

Surname						Other Names					
Centre Number						Candidate Number					
Candidate Signature											

For Examiner's Use

General Certificate of Secondary Education
June 2007

**DESIGN AND TECHNOLOGY
(GRAPHIC PRODUCTS) (SHORT COURSE)
Written Paper
Higher Tier**

**3553/H
H**



Tuesday 5 June 2007 1.30 pm to 3.00 pm

For this paper you must have:

- a pen, a pencil, a ruler, an eraser, a pencil sharpener and coloured pencils.

You may also use marker pens and 45/60 degree set squares.

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- Answer the questions in the spaces provided.
- Show the working of your calculations.
- Detach the blue sheet from the back of this examination paper to use in between the sheets to prevent ink bleeding through to the next sheet.
- Do **not** hand in the blue sheet at the end of the examination.

Information

- The maximum mark for this paper is 100.
- The marks for questions are shown in brackets.
- All dimensions are given in millimetres unless otherwise stated.
- You are reminded of the need for good English and clear presentation in your answers.

Advice

- You are advised to answer the questions in this paper in the order in which they are written.

For Examiner's Use			
Question	Mark	Question	Mark
1		5	
2		6	
3		7	
4			
Total (Column 1)		→	
Total (Column 2)		→	
TOTAL			
Examiner's Initials			

This question is about marketing and product analysis and is worth 9 marks.

You are advised to spend about 7 minutes on this question.

1 AQA is to market a range of low cost *disposable* mobile phones which can be *used in an emergency*.

They will have a limited range of functions including calling home, calling a friend and contacting the emergency services.








The phones’ main users will be teenagers who are at school, university students, or young people living away from home.

Several mobile phones were investigated and analysed.

The results are presented in the table below.

Complete **Table 1** by adding your comments in the appropriate spaces.

Table 1


Mobile phones	Typical user / buyer	An aesthetic feature of the phone	Function symbols on box
<div>A <i>value</i> phone</div> <div></div>	<div>The user of this <i>value</i> phone is likely to be . . .</div> <div><i>An elderly person</i></div>	<div>This phone has the following aesthetic feature:</div> <div><i>A silver metallic finish</i></div>	<div><div>TXT</div>(a)</div> <div>.....</div> <div><div></div>(b)</div> <div>.....</div>
<div>A <i>fashion</i> phone</div> <div></div>	<div>The user of this <i>fashion</i> phone is likely to be . . .</div> <div>.....</div>	<div>This phone has the following aesthetic feature:</div> <div>.....</div> <div>.....</div> <div>.....</div>	<div><div></div>(c)</div> <div>.....</div> <div><div></div>(d)</div> <div>.....</div>
<div>A <i>disposable</i> phone</div> <div></div>	<div>The user of this <i>disposable</i> phone is likely to be . . .</div> <div>.....</div>	<div>This phone has the following aesthetic feature:</div> <div>.....</div> <div>.....</div> <div>.....</div>	<div><div>999</div>(e)</div> <div>.....</div> <div><div></div><i>Has an alarm fitted</i></div>

(9 marks)

This question is about lighting effects and Computer Aided Design (CAD) and is worth 18 marks.

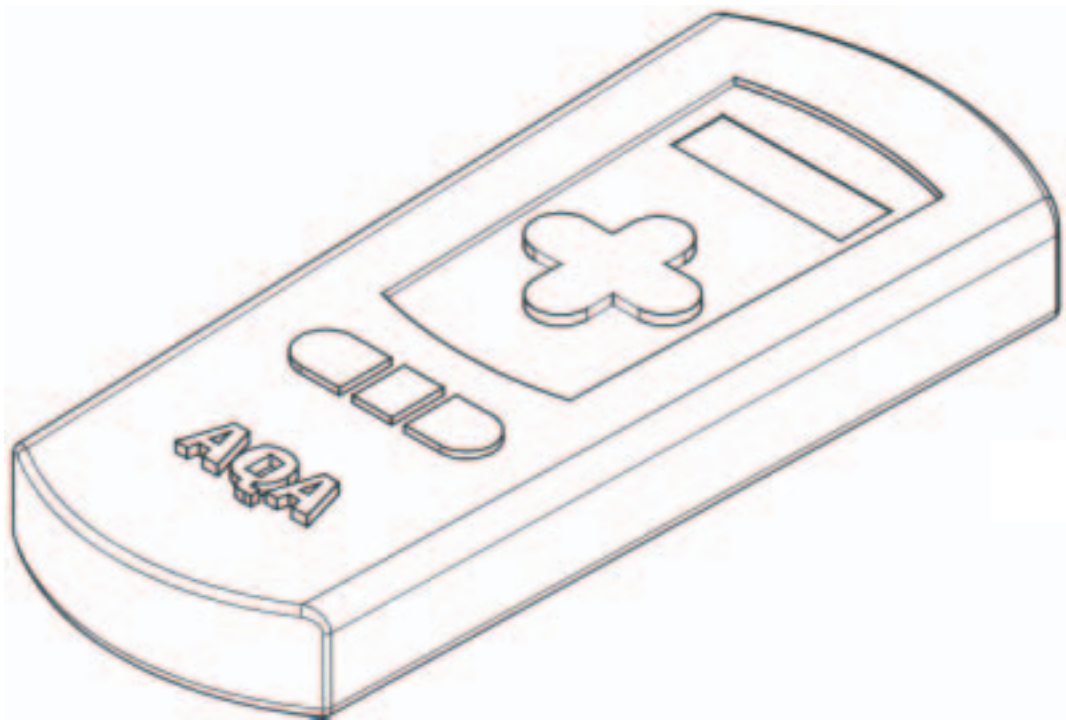
You are advised to spend about 15 minutes on this question.

