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| Surname | | | | | Other Names | | | | |
| Centre Number | | | | | Candidate Number | | | | |
| Candidate Signature | | | | | | | | | |

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| For Examiner's Use |
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General Certificate of Secondary Education
June 2007

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

3553/F

F



Tuesday 5 June 2007 1.30 pm to 3.00 pm

| |
|---|
| <p>For this paper you must have:</p> <ul style="list-style-type: none"> a pen, a pencil, a ruler, an eraser, a pencil sharpener and coloured pencils. <p>You may also use marker pens and 45/60 degree set squares.</p> |
|---|

| For Examiner's Use | | | |
|---------------------|------|----------|------|
| Question | Mark | Question | Mark |
| 1 | | 5 | |
| 2 | | 6 | |
| 3 | | 7 | |
| 4 | | 8 | |
| Total (Column 1) → | | | |
| Total (Column 2) → | | | |
| TOTAL | | | |
| Examiner's Initials | | | |

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.

This question is about marketing and product analysis and is worth 7 marks.

You are advised to spend about 5 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 |
|--|--|---|--|
| <p>A <i>value</i> phone</p>  | <p>The user of this <i>value</i> phone is likely to be . . .</p> <p><i>An elderly person</i></p> | <p>This phone has the following aesthetic feature:</p> <p><i>A silver metallic finish</i></p> | <p>TXT</p> <p>.....</p> <p>.....</p> <p>.....</p> |
| <p>A <i>fashion</i> phone</p>  | <p>The user of this <i>fashion</i> phone is likely to be . . .</p> <p>.....</p> | <p>This phone has the following aesthetic feature:</p> <p>.....</p> <p>.....</p> <p>.....</p> |  <p>.....</p> <p>.....</p> <p>.....</p> |
| <p>A <i>disposable</i> phone</p>  | <p>The user of this <i>disposable</i> phone is likely to be . . .</p> <p>.....</p> | <p>This phone has the following aesthetic feature:</p> <p>.....</p> <p>.....</p> <p>.....</p> | <p>999</p> <p>.....</p> <p>.....</p> <p>.....</p> |

(7 marks)

This question is about modelling materials 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 model mobile phone is given in **Figure 1**.

(a) Name a thermoplastic suitable for modelling the mobile phone casing.

.....
(1 mark)

(b) Explain an important property of a thermoplastic material.

.....
.....
(2 marks)

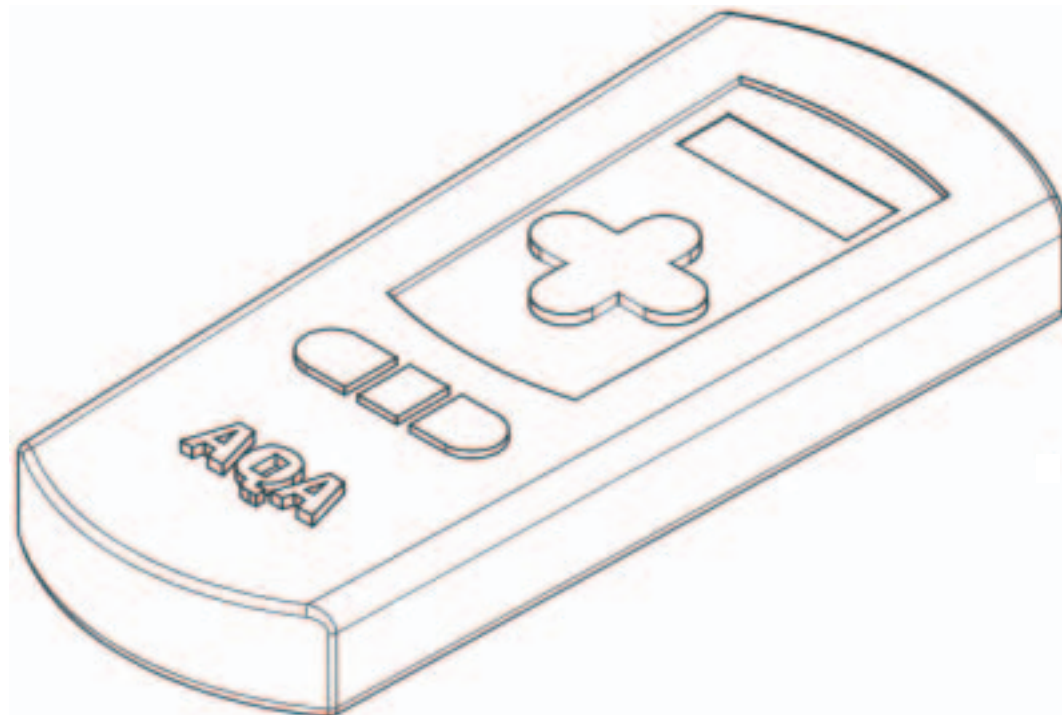
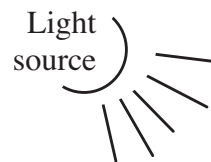
(c) A light source is shown shining on the mobile phone (**Figure 1**).

