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Surname

Other names

Pearson
Edexcel GCE

Centre Number

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Candidate Number

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Design and Technology

Product Design: Graphic Products

Advanced Subsidiary

Unit 2: Design and Technology in Practice

Monday 14 May 2018 – Afternoon

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.
- 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 commercially manufactured package for cosmetics. The package is made from folding boxboard.

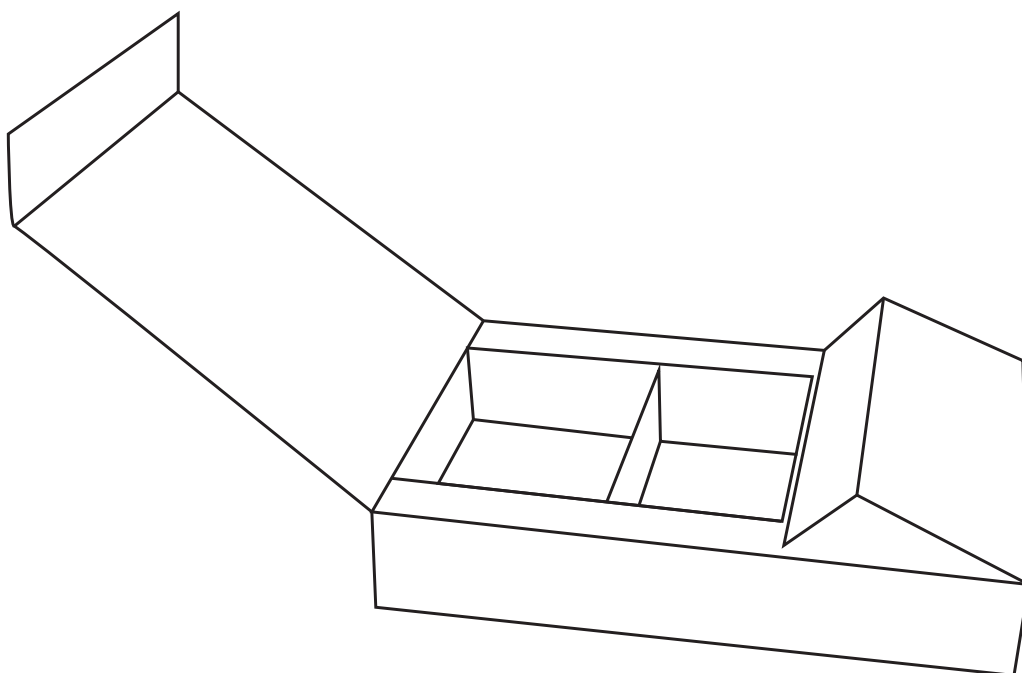


Figure 1

- (a) State **two** characteristics of folding boxboard that make it a suitable material for this packaging.

(2)

1

2

- (b) The net for the packaging has been cut using a die-cutter.

Explain **one** advantage of using a die-cutter rather than cutting by hand.

(2)

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

(2)

(d) Describe, using annotated sketches, the process of die-cutting.

(4)

(Total for Question 1 = 10 marks)



- 2 Modern materials are often used in combination with other materials when producing graphic products.

Figure 2 shows a safety sign printed with ink containing phosphorescent pigments.

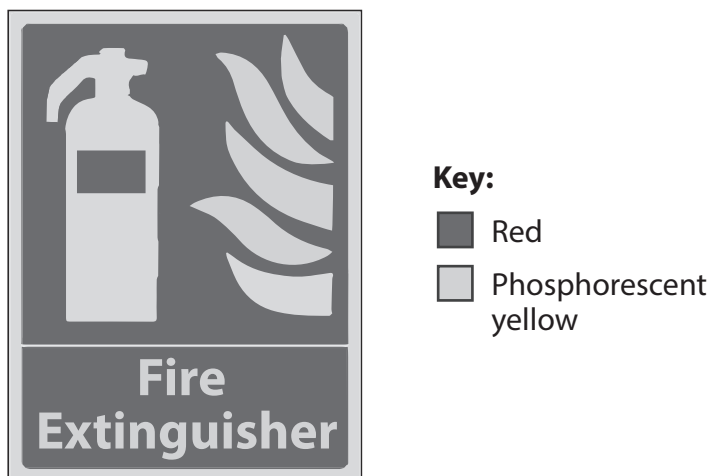


Figure 2

- (a) State **two** advantages of using phosphorescent pigments on safety signs.

(2)

1

2

- (b) The sign is printed on a sheet of aluminium. Aluminium provides a good printing surface for the sign.