2 A pictorial drawing of a mobile phone is given in **Figure 1**.

- (a) (i) Use the following symbol  to represent a light source, indicating where you would place the light source when rendering the pictorial drawing of the mobile phone in **Figure 1**. (1 mark)
- (ii) Render the pictorial drawing of the mobile phone (**Figure 1**) taking into account the position of *your* light source. (6 marks)

Do **not** add extra text or other details.

Figure 1



(b) The mobile phone could be rendered using a CAD software package.

Drawing programs use symbols or icons to represent drawing and colouring tools.

Three icons are shown in **Table 2**.


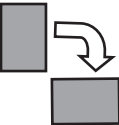
- (i) Give the meanings of the icons and explain their use.

Icon number 1 has been started for you. (8 marks)

- (ii) For number 4, design an icon that represents the *print* command.

Use the sketching space to develop a suitable design. (3 marks)

Table 2

Number	Icon	Meaning	Use
1		Zoom in
2	
3	ABC
4		Print	When selected, sends the screen image to the printer

Sketching space

This question is about letter styles and is worth 10 marks.

You are advised to spend about 8 minutes on this question.

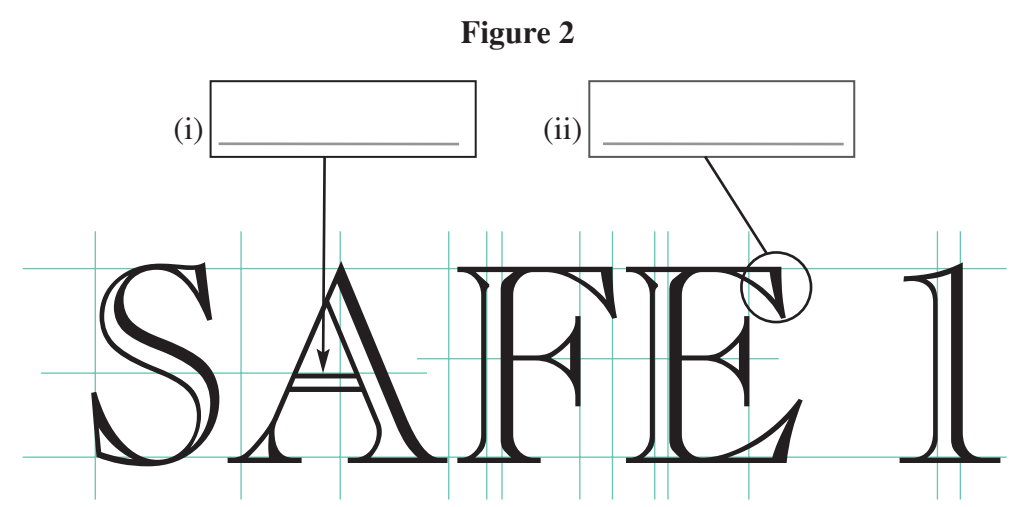
3 (a) AQA have decided to package the mobile phone in a box.

The name of the phone is SAFE 1.

This name will be printed on the lid of the box.

Name the **two** parts of the letters indicated in **Figure 2**. Choose from the following list.

Bar	Curve	Serif	Stem
-----	-------	-------	------



(2 marks)

(b) The name ‘SAFE 1’ will be printed on the lid of the box.

A typical letter style is shown in **Figure 3**.

