

Write your name here	
Surname	Other names
Centre Number	Candidate Number
Edexcel GCE	
<h1>Design and Technology</h1> <h2>Product Design: Graphic Products</h2> <h3>Advanced Subsidiary</h3> <h3>Unit 2: Design and Technology in Practice</h3>	
Friday 28 May 2010 – 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 ►

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

- 1 Figure 1 shows popular mass produced breakfast cereals, with carton board packaging.



Figure 1

- (a) Name the specific type of carton board used to make the packaging.

(1)

- (b) State a suitable commercial printing process that would be used to colour print the graphics onto the packaging.

(1)

- (c) The packaging has been varnished after printing.

Give **two** reasons why the packaging has been varnished.

(2)

1

2



(d) The packaging is cut using the die cutting process.

Give **four** reasons why die cutting is used.

(4)

1

2

3

4

(e) The British Standards Institute (BSI) is one of the world's leading standards and quality services organisations.

Describe **one** way in which the work of the BSI benefits the consumer.

(2)

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(f) Explain **two** reasons why manufacturers of mass produced products use total quality management (TQM).

(4)

1

2

Total for Question 1 = 14 marks



2 Figure 2 shows four pictorial drawings which illustrate the stages of opening a document folder.

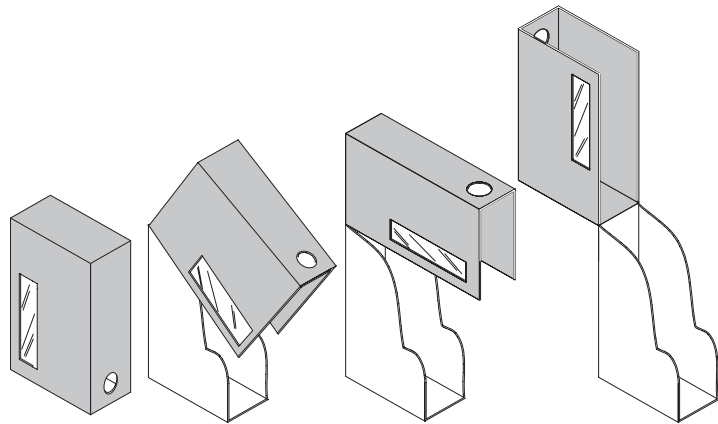


Figure 2

(a) Name the specific type of pictorial drawing used in Figure 2.

(1)

(b) In the following box, draw the net (development) of the document folder shown in Figure 2.

Your sketch should clearly show all the folder's features, the fold/crease lines and glue tabs.

(5)



(c) The document folder was designed using computer aided design (CAD).

Explain **two** advantages of designing the document folder using CAD rather than traditional hand-drawn methods.

(4)

1

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2

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(d) Loose page documentation stored within the document folder has been bound using a comb binder.

Describe **one** advantage and **one** disadvantage of using a comb binder rather than other methods of binding.

(4)

Advantage

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Disadvantage

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Total for Question 2 = 14 marks



3 Figure 3 shows a mass produced DVD case which has a full colour printed paper cover.



Figure 3

(a) The DVD cover is printed on commercial coated paper.

Give **one** aesthetic and **one** functional property of coated paper.

(2)

Aesthetic

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Functional

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(b) Figure 4 shows a symbol found on the DVD case.



Figure 4

State the polymer that PP represents.

(1)

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(c) Explain **one** feature of mass production.

(2)

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(d) Continuous quality control (QC) checks are made throughout the production of the DVD cover.

Complete the following table by stating **one** quality control check at each stage of production of the printed paper DVD cover.

(3)

Stage of production	Quality control check
Preparation	
Processing	
Assembly	



(e) Wood pulp is needed for the process of producing paper and card. It can be produced using the following methods:

- Mechanical
- Chemical
- Waste pulp.

Outline the key stages of **one** method of producing wood pulp.

(3)

Chosen method

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(f) Paper and card can be manufactured using the Fourdrinier process.

Describe the main stages of the Fourdrinier process.

(3)

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Total for Question 3 = 14 marks



*4 Figure 5 shows a two litre milk container made from Polyethylene Terephthalate (PET).



Figure 5

(a) Give **two** properties of PET that make it suitable for use as a milk container.

(2)

- 1
- 2

(b) Smart materials are increasingly used in products.