Render the pictorial drawing of the phone.

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

(6 marks)

Figure 1



(d) 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 icons 2 and 3 and explain their use.

Icon number 1 has been completed for you.

(6 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 | | <i>Pencil</i> | <i>To draw lines on the screen</i> |
| 2 | | | |
| 3 | | | |
| 4 | | <i>Print</i> | <i>When selected, sends the screen image to the printer</i> |

Sketching space

This question is about letter styles and is worth 8 marks.

You are advised to spend about 5 minutes on this question.

3 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.

A typical letter style is shown in **Figure 2**.

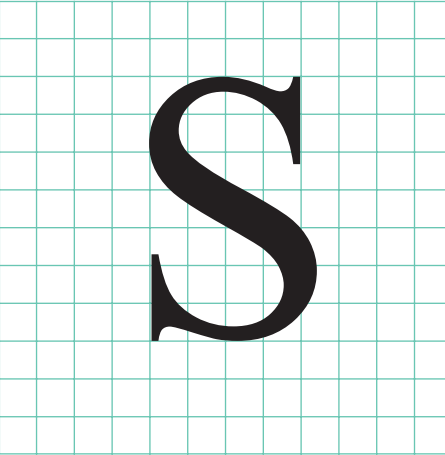
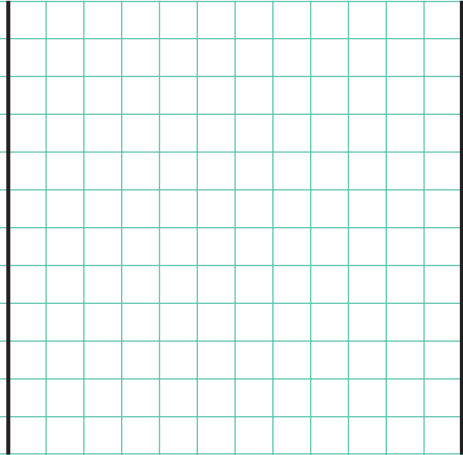
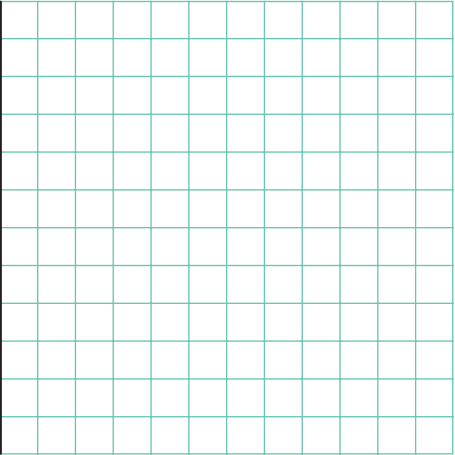
(a) (i) In **Figure 2**, sketch **two** different styles for the letter **S** in the spaces provided.

Use only upper case (capital) letters.

Your preferred letter style will be used in Question 5.

(5 marks)

Figure 2

| Example | Letter style 1 | Letter style 2 |
|---|--|---|
|  |  |  |

(ii) My preferred letter style is number:

Explain why this is your preferred letter style.