(i) In **Figure 3**, sketch **two** different styles for the letter **S** in the spaces provided.

Use only upper case (capital) letters.

Your preferred letter style will be used in Question 5. (5 marks)

Figure 3

Example	Letter style 1	Letter style 2

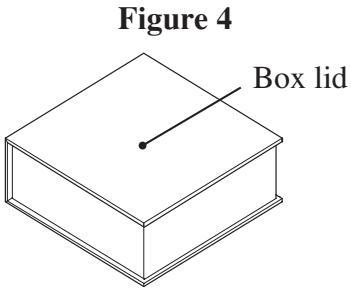
(ii) My preferred letter style is number:

Explain why this is your preferred letter style.

(3 marks)

This question is about development of ideas and is worth 16 marks.

You are advised to spend about 15 minutes on this question.



4 The mobile phone is to be packaged in a box (**Figure 4**).

The box lid is to be decorated with images on the theme of *emergency use*.

(a) Sketch a range of different images on the theme of *emergency use* in the space below (**Figure 5**).

Marks will be awarded for:

- (i) sketching a range of different images on the given theme, (3 marks)
- (ii) indicating colour, (2 marks)
- (iii) adding notes to explain your ideas. (3 marks)

Figure 5

Range of different images based on the theme *emergency use*, indicating colours used.
Add notes to explain your ideas.

(b) Develop your best image from part (a) into a final design in the space below (**Figure 6**).

Clearly show the changes and modifications you make.

Marks will be awarded for:

- (i) the image taken forward from part (a), (1 mark)
- (ii) the development of the image into a final design, (4 marks)
- (iii) evaluating the changes. (3 marks)

Figure 6

Develop your best image from part (a) into a final design.
(This final design will be required in Question 5.)

BEST IMAGE
TAKEN
FORWARD

Evaluation of changes

.....

.....

.....

.....

This question is about layouts and presentation drawings and is worth 13 marks.

You are advised to spend about 15 minutes on this question.

5 The mobile phone is to be packaged in a box (**Figure 7**).

- (a) Using the specification given in **Figure 8**, sketch a suitable layout for a box lid design in **Figure 10**.

Use simple shapes to represent the areas covered by the features given in the specification.

(4 marks)

Figure 7

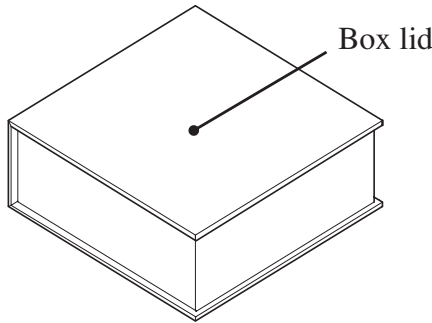


Figure 8

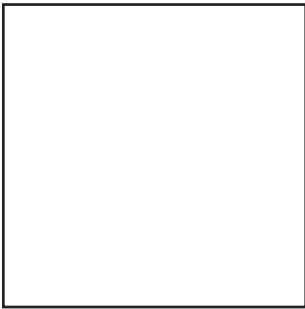
Specification for box lid design

- Emergency use image (From **Question 4**)
- The letter style of the product's name, SAFE 1 (From **Question 3**)
- AQA logo (**Figure 9**)

Apply
specification

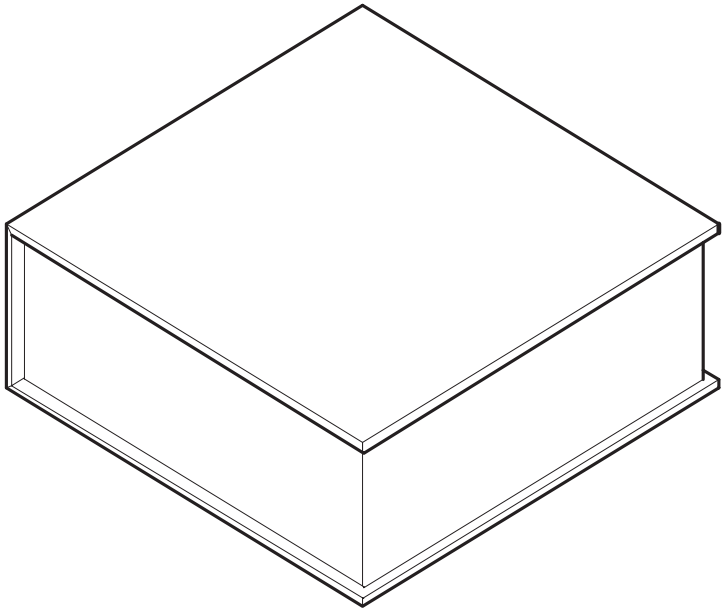
Figure 10

**Sketch of layout for
box lid design**



Layout
design

Figure 11



- (b) Produce a coloured presentation drawing for your box lid design on **Figure 11**, using your ideas from Questions 3, 4 and 5 part (a).

