

Write your name here

Surname

Other names

Centre Number

Candidate Number

Edexcel GCSE

Design and Technology: Graphic Products

Unit 2: Knowledge and Understanding of Graphic Products

Tuesday 29 May 2012 – Afternoon

Time: 1 hour 30 minutes

Paper Reference

5GR02/01

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 80.
- 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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6/6/6/c4/c4/c5



PEARSON

Answer ALL the questions.

For each question 1 to 10, choose an answer A, B, C or D. Put a cross in the box indicating the answer you have chosen . If you change your mind about an answer, put a line through the box and then mark your new answer with a cross .

1 How was the lettering applied to the side of this car?



- A** Screen-printed
- B** Printed using offset lithography
- C** Laser engraved
- D** Vinyl stickers

(Total for Question 1 = 1 mark)

2 Many sporting events are now available in HDTV.

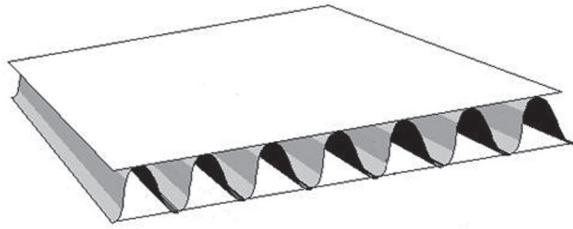
What does HDTV stand for?

- A** Highly developed television
- B** High definition television
- C** Highly detailed television
- D** High directive television

(Total for Question 2 = 1 mark)



3 What type of board is shown below?



- A Folding boxboard
- B Carton board
- C Corrugated board
- D Solid white board

(Total for Question 3 = 1 mark)

4 Which **one** of the following adhesives can be used to laminate sheets of MDF together when block modelling?

- A Epoxy resin
- B Polystyrene cement
- C Tensol cement
- D PVA

(Total for Question 4 = 1 mark)

5 Which **one** of the following is **not** one of the '4 Rs' when minimising waste production?

- A Recycle
- B Reuse
- C Remember
- D Recover

(Total for Question 5 = 1 mark)



6 Which **one** of the following processes was used to print the lettering onto the T-shirt?



- A Offset lithography
- B Gravure
- C Screenprinting
- D Photocopying

(Total for Question 6 = 1 mark)

7 What is a 'smart' material?

- A A material made up of two or more materials that are combined by bonding.
- B A material made up of several layers laminated together.
- C A material that has been developed through the invention of new or improved technologies.
- D A material that can respond to differences in temperature or light and change in some way as a result.

(Total for Question 7 = 1 mark)



8 Which piece of information is **not** included on a barcode?

- A Manufacturer
- B Country of origin
- C Price
- D Brand

(Total for Question 8 = 1 mark)

9 A personalised invitation to the opening night of a new film is to be sent to guests.

Which **one** of the following printing processes would be suitable for producing the invite?

- A Digital printing
- B Gravure
- C Offset lithography
- D Flexography

(Total for Question 9 = 1 mark)

10 What type of network does Bluetooth use?




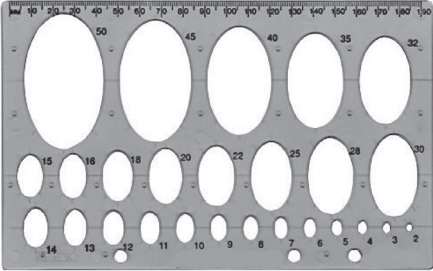
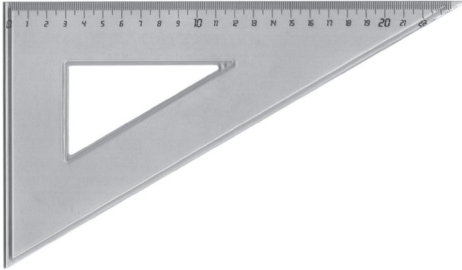

- A Local area network (LAN)
- B Personal area network (PAN)
- C Wide area network (WAN)
- D Virtual private network (VPN)

(Total for Question 10 = 1 mark)



11 (a) The table below shows some tools and equipment.

Complete the table below by giving the missing names and uses.

Tools/Equipment	Name	Use
	Compass	(1)
	(1)	For drawing circles in isometric
	(1)	For drawing in isometric and planometric
	Photocopier	(1)



(b) The diagram below shows a street sign made specifically for a new museum.



(i) The sign is made from aluminium.

Give **one** property of aluminium that makes it suitable for the street sign.

(1)

Property

(ii) Explain **one** reason why steel may not be a suitable material for the street sign.

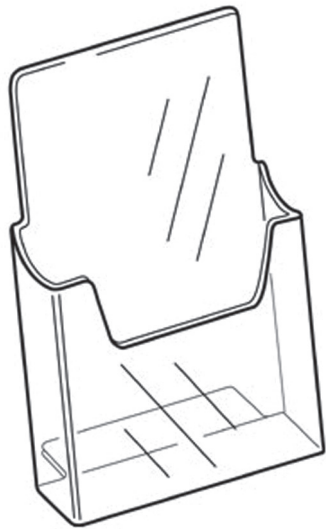
(2)

(iii) Explain **one** reason why a symbol is used in addition to the word on the sign.

(2)



(c) The diagram below shows an acrylic leaflet holder that will be used in the museum.



- (i) Give **one** property of acrylic that makes it suitable for the leaflet holder.
For your property, give **one** reason for your answer.