.....

.....

.....

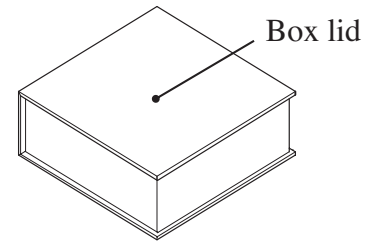
(3 marks)

Turn over for the next question

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

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

Figure 3



4 The mobile phone is to be packaged in a box (**Figure 3**).

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

(a) Sketch **three** different images on the theme of *emergency use* in the space below (**Figure 4**).

Marks will be awarded for:

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

(b) Develop your best image from part (a) into a final design in the space below (**Figure 5**).

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 4

Three different images based on the theme *emergency use*, indicating colours used.

Add notes to explain your ideas.

Figure 5

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 10 minutes on this question.

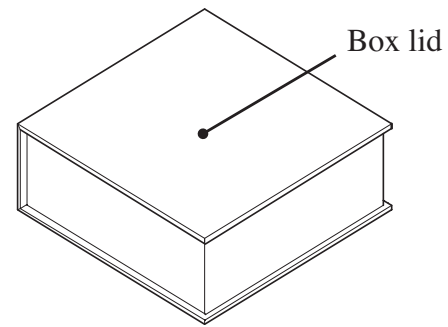
5 The mobile phone is to be packaged in a box (**Figure 6**).

(a) Using the specification given in **Figure 7**, sketch a suitable layout for a box lid design in **Figure 9**.

Label the features of your sketch.

(4 marks)

Figure 6



(b) On the half-size outline of the box (**Figure 10**), complete a coloured drawing of your lid design, using the best parts 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 7

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 8**)

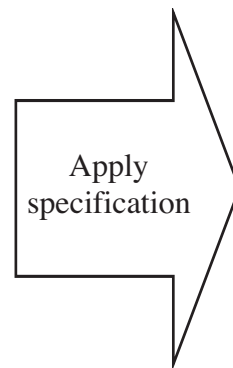


Figure 9

Sketch of layout for box lid design

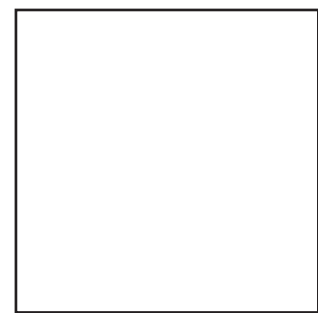


Figure 10

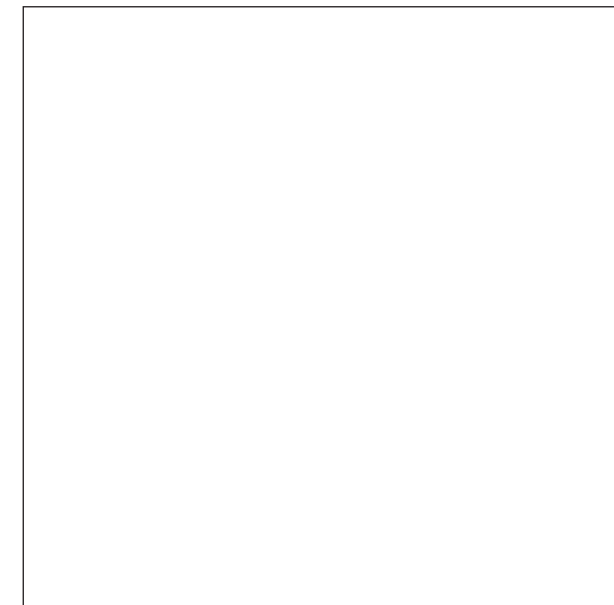


Figure 8



This question is about materials, surface development (nets) and British Standard conventions, and is worth 13 marks.

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

6 A pictorial drawing of a similar packaging for a different mobile phone is shown in **Figure 11**. The tray holds the phone and slides into the sleeve.

(a) Packaging is used for a number of reasons.

State and explain **two** different reasons why packaging is used.

Reason 1

Explanation

.....

.....

.....