Marks will be awarded for:

- (i) line quality, (2 marks)
- (ii) quality of colouring, (4 marks)
- (iii) quality of layout. (3 marks)

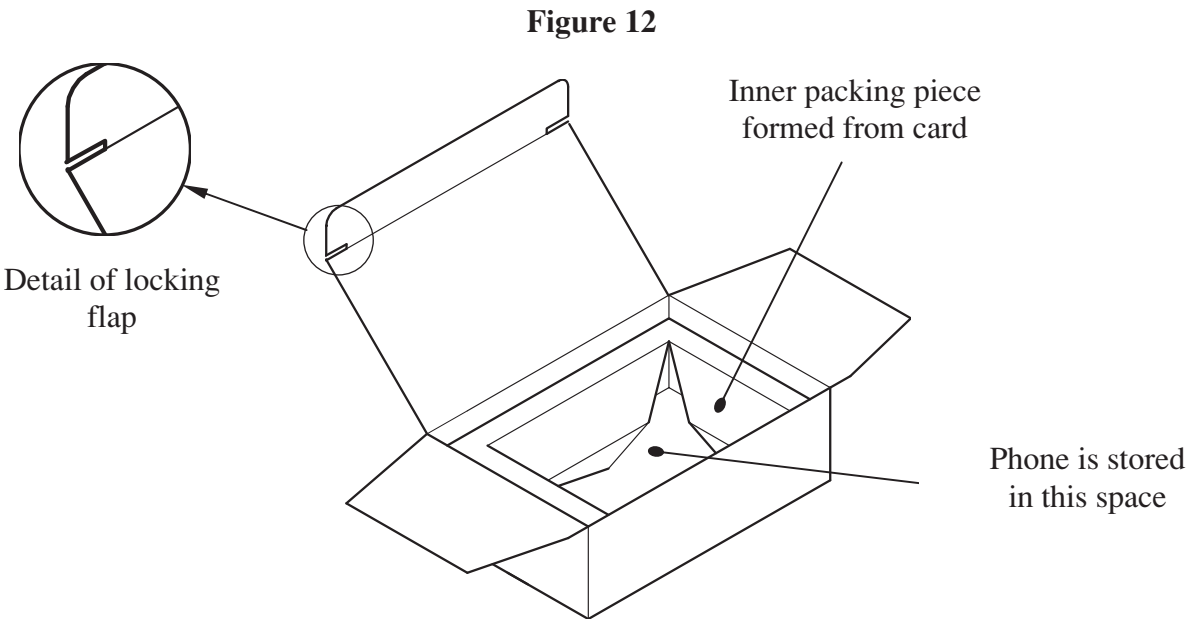
Figure 9



This question is about materials and components and is worth 15 marks.

You are advised to spend about 15 minutes on this question.

6 A different package for another mobile phone is shown in **Figure 12**.



(a) When closed the lid is locked into position.

With notes and sketches explain how the lid is securely locked closed.

(5 marks)

(b) A pictorial drawing of the inner packing piece is shown in **Figure 13**.

