Write your name here

Surname	Other names

Edexcel GCE

Centre Number	Candidate Number

Design and Technology

Product Design: Graphic Products
Advanced Subsidiary
Unit 2: Design and Technology in Practice

Tuesday 14 May 2013 – Morning
Time: 1 hour 30 minutes

Paper Reference
6GR02/01

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches it must be dark (HB or B). Coloured pens, pencils and highlighter pens must not be used.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
  – *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

P39255A

1/1/1/1/1/1

P 3 9 2 5 5 A 0 1 2 0

PEARSON

Answer ALL the questions. Write your answers in the spaces provided.

1 The vacuum forming process is used to manufacture the blister in the blister package shown in Figure 1.

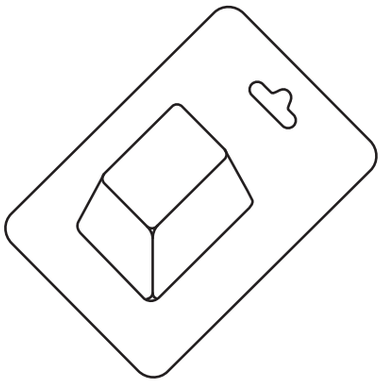

Figure 1

(a) State **one** suitable polymer for the vacuum formed blister.

(1)

.....

.....

Figure 2 shows a pencil sharpener to be sold in a vacuum formed blister package.

Figure 2

(b) Using annotated sketches, describe **two** key features of the vacuum form mould used to produce the blister for this product.

(5)

The former will be made from medium density fibreboard (MDF) using a disc sander.

(c) Complete the risk assessment table below:

(i) Name **two** risks when using a disc sander.

(2)

(ii) State **two** control measures which would prevent the hazard.

(2)

Hazard	Risk	People at risk	Control measure
Using a disc sander	1.	**User or people in immediate area**	1.
	2.		2.

(Total for Question 1 = 10 marks)

2 Figure 3 shows a diagram of the offset lithographic printing process.

(a) (i) Complete the diagram by labelling each of the indicated parts of the offset lithographic printing process.

(5)

(ii) On the diagram indicate the direction of rotation of cylinder X.

(1)

