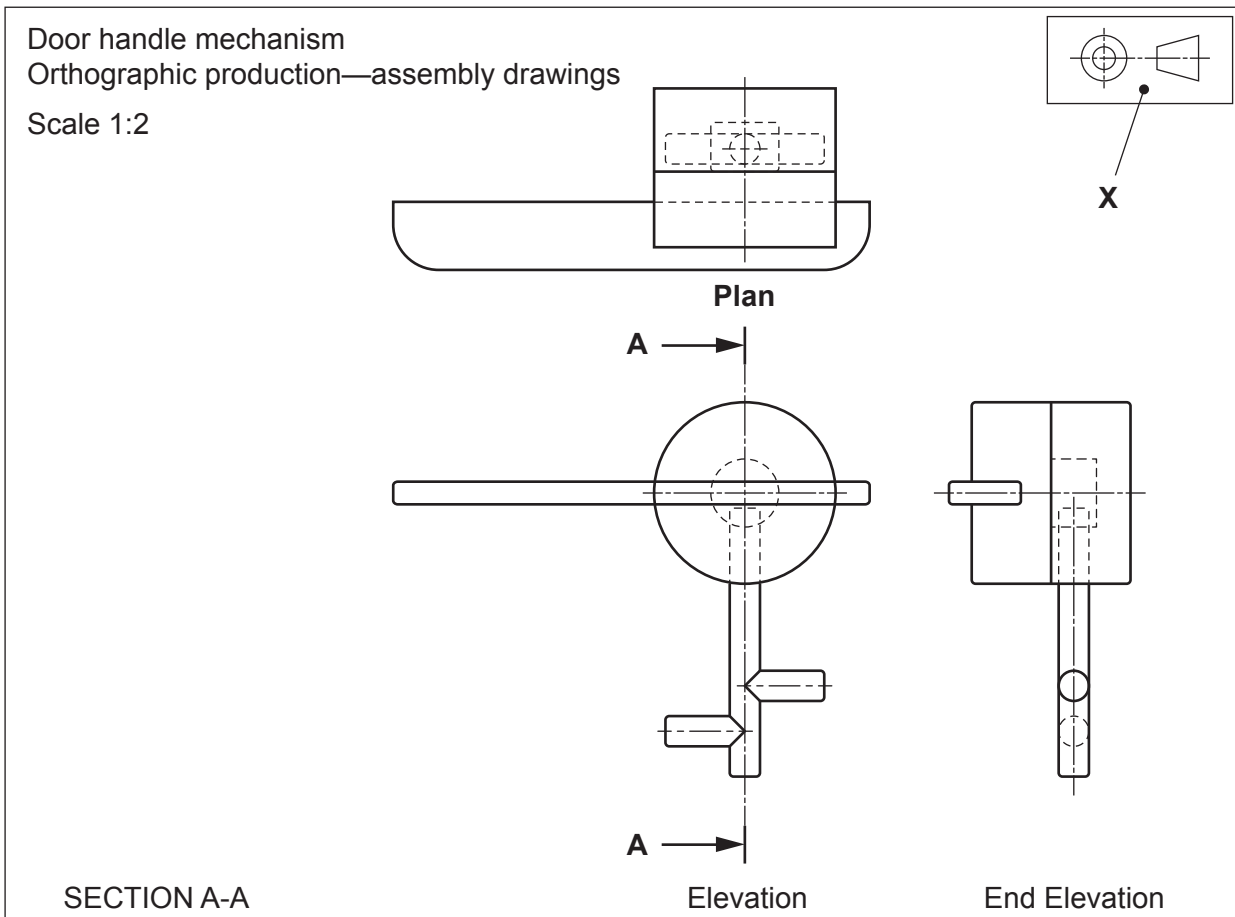
(a) State which pictorial view matches the door handle in the orthographic production assembly drawings. 1

\_\_\_\_\_

Sectional views 6 to 9 are given on *Page seventeen*.