(3 marks)

Reason 2

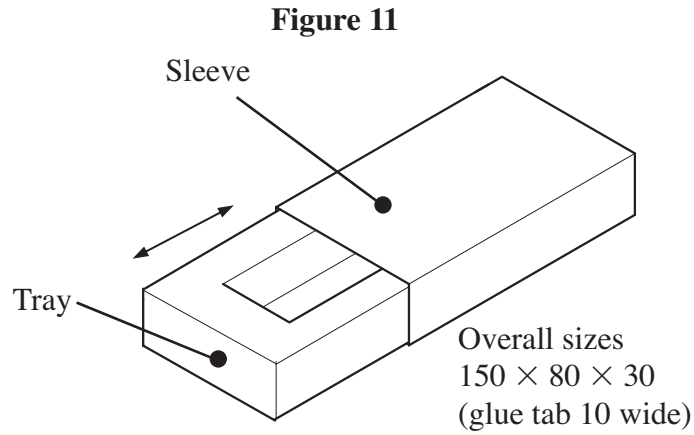
Explanation

.....

.....

.....

(3 marks)



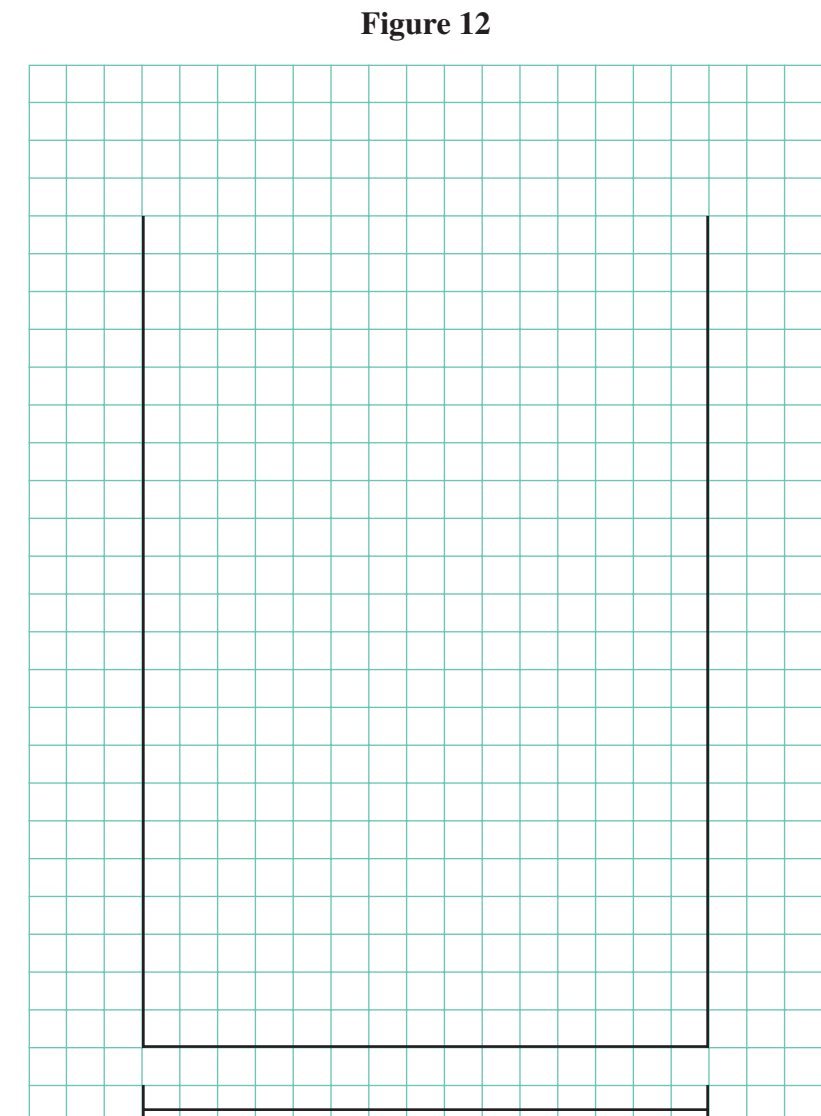
| KEY | |
|-----------|---------|
| ————— | Outline |
| - - - - - | Fold |

(b) **Figure 12** shows an incomplete *half full size* surface development (net) of the sleeve.

