

Please check the examination details below before entering your candidate information

Candidate surname		Other names	
Pearson Edexcel GCE		Centre Number	Candidate Number
Monday 13 May 2019			
Afternoon (Time: 1 hour 30 minutes)		Paper Reference 6GR02/01	
Design and Technology Product Design: Graphic Products Advanced Subsidiary Unit 2: Design and Technology in Practice			
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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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

- 1 Figure 1 shows a bottle made of polyethylene terephthalate (PET).

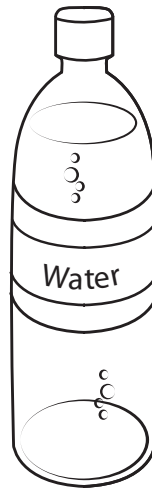


Figure 1

- (a) State **two** properties of PET that make it suitable for use as a bottle for water.

(2)

- 1
- 2

- (b) Smart materials can be used to make products more desirable for the consumer.

Outline how thermochromic film could be used to enhance the label on the bottle.

(2)

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(c) Quality control checks are completed during the printing of the bottle label.

Complete the table below by:

- stating **one** effect of the problem
- drawing the quality control printer's mark used to check for the problem.

Problem	Effect of the problem	Quality control mark
Bad register	(1)	(1)
Greyscale variation	(1)	(1)



P 5 7 4 6 3 A 0 3 1 6

(d) The bottle was produced using the blow moulding process.

Describe, using annotated sketches, the blow moulding process.

(4)



(Total for Question 1 = 12 marks)

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2 Figure 2 shows a set of spiral bound recipe cards.

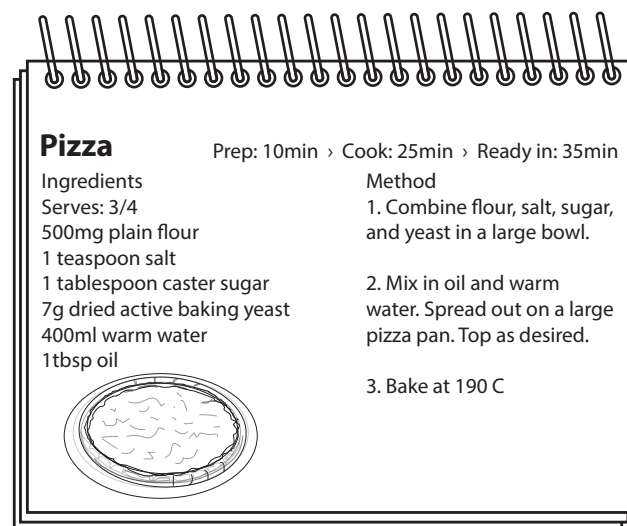


Figure 2

(a) The recipe cards have been encapsulated.

State **two** advantages of encapsulating the recipe cards.

(2)

- 1
- 2

(b) The cards have been designed using desktop publishing (DTP).

Explain **two** advantages of using desktop publishing for the design of the cards.

(4)

- 1
- 2



- (c) The publisher of the cards is considering using comb binding for the next batch of recipe cards.

Explain **one** advantage and **one** disadvantage of using comb binding rather than spiral binding.

(4)

Advantage

Disadvantage

(Total for Question 2 = 10 marks)

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- 3 (a) Advertising posters are often printed using offset lithography because it is a high speed process.

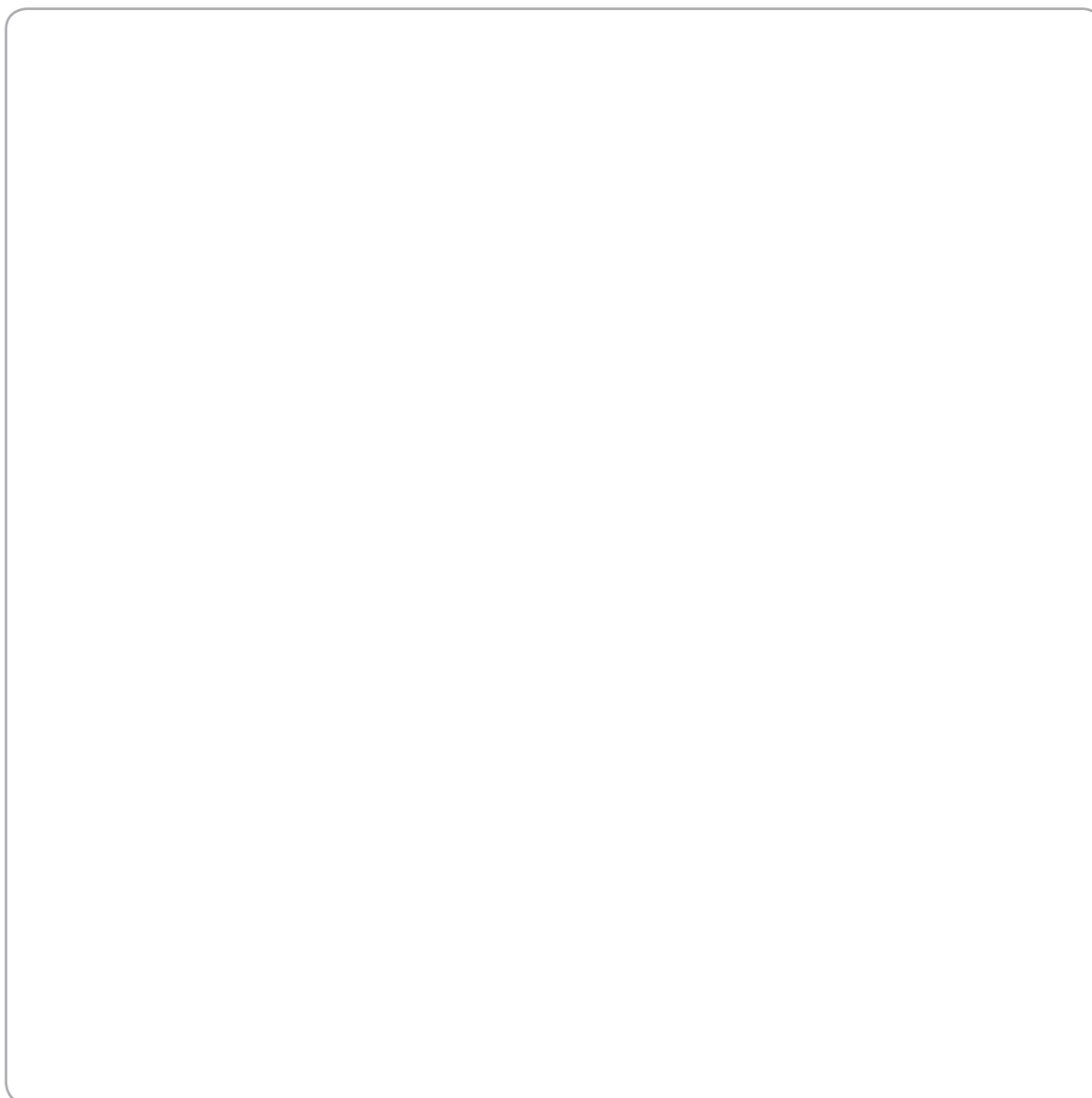
Explain **one** further benefit of using offset lithography for printing advertising posters.