(b) State the correct sectional view for section A-A on the orthographic views. 1

\_\_\_\_\_



(c) Explain what scale 1:2 means. 1

\_\_\_\_\_

6. (continued)

Dimensions are **not** normally added to orthographic **assembly** drawings.

- (d) State the type of orthographic production drawings that will normally include dimensions.

1

\_\_\_\_\_

Sectional drawings are shown opposite.

- (e) State **one** benefit of using a sectional drawing in relation to this door handle.

1

\_\_\_\_\_

- (f) State the name of the symbol shown at X.

1

\_\_\_\_\_

- (g) Describe the purpose of the symbol shown at X.

1

\_\_\_\_\_  
\_\_\_\_\_

- (h) State where on orthographic drawings, the information “All sizes in mm” would be found.

1

\_\_\_\_\_

**Total marks 8**

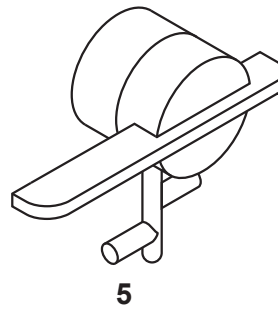
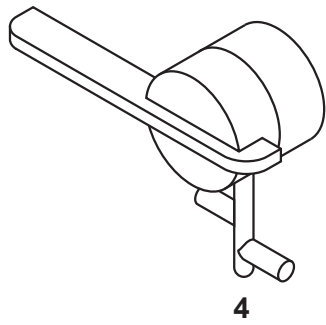
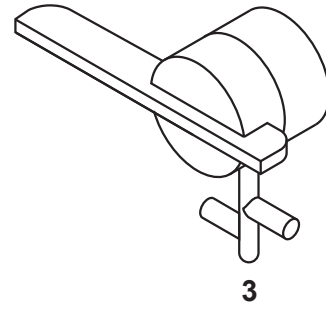
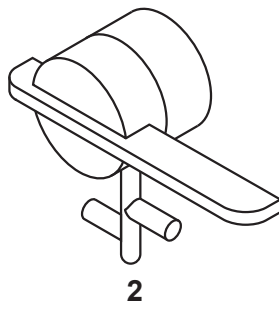
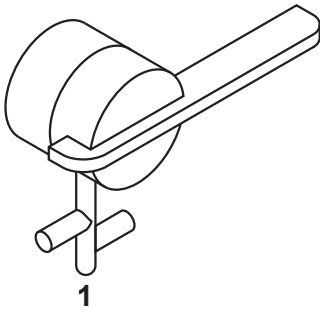




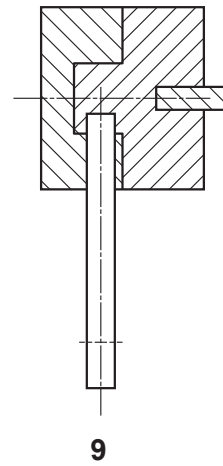
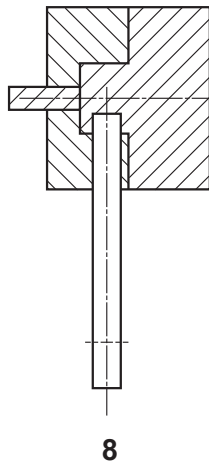
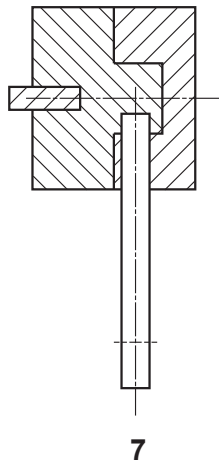
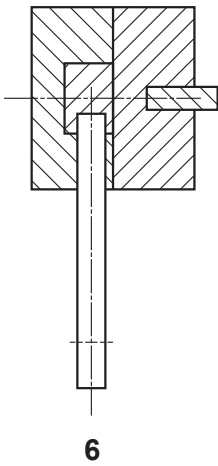
6. (continued)