Describe **one** other property of aluminium that makes it suitable for the sign shown in Figure 2.

(2)

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(c) Explain **two** reasons why flexography is used to print the image onto the aluminium sheet.

(4)

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(Total for Question 2 = 8 marks)



3 A publisher is launching a new magazine.

(a) The pages of the magazine are held together by saddle-wire stitching.

Discuss why saddle-wire stitching is suitable for use in magazines.

(4)

(b) The magazine is printed on coated paper.

Explain **two** reasons why coated paper is suitable for use in magazines.

(4)

1

2



(c) Paper is often produced using the Fourdrinier process.

Outline how pulp is processed into paper during the wet end section of the Fourdrinier process.

(4)

(Total for Question 3 = 12 marks)



- 4 A high street retailer is planning to launch a range of luxury chocolates.

One method of improving the aesthetics of the packaging is to use hot foil blocking.

- (a) Describe, using annotated sketches, the process of hot foil blocking.

(4)



(b) Hot foil blocking is a finishing process that is used to improve the aesthetics of a product.

Explain **two** other finishing processes that could be used to improve the aesthetics of packaging.

(4)

1

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- (c) Discuss the characteristics of solid white board that make it a suitable material for packaging chocolates.

(6)

(Total for Question 4 = 14 marks)



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5 Point of sale displays are often manufactured from a range of polymer and wood based materials.

(a) Explain **one** advantage of laser cutting acrylic for use in a point of sale display.

(2)

(b) Figure 3 shows the rear view of a prototype point of sale display. Its supporting structure has been manufactured from pine.

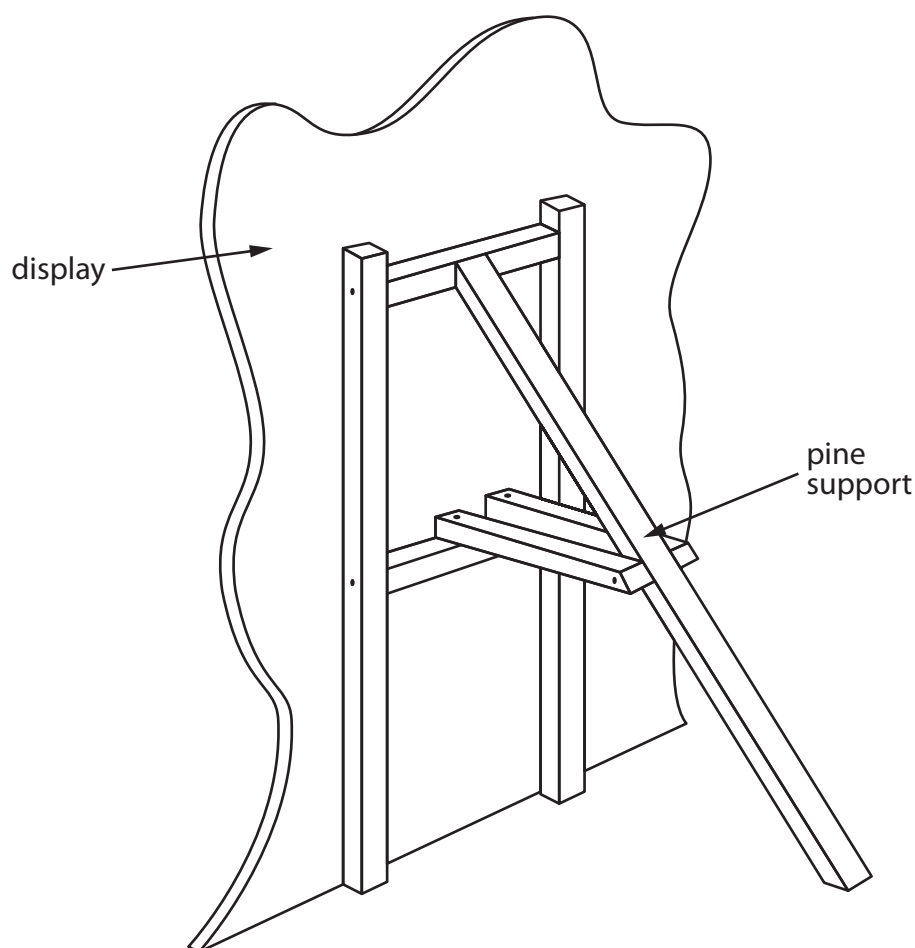


Figure 3



Explain **one** advantage and **one** disadvantage of using pine for the supporting structure of the point of sale display.