(2)

Property

Reason

- (ii) Explain **two** advantages of using a laser cutter to make the leaflet holder compared with traditional cutting methods.

(4)

1

2



(d) A website is used for marketing the museum.



Explain **two** advantages of using the internet for marketing the museum.

(4)

1

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2

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(Total for Question 11 = 19 marks)



12 A new transport museum requires interactive information kiosks to be placed within the building in order for visitors to access information about exhibitions.

Design specification

The specification for the interactive information kiosks is that they must:

- Allow for information to be input
- Allow for information to be accessed
- Reflect the theme of the transport
- Be easily recognised from a distance within the museum
- Be suitable for both children and adults to use
- Allow access to the inside of the information kiosk for maintenance
- Use appropriate materials available in a school workshop
- Use manufacturing processes suitable for batch production.

In the spaces opposite, use sketches and, where appropriate, brief notes to show **two different** design ideas for the interactive information kiosk that meet the specification points above.

Candidates are reminded that if a pencil is used for diagrams/sketches it must be dark (HB or B).

Coloured pens, pencils and highlighter pens must **not** be used.

PLEASE DO NOT WRITE OR DRAW IN THIS SPACE.

PLEASE USE THE SPACES OPPOSITE FOR YOUR DESIGNS.



Design idea 1

(8)

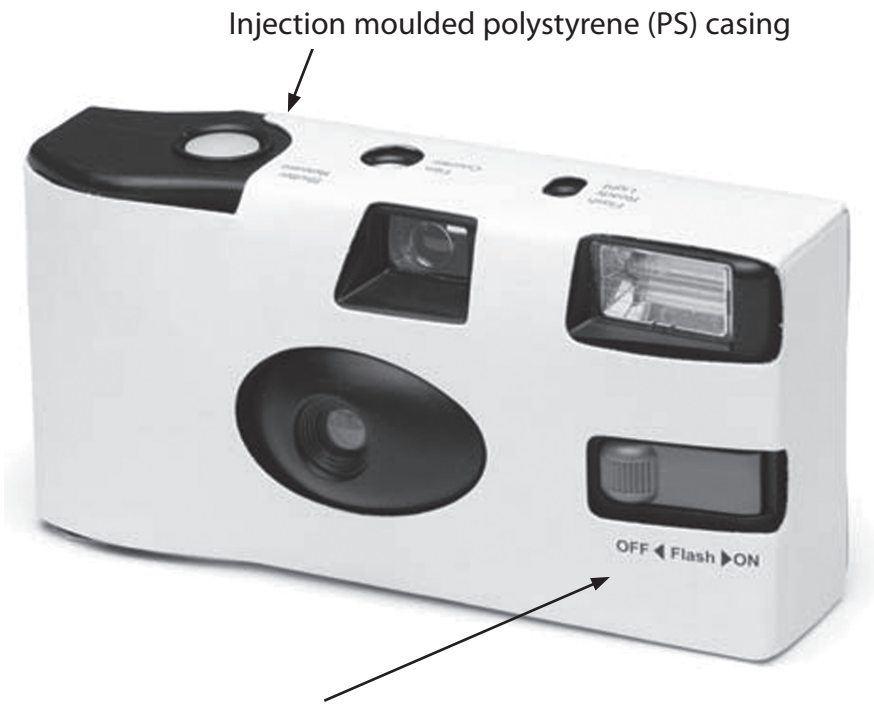
Design idea 2

(8)

(Total for Question 12 = 16 marks)



13 The picture below shows a mass produced disposable camera.



Injection moulded polystyrene (PS) casing

Carton board sleeve printed using offset lithography



(a) Give **two** properties of polystyrene (PS) that makes it a suitable material for the casing.

For each property, justify your answer.

(4)

Property 1

Justification

Property 2

Justification

(b) Explain **one** reason why offset lithography is suitable for printing the sleeve.

(2)



(c) Explain why the disposable camera was successful at meeting the following specification points:

(i) Easy to turn on and off.

(2)

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(ii) Capable of being branded for specific events.

(2)

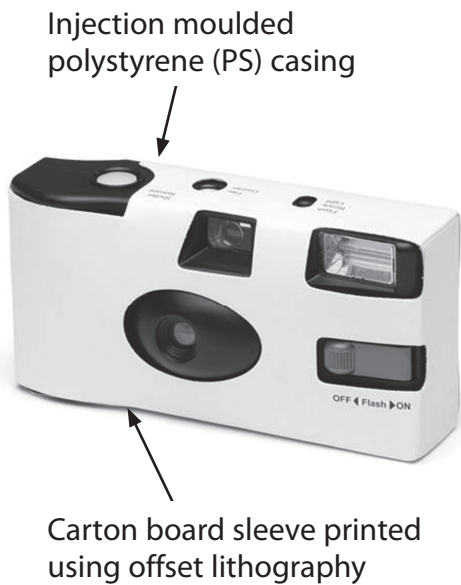
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*(d) Pictures A and B show two different types of camera.



A: Disposable camera



B: Compact digital camera



14 The picture below shows a batch produced road bike.



(a) The frame of the road bike is made from carbon-fibre.

(i) Name **one** specific metal that could be used for the frame instead of carbon-fibre.

(1)



(ii) Explain **two** reasons why the frame is made from carbon fibre.

(4)

1

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2

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(iii) Explain **two** advantages of using computer-aided design (CAD) when designing the bike frame.

(4)

1

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2

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(b) Explain **two** reasons why the road bike is batch produced.

(4)

1

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2

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