Describe how thermochromic film could be used to enhance milk container packaging.

(3)

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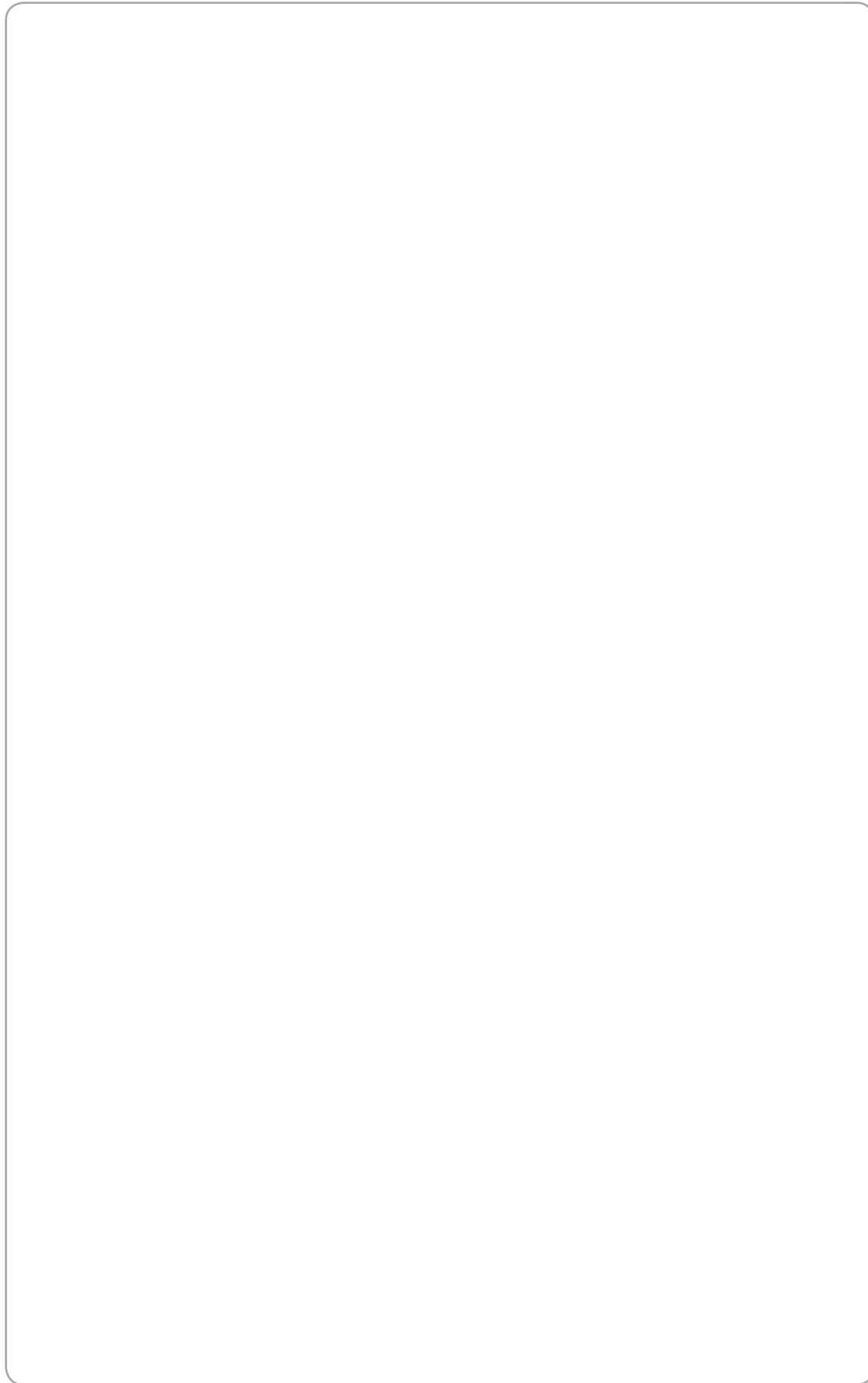
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(c) The milk container was produced using the blow moulding process.
Using annotated sketches describe the blow moulding process.

(4)



(d) The Control of Substances Hazardous to Health (COSHH) regulations are an essential aspect of health and safety in the workplace.

Describe what employers must do to protect their employees from hazardous substances.