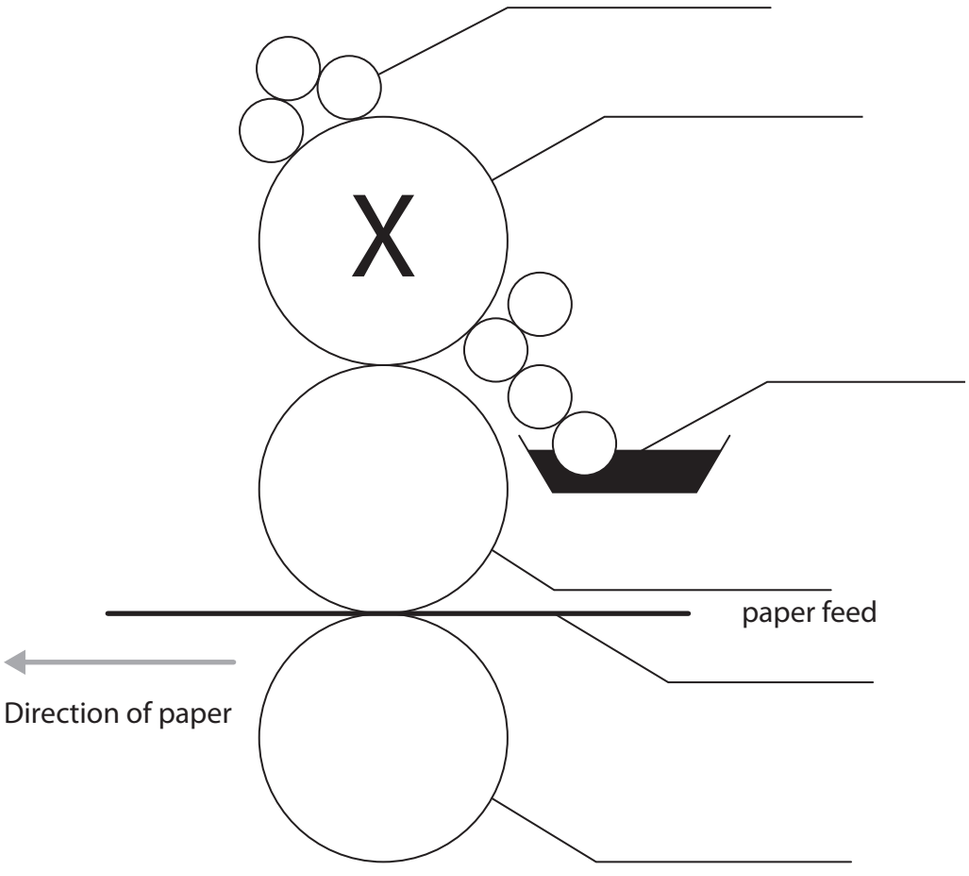

Figure 3

(b) Describe how an image is printed onto the paper using the offset lithographic printing process.

(4)

(Total for Question 2 = 10 marks)

3 Paper and card can be manufactured using the Fourdrinier process.

The Fourdrinier process has four sections:

- Wet end section
- Press section
- Dryer section
- Calendar section

(a) Describe **three** of the sections in the Fourdrinier process.

(6)

Chosen section .....

Chosen section .....

Chosen section .....

Folding boxboard is made from layers of mechanical pulp sandwiched between two layers of chemical pulp.

(b) Describe the production of **one** of the following pulps:

- Chemical pulp
- Mechanical pulp

(4)

Chosen pulp: .....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 3 = 10 marks)

4 Figure 4 shows a commercially produced packaging net.

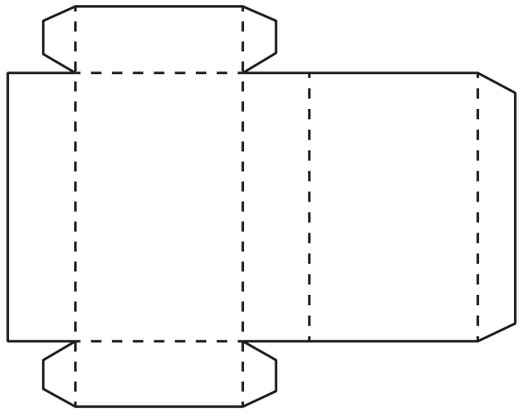

Figure 4

Once printed, this packaging net is cut out using a die-cutter.

(a) Explain **one** safety feature of an industrial die-cutting machine.

(2)

.....

.....

.....

.....

.....

(b) Explain **one** advantage of cutting the net using a die-cutter rather than traditional cutting methods.

(2)

.....

.....

.....

.....

.....

(c) Explain the term 'quality control' (QC).

(3)

(d) Explain the term 'quality assurance' (QA).

(3)

(Total for Question 4 = 10 marks)

BLANK PAGE
Turn over for next question.

5 Figure 5 shows a pictorial drawing of a hairdryer.

The front, end and plan views are labelled for you.

(a) In the space opposite, produce a freehand 3rd angle orthographic projection of the hairdryer. Show clearly the front, end and plan views.

(7)