(i) Complete the surface development (net) by showing the fold lines. Include one glue tab 10 mm wide. (3 marks)

(ii) Using British Standard conventions add **two** dimensions. One has been started for you. (3 marks)

(iii) State the scale in the space provided. (1 mark)

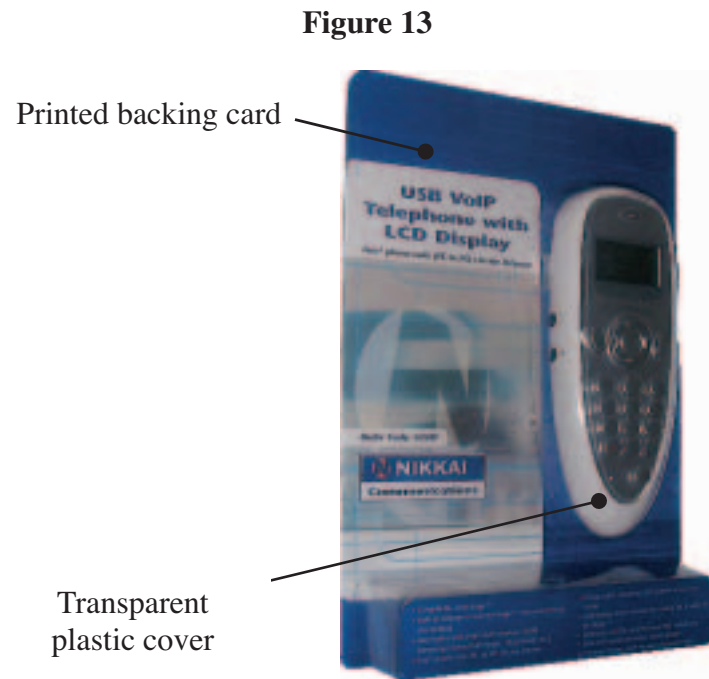


Scale :

This question is about packaging, its materials and components, and is worth 11 marks.

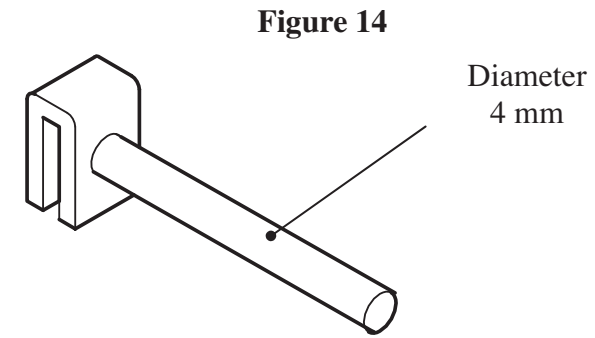
You are advised to spend about 10 minutes on this question.

7 A photograph of another mobile phone and its package is shown in **Figure 13**.



(b) A similar package is to be made in a school's Design and Technology department. It must fit on a 'point of sale display' mounting bracket (**Figure 14**).

(i) With sketches and notes show how the package can be modified so that it hangs from the mounting bracket.



(a) (i) What is the name given to this type of package?

.....
(1 mark)

(ii) Name a material which can be used to form the transparent plastic cover.

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

(5 marks)

(ii) Name **one** piece of graphic modelling equipment you would use to modify the package above.

.....
(1 mark)

(iii) Explain **one** safety rule that needs to be followed when using this equipment.

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

This question is about Cultural, Social and Environmental Issues and is worth 14 marks.

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

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

How is it identified as a European Union symbol?

.....
.....
(2 marks)



(c) Signs, symbols or pictograms are frequently printed on the outer packaging of products.

(i) Explain why signs, symbols or pictograms are used instead of written information or instructions.

.....
.....
(2 marks)

(ii) Given below is a symbol found on many packages.

Explain its meaning.



.....
.....
.....
(2 marks)

END OF QUESTIONS

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