MARKS  
DO NOT  
WRITE IN  
THIS  
MARGIN

Pictorial views



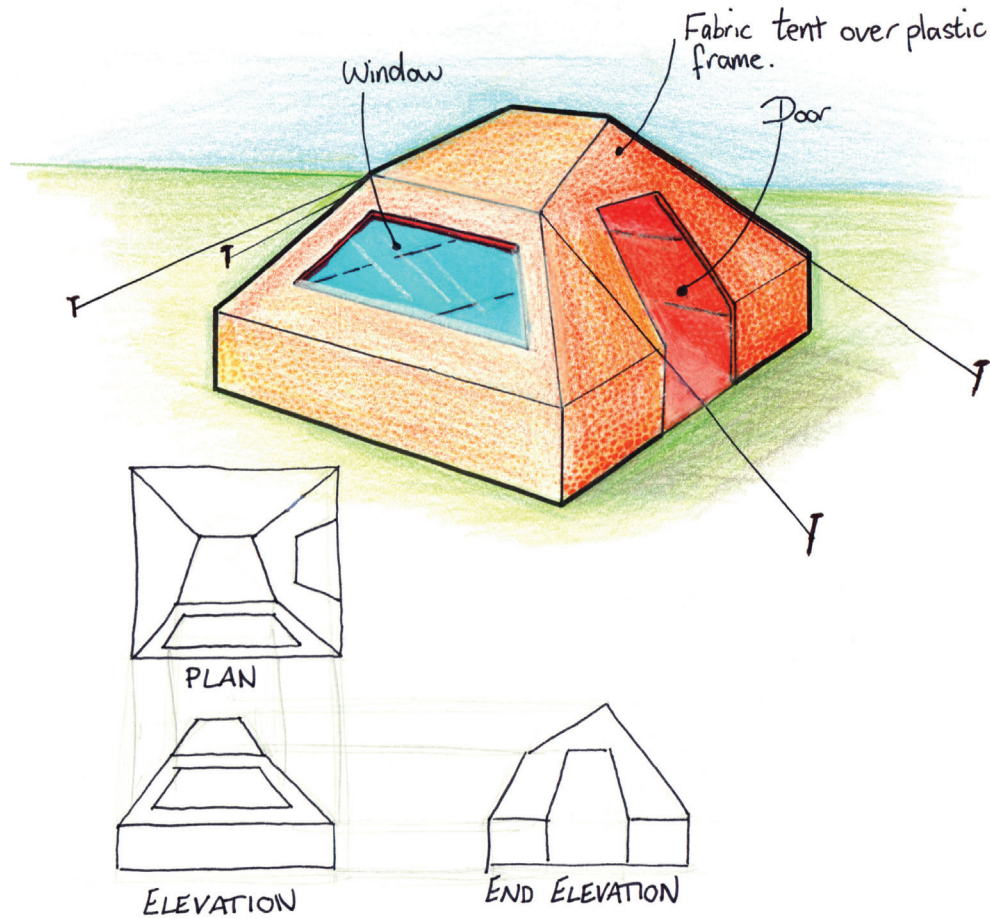
Sectional views



\* S Q 2 1 N 5 0 1 1 7 \*

7. An outdoor supplies company is designing a range of tents for young people to take to music festivals. One of their designers has made preliminary pictorial and orthographic sketches for a possible new tent as shown below.