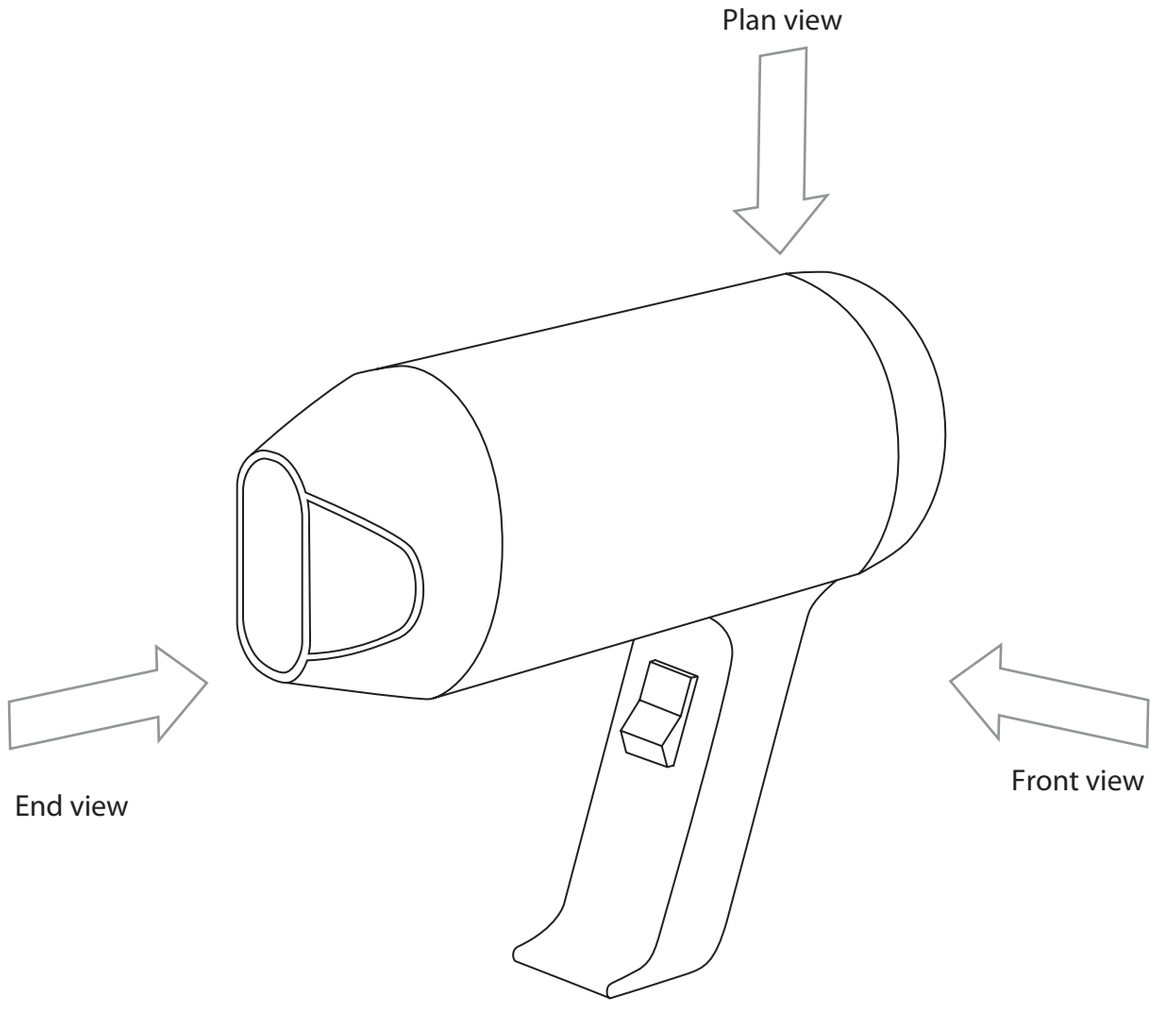

Figure 5

Use this space for your answer.

The drawing will be used in a booklet about the hairdryer. The booklet will be produced on coated printing paper.

*(b) Discuss why coated printing paper is used.

(3)

(Total for Question 5 = 10 marks)

6 Figure 6 shows a batch produced booklet for the hairdryer.

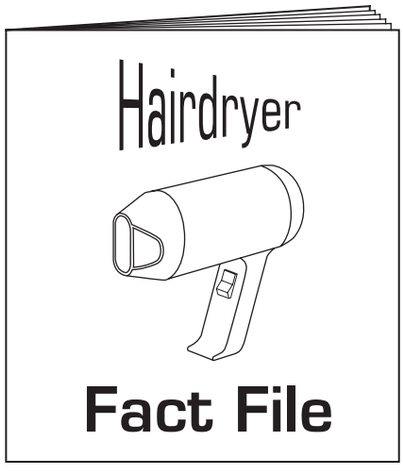

Figure 6

(a) Explain **two** advantages and **one** disadvantage of using comb binding for the booklet.

(6)

Advantage 1

Advantage 2

Disadvantage

An alternative method of binding for the booklet is side-wire stitching.

(b) Explain **one** disadvantage of using side-wire stitching for binding the booklet.

(2)

The distribution of the hairdryers is to be tracked using a radio frequency identification (RFID) system.

(c) Outline the features of an RFID system.

(4)

(Total for Question 6 = 12 marks)

***7** Evaluate the use of offset lithography to print the hairdryer booklet compared to the gravure printing process.

(8)

(Total for Question 7 = 8 marks)

TOTAL FOR PAPER = 70 MARKS

BLANK PAGE

BLANK PAGE

BLANK PAGE