(5)

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Total for Question 4 = 14 marks



*5 Figure 6 shows a designer's concept drawings for a new mobile phone.



Figure 6

(a) The designer used computer modelling to create photo realistic images of the new mobile phone.

Describe how computer generated photo realistic images help the designer.

(5)

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(b) The concept mobile phone uses a liquid crystal display (LCD).

Outline the benefits of using this type of display.

(3)

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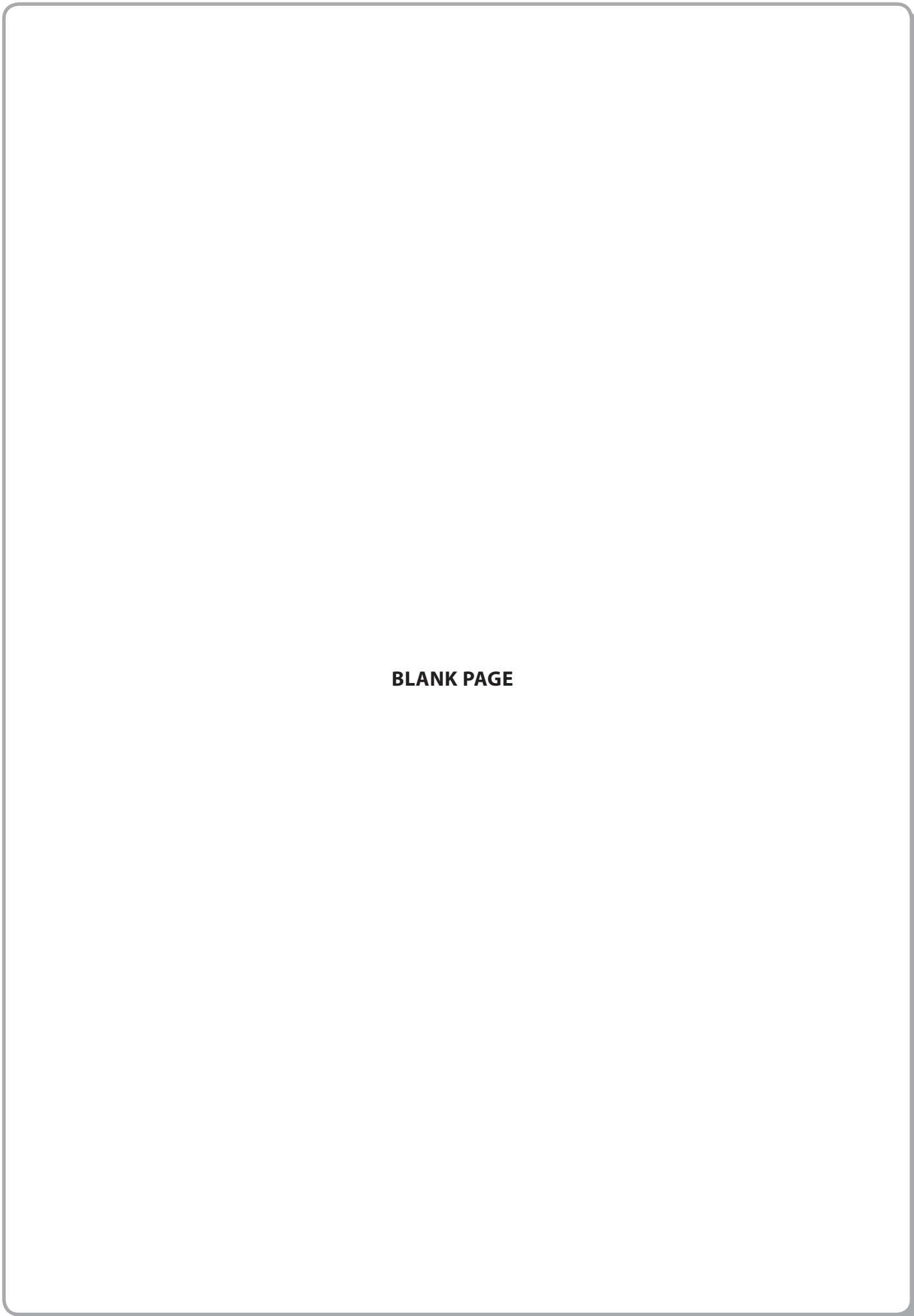
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