Preliminary pictorial sketch of festival tent



Preliminary orthographic sketch of festival tent



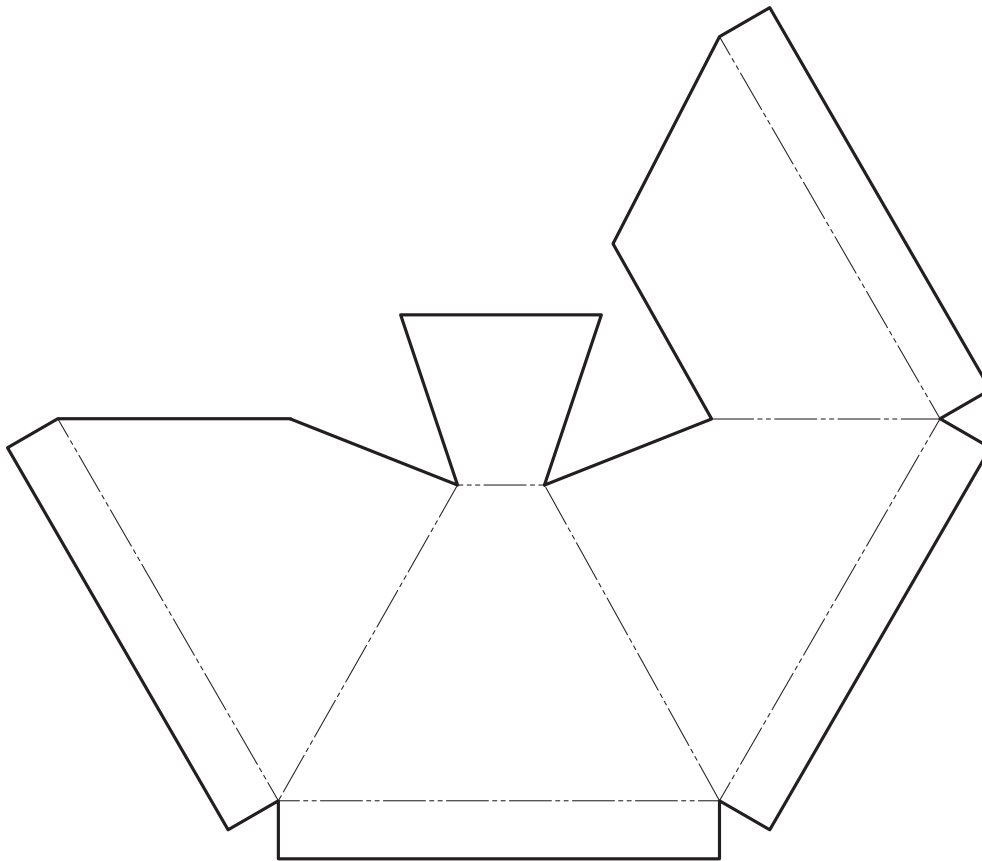
\* S Q 2 1 N 5 0 1 1 8 \*

7. (continued)

The tent fabric is made from a single sheet. A surface development showing the **outer surface** of the tent fabric is shown below.

(a) Indicate on the surface development below, the location of:

- (i) the window—using the letter “W”; 1
- (ii) the door—using the letter “D”. 1

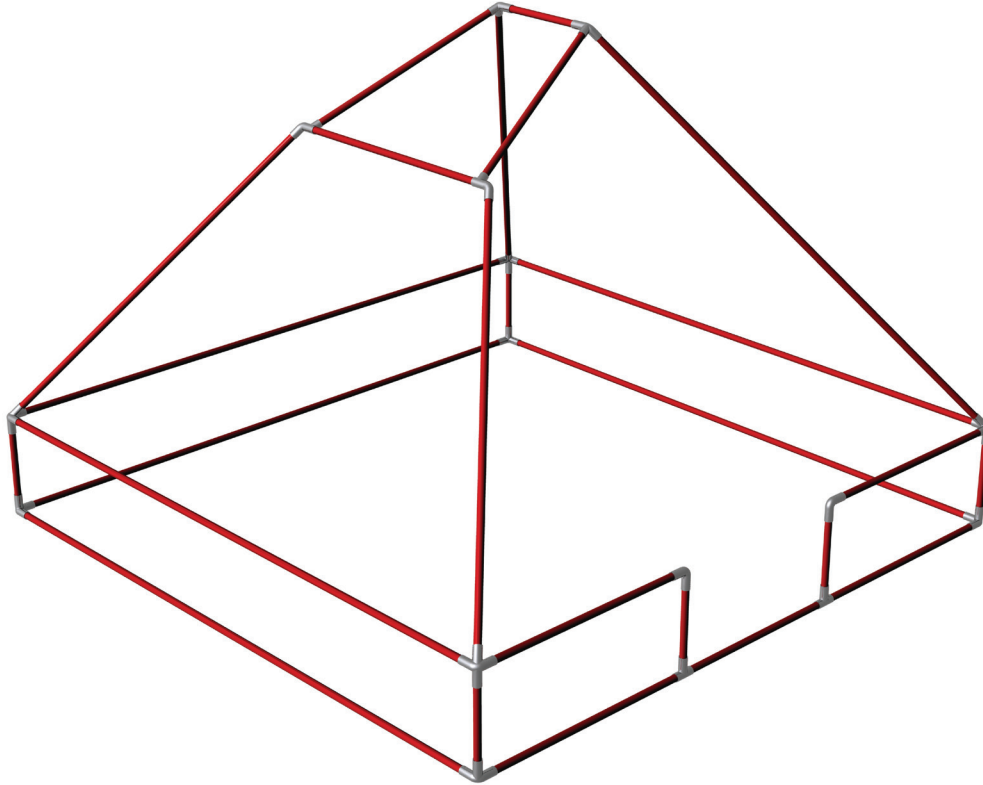


Surface development of tent fabric



7. (continued)

A plastic frame is used to support the tent fabric.  
The frame is made from tubing and connecting brackets.



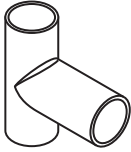
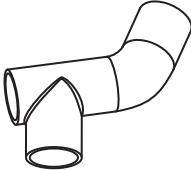
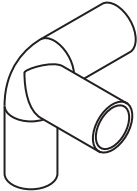
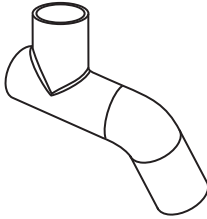
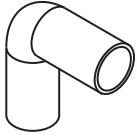
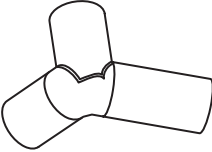
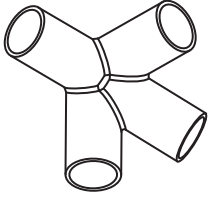
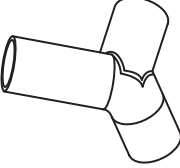
Connecting bracket and tubing for frame

7. (continued)

An incomplete parts list of brackets has been provided below.

(b) State, in the table below, the quantity of each type of connecting bracket required to assemble the frame.

4

	Part	Quantity		Part	Quantity
Bracket 1		_____	Bracket 5		<u>  1  </u>
Bracket 2		_____	Bracket 6		<u>  1  </u>
Bracket 3		_____	Bracket 7		<u>  1  </u>
Bracket 4		_____	Bracket 8		<u>  1  </u>

Total Marks 6

8. A poster promoting “Clara”, a women’s perfume, is shown on the facing page. The text and the images used in the poster are laid out in their original form at the top of the page.

The final poster layout, (bottom of the page), promotes the perfume.

The original graphics and text were edited in a DTP package before being placed in the final layout.

(a) State the name of the DTP editing feature applied to each of the original items to get them ready for use in the final layout.

Do not include “**scaling** or **resizing**” in your answer.

Ensure you do not use the same answer twice.

(i) **Photograph of the model**—state **one** DTP edit. 1

Edit \_\_\_\_\_

(ii) **Perfume bottle**—state **one** DTP edit. 1

Edit \_\_\_\_\_

(iii) **“Clara” product name**—state **one** DTP edit. 1

Edit \_\_\_\_\_

(iv) **Slogan**—state **one** DTP edit (do not repeat a previous answer). 1

Edit \_\_\_\_\_

(v) **Flashbar**—state **one** DTP edit. 1

Edit \_\_\_\_\_

(b) State **one** way in which the final layout of the slogan improves the promotional poster. 1

\_\_\_\_\_  
\_\_\_\_\_

(c) When setting up the layout the designer used the following DTP features: **Grid** and **Snap to grid**.