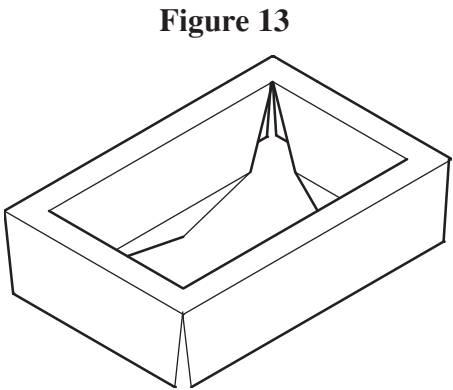
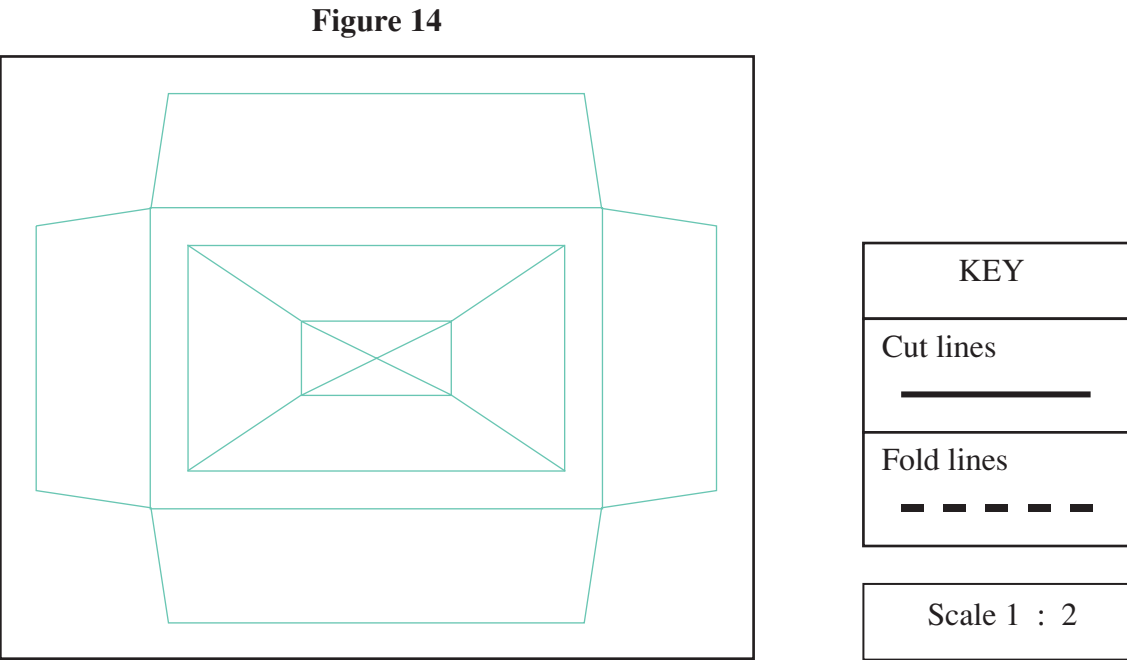


Figure 14 shows a *half full size* surface development (net) of the packing piece marked out on card.

Using the given key, line-in the following on **Figure 14**:

- (i) all lines to be cut,
- (ii) lines to be folded.

(6 marks)



(c) Using British Standards, add dimensions to the length and width of the card.

(4 marks)

This question is about Cultural, Social and Environmental Issues and is worth 19 marks.

You are advised to spend about 15 minutes on this question.

7 Most mobile phones are powered by rechargeable batteries.

(a) Information about the disposal of batteries can be given in the form of signs and symbols.

Complete **Table 3** by giving the meaning of each sign or symbol and explain the environmental reason for it.

Table 3

Sign or Symbol	Meaning	Environmental Reason
Red triangle with jagged arrow inside.	<i>Warning, danger of electric shock</i>	<i>Device contains electrical energy that could injure if touched</i>
Wheelie bin with red cross through.
Black flame with red cross through.

Due to copyright issues, the three symbols above have been removed for electronic publication. (8 marks)

(b) **Figure 15** is a European Community symbol found on many packages. Explain its meaning.

Figure 15



.....
.....
(1 mark)

(c) **Figure 16** shows the European Union Eco-label, which can be awarded to businesses that market products and services that are kinder to the environment.

Explain why this symbol is appropriate for a European Union Eco-label.

.....
.....
.....
(3 marks)

Figure 16



(d) **Figure 17** is a photograph of a hand-cranked dynamo charger for electronic items powered by rechargeable batteries. The crank handle is turned by hand.

Design a symbol in the style of those in **Table 3** to show a ‘wind-up’ action. Use **Figure 18** to sketch designs before drawing your final symbol. (7 marks)

Figure 17

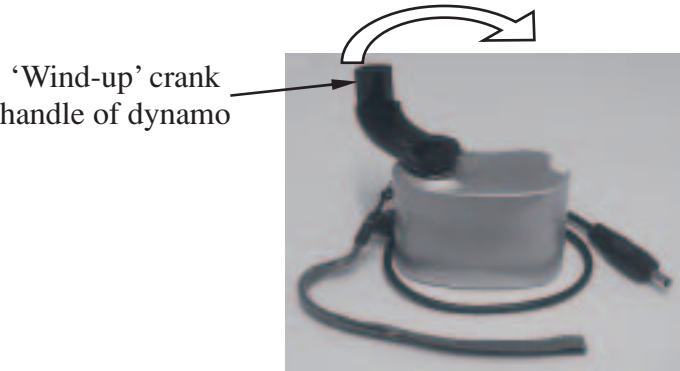


Figure 18

Designing space

‘Wind-up’ Symbol

END OF QUESTIONS