(4)

Advantage

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Disadvantage

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(Total for Question 5 = 6 marks)

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6 Figure 4 shows a third-angle orthographic projection of a digital camera.

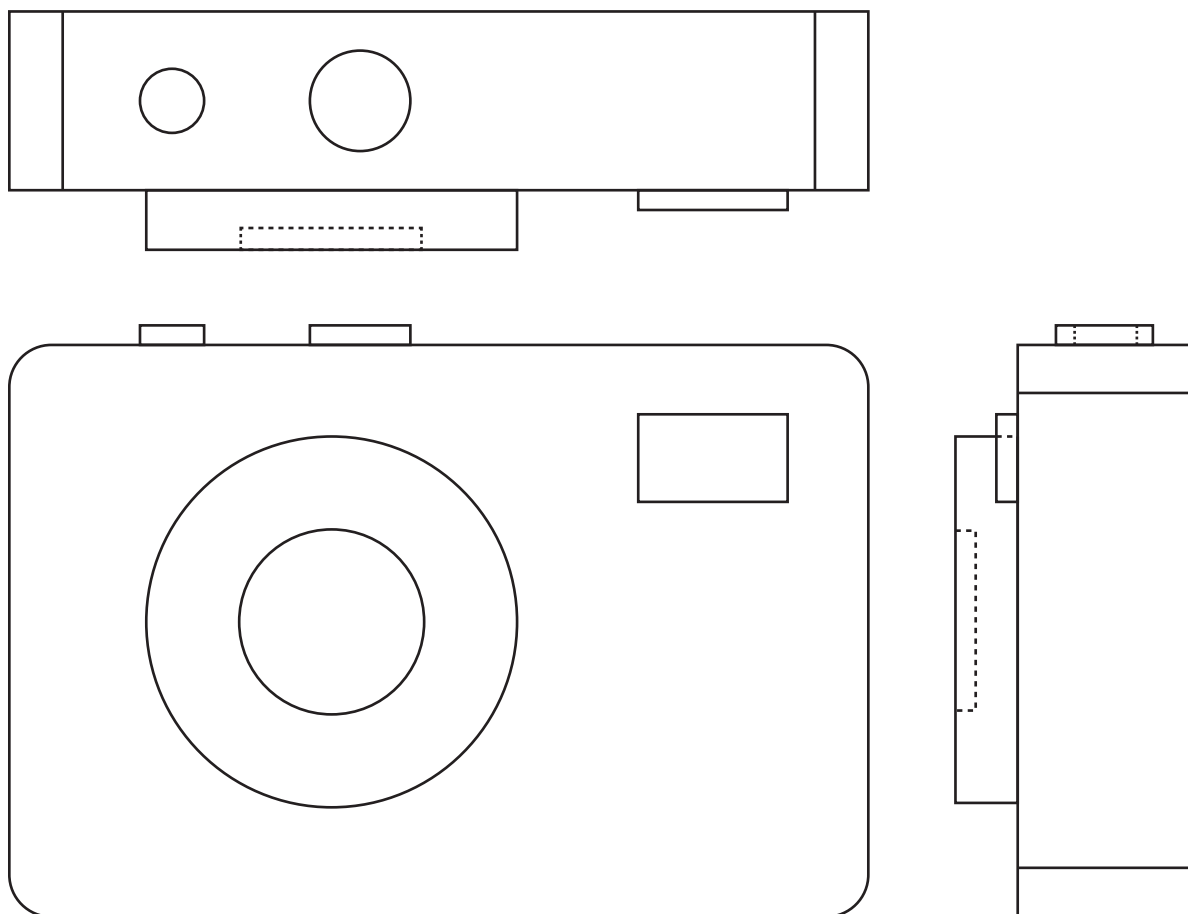


Figure 4

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(a) In the space below, sketch an isometric drawing of the digital camera.

(6)



P 5 5 5 4 6 A 0 1 5 2 0

*(b) During the manufacturing of the digital camera, both quality assurance (QA) and quality control (QC) activities are carried out.

Discuss the characteristics of quality assurance and quality control.

(6)

(Total for Question 6 = 12 marks)



- *7 Prototyping is a vital stage of the development of graphic products. Prototypes can be produced by hand from Styrofoam™ or by rapid prototyping using CAD/CAM.

Evaluate the use of Styrofoam™ and rapid prototyping for the production of prototypes.

(8)



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(Total for Question 7 = 8 marks)

TOTAL FOR PAPER = 70 MARKS



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