State **two** ways in which the use of **Grid** and **Snap to grid** benefit the graphic designer. 2

\_\_\_\_\_  
\_\_\_\_\_

Total marks 8



8. (continued)

Text and images for final layout

Flashbar



Box



Photograph of model



Slogan—

For the busy woman who needs her fragrance to last all day

Product name

# Clara



Perfume bottle

Skyline silhouette



Final layout



[END OF SPECIMEN QUESTION PAPER]





National  
Qualifications  
SPECIMEN ONLY

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**SQ21/N5/01**

**Graphic  
Communication**

## Marking Instructions

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These Marking Instructions have been provided to show how SQA would mark this Specimen Question Paper.

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## Part One: General Marking Principles for National 5 Graphic Communication

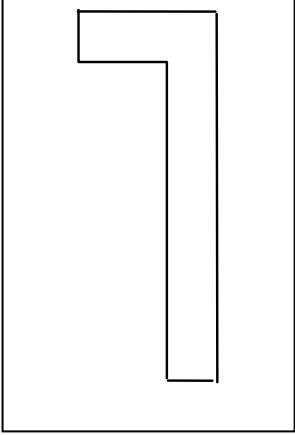
*This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this Paper. These principles must be read in conjunction with the specific Marking Instructions for each question. The marking schemes are written to assist in determining the “minimal acceptable answer” rather than listing every possible correct and incorrect answer.*

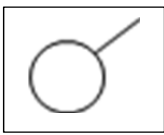
- (a) Marks for each candidate response must always be assigned in line with these General Marking Principles and the specific Marking Instructions for the relevant question.
- (b) Marking should always be positive, ie marks should be awarded for what is correct and not deducted for errors or omissions.

## Part Two: Marking Instructions for each question

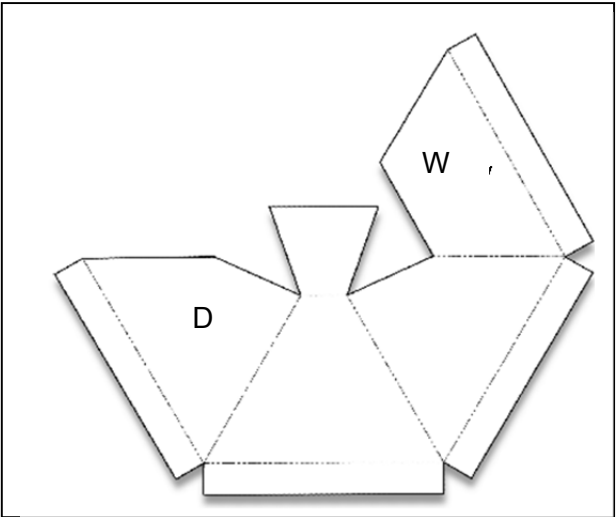
Question			Expected response	Max mark
1	a	i	Any one answer which states clearly where alignment has been used, such as: <ul style="list-style-type: none"><li>• White text and product name</li><li>• Product name and bottle top</li><li>• Black line and white text</li><li>• Black line and product name</li><li>• Black line and bottle top</li></ul>	1
1	a	ii	Any one answer which describes the effect of alignment on Layout 1, for example: <ul style="list-style-type: none"><li>• It helps organise the layout</li><li>• Gives it a structure</li><li>• Makes it easier to read/follow</li><li>• Helps unify the layout</li></ul>	1
1	b		Any two simple descriptions which indicate an understanding of unity, for example: <ul style="list-style-type: none"><li>• The same colour in the bottle top and green boxes</li><li>• Wrapping text around the bottle containing the graphics and text</li></ul> (One mark per correct description given up to two marks)	2