(2)

- (b) Information displays can incorporate smart ink technology.

Describe, using annotated sketches, how smart ink works in order to display images.

(4)



(4)

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(Total for Question 3 = 10 marks)

- 4 Figure 3 shows a mass produced box used as packaging for a child's toy.

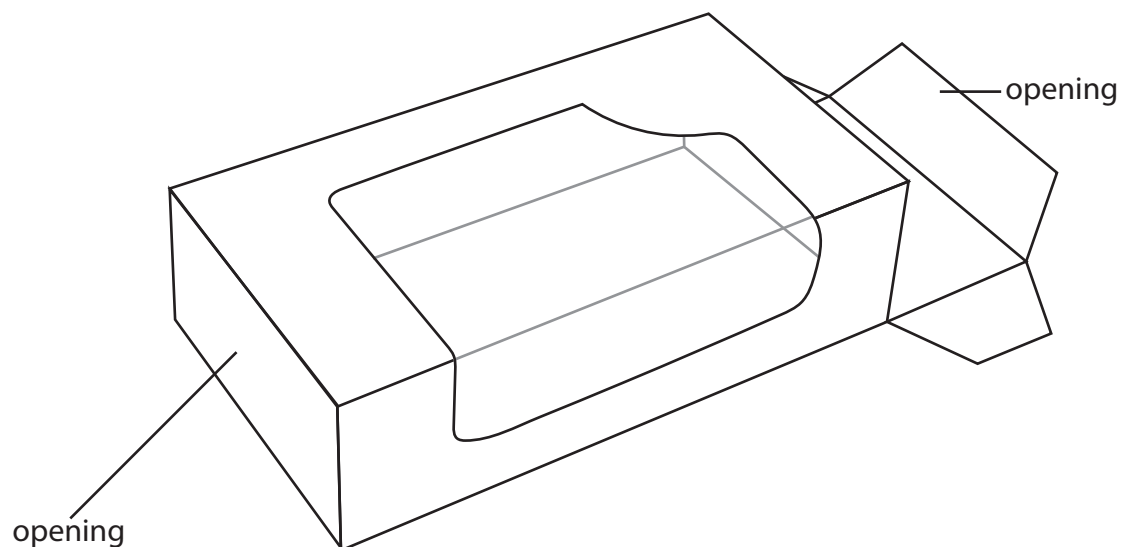


Figure 3

- (a) In the space below draw the net (surface development) of the box.

(5)

Blank space for drawing the net (surface development) of the box.



(b) The packaging is made from folding boxboard.

Explain **one** characteristic of folding boxboard that makes it suitable for packaging.

(2)

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(c) The packaging is joined using the spot gluing process.

Explain **one** advantage of using spot gluing for packaging.

(2)

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(Total for Question 4 = 9 marks)

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5 (a) State **two** properties of jelutong that make it a suitable material for producing prototype models.

(2)

1

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2

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(b) PVA adhesive is used during the construction of jelutong models.

Explain **one** advantage and **one** disadvantage of using PVA adhesive.

(4)

Advantage

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Disadvantage

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6 (a) Explain **one** way in which the work of the British Standards Institute (BSI) benefits the consumer.

(2)

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

(4)

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***7** Evaluate the use of working drawings for communicating design concepts with potential end users of products.

(8)

Handwriting practice area with horizontal dotted lines.

(Total for Question 7 = 8 marks)

TOTAL FOR PAPER = 70 MARKS



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