1	c		<p>Any two simple descriptions which indicate an understanding of contrast in the context of Layout 3, for example by:</p> <ul style="list-style-type: none"> <li>• Using green and purple/violet in the layout</li> <li>• Using vertical and horizontal elements</li> <li>• Creating depth(near and far)</li> <li>• Using wavy and straight lines</li> <li>• Using light and dark tones</li> </ul> <p>(One mark per correct description given up to two marks)</p>	2
1	d		<p>Any one logical statement in the context of the question, for example:</p> <ul style="list-style-type: none"> <li>• To create a more usable space to the right</li> <li>• To make room for text</li> <li>• To make use of the 'Rule of thirds' in the layout</li> <li>• To create an asymmetric balance</li> <li>• To create an off centre focal point</li> </ul>	1
1	e	i	Receding colour	1
1	e	ii	<p>Any one clear description of the effect, for example:</p> <ul style="list-style-type: none"> <li>• It makes the bottle stand out</li> <li>• It pushes the bottle forward</li> </ul>	1
1	f		<ul style="list-style-type: none"> <li>• Blue-green or</li> <li>• Green-yellow</li> </ul>	1
1	g		<p>Any two clear statements which show a reduction of impact, such as:</p> <ul style="list-style-type: none"> <li>• Use recycled paper</li> <li>• Publish online, allowing some of the workforce to work from home</li> <li>• Use environmentally-friendly inks</li> <li>• Print in regional offices to minimise carbon footprint of transportation</li> <li>• Switch off computers</li> </ul> <p>(One mark per correct statement given up to two marks)</p>	2
1	h		<p>Any one logical benefit from DTP, for example:</p> <ul style="list-style-type: none"> <li>• Improved speed and accuracy of production</li> <li>• Images can be easily modified</li> <li>• Layouts and files can be sent long distances for approval</li> <li>• Modifications can be made easily and quickly</li> <li>• DTP users can work from home</li> <li>• Easy of communication with client</li> </ul>	1

2	a	50 mm	1
2	b	<p>Any logical description which includes relevant dimensions, for example:</p> <ul style="list-style-type: none"> <li>• Make a sketch on the top face or a work plane parallel to the top and bottom surfaces</li> <li>• Draw a circle of 30 mm diameter (or 15 mm radius)</li> <li>• Subtract</li> </ul> <p>Any suitable alternative answer Using a 'hole' command is not valid, as it is platform specific feature</p>	3
2	c	<p>Any logical description for a revolved solid OR a double extrusion which includes relevant commands and processes up to four marks.</p> <p>As a revolved solid:</p> <p style="padding-left: 40px;">Draw a profile similar to below and revolve as long as following criteria are met:</p> <ul style="list-style-type: none"> <li>• Pin shaft length must be greater than 90 mm (one mark)</li> <li>• Candidate must make reference to the pin diameter (&lt;30 mm) (one mark)</li> <li>• Candidate must make reference to the pin head diameter (&gt;30 mm) (one mark)</li> <li>• Selecting the centre axis of the profile and revolving (one mark)</li> </ul> <div style="text-align: center; margin: 10px 0;">  </div> <p>As a double extrusion:</p> <ul style="list-style-type: none"> <li>• Draw a circle for pin shaft with diameter (&lt;30 mm) or radius (&lt;15 mm) (one mark)</li> <li>• Extrude (&gt;90 mm) (one mark)</li> <li>• Create a new sketch on a face of the extruded cylinder (one mark)</li> <li>• Draw a circle diameter (&gt;30 mm) and extrude (one mark)</li> </ul> <p>Or any similar and appropriate process</p>	4

2	d		<ul style="list-style-type: none"> <li>The hidden detail line on the plan view is the wrong line type</li> <li>The cutting plane line type is incorrect</li> <li>The hatch markings on the sectional view are opposing/should be the same</li> </ul> <p>(One mark per correct answer up to three marks)</p>	3
3	a-f		<p>2, 4, 6 (cut forms top left to top right)  7, 14, 11 (cut forms bottom left to bottom right)</p> <p>(One mark per correct answer up to six marks)</p>	
4	a	i	Pie chart/pie graph	1
4	a	ii	<p>The data is in percentages/the data represents a whole figure</p> <p>Where a candidate has used the incorrect chart type in question 4(a)(i) and the reason they give is appropriate, then a mark should be awarded.</p>	1
4	b	i	Line graph or bar chart	1
4	b	ii	<ul style="list-style-type: none"> <li>Line graph: the data has a time component, base or axis/it is important to show the trend or flow of figures</li> <li>Bar chart: a comparison between sales in individual months can be shown</li> </ul> <p>Where a candidate has used the incorrect chart type in question 4(b)(i) and the reason they give is appropriate, then a mark should be awarded.</p>	1
5	a	i		1
5	a	ii	Three windows face east	1
5	b	i	<p>Any one clear statement of an advantage of a CAD library for example:</p> <ul style="list-style-type: none"> <li>Symbols do not have to be re-drawn</li> <li>Saves time</li> <li>Standard symbols for all users means consistency</li> </ul>	1
5	b	ii	<p>Any one clear statement of an advantage of symbols for example:</p> <ul style="list-style-type: none"> <li>Internationally recognised</li> <li>Reduced drawing time</li> <li>Simple to understand</li> </ul>	1

6	a	View 5	1
6	b	Sectional view 9	1
6	c	Any <b>one</b> clear explanation of what scale 1:2 means, for example: <ul style="list-style-type: none"> <li>• Drawn half actual size</li> <li>• Actual item is double size of drawing</li> </ul>	1
6	d	Component or part drawings (or anything similar)	1
6	e	Any <b>one</b> benefit of the use of sectional drawings relating to the door handle, such as: <ul style="list-style-type: none"> <li>• The manufacturer is able to determine what the inside of the item will look like</li> <li>• Helps with manufacturing</li> <li>• Helps to understand the components</li> <li>• Helps to understand how it assembles/shows how parts go together</li> </ul>	1
6	f	Third angle projection symbol	1
6	g	Any <b>one</b> description of the correct purpose of the third angle symbol, for example: <ul style="list-style-type: none"> <li>• Allows the reader to understand from which direction the views are projected</li> <li>• To explain the layout of the drawing or the views</li> </ul>	1
6	h	Any <b>one</b> correct location statement, such as: <ul style="list-style-type: none"> <li>• In the title block/information bar</li> <li>• Block or box</li> </ul>	1

7	a	i-ii	 <p>(One mark per correct location)</p>	2
7	b		<ul style="list-style-type: none"> <li>• Bracket 1-2</li> <li>• Bracket 2-4</li> <li>• Bracket 3-2</li> <li>• Bracket 4-4</li> </ul> <p>(One mark per correct answer up to four)</p>	4
8	a	i	<p>Any one statement which demonstrates cropping, for example:</p> <ul style="list-style-type: none"> <li>• Fully cropped</li> <li>• Image cut out</li> <li>• Irregular crop</li> <li>• Cropped</li> </ul>	1
8	a	ii	Drop shadow added	1
8	a	iii	<p>Any one statement which demonstrates an alteration to the font/word, for example:</p> <ul style="list-style-type: none"> <li>• Change font style</li> <li>• Typeface</li> <li>• Reverse</li> <li>• Tilted</li> <li>• Rotated</li> </ul>	1
8	a	iv	<p>Any one edit to the slogan, such as:</p> <ul style="list-style-type: none"> <li>• Flow text along a path</li> <li>• Flow text</li> <li>• Reverse</li> </ul>	1

8	a	v	Transparency	1
8	b		<p>Any one statement, such as:</p> <ul style="list-style-type: none"> <li>• Creates the impression of movement</li> <li>• Creates rhythm</li> <li>• Creates contrast</li> <li>• Makes it legible</li> <li>• Allows more text to fit the space</li> </ul>	1
8	c		<p>Any two statements, such as:</p> <ul style="list-style-type: none"> <li>• Creates a structure to work on</li> <li>• Helps create a structure in the layout</li> <li>• Improves accuracy</li> <li>• Helps aid alignment</li> <li>• Improves speed of production</li> </ul> <p>(Or similar)</p>	2

Total Marks 60

[END OF SPECIMEN MARKING INSTRUCTIONS]