

Write your name here

Surname

Other names

Pearson
Edexcel GCSE

Centre Number

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Candidate Number

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Design and Technology:
Graphic Products
Unit 2: Knowledge and Understanding of
Graphic Products

Tuesday 21 June 2016 – 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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PEARSON

Answer ALL the questions.

Some questions must be answered with a cross ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

1 Which **one** of the following materials is most suitable for use as a fruit juice container?



- A Tetra Pak™
- B Corrugated board
- C Solid white board
- D Folding box board

(Total for Question 1 = 1 mark)

2 Which **one** of the following pieces of personal protective equipment (PPE) should be worn when using Tensol® cement?

- A Safety boots
- B Leather apron
- C Goggles
- D Ear defenders

(Total for Question 2 = 1 mark)

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3 Which **one** of the following methods has been used to join together the pages of the booklet shown below?



- A Spiral/comb binding
- B Perfect binding
- C Hard-binding
- D Saddle-wire stitching

(Total for Question 3 = 1 mark)

4 Which **one** of the following processes has been used to make the one-off plastic photo frame in the school workshop?



- A Blow moulding
- B Vacuum forming
- C Line bending
- D Injection moulding

(Total for Question 4 = 1 mark)



P 4 6 4 7 9 A 0 3 2 0

5 Which piece of technical drawing equipment should be used to construct an isometric drawing?

- A A circle template
- B A 30 / 60 degree set square
- C A 45 degree set square
- D A flexicurve

(Total for Question 5 = 1 mark)

6 Thermochromic film will respond to which **one** of the following conditions?

- A Changes in light
- B Changes in sound
- C Changes in heat
- D Changes in a magnetic field

(Total for Question 6 = 1 mark)

7 Which **one** of the following statements describes the process of laminating?

- A Makes paper more flexible
- B Heat seals paper with clear plastic
- C Cleans paper ready for printing
- D Inserts a watermark into paper

(Total for Question 7 = 1 mark)

8 Which **one** of the following statements describes stereolithography?

- A The enlarging of a photograph
- B The cutting of MDF
- C A type of rapid prototyping
- D A two colour printing technique

(Total for Question 8 = 1 mark)



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9 Which **one** of the following would be most suitable for printing images on a batch of 100 mugs?



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

(Total for Question 9 = 1 mark)

10 Which **one** of the following statements about e-paper (electronic paper) is **NOT** true?

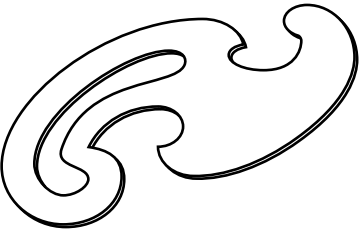
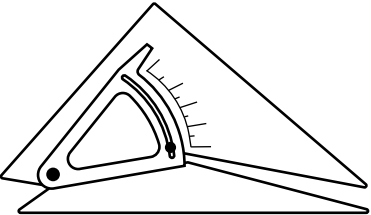
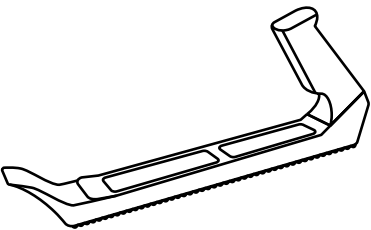
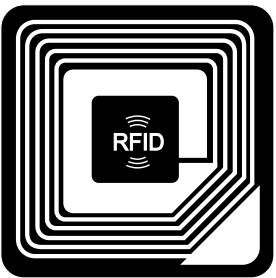
- A Easily read at an angle
- B Uses very little power
- C Can be read in bright light
- D Produces electricity from the Sun

(Total for Question 10 = 1 mark)



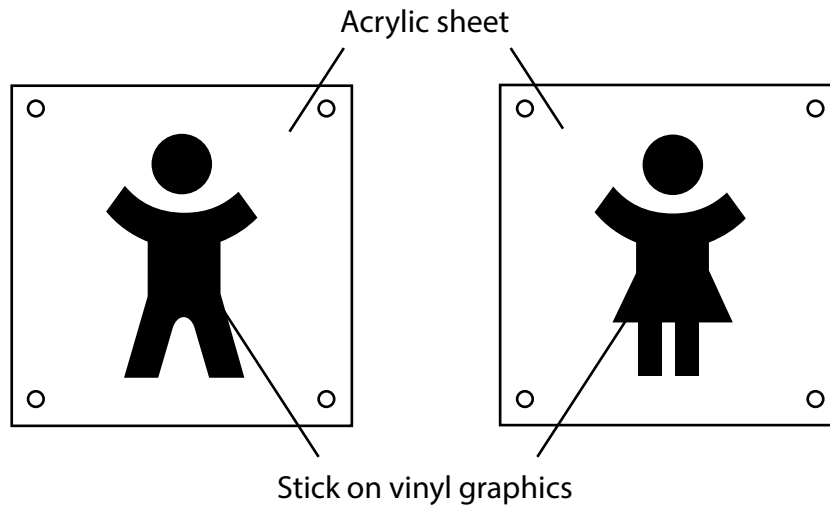
11 (a) The table below shows some tools, components and equipment.

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

Tools/Components	Name	Use
	French curve	(1)
	(1)	Used to draw any angle between 0° and 90°
	(1)	Rapid removal of soft materials
	RFID Tag	(1)



(b) The drawings below show two acrylic signs for the changing rooms in a school.



(i) Give **two** reasons why acrylic is a suitable material for the signs.

(2)

1

2

(ii) Give **three** reasons why signs often have graphic symbols rather than words.

(3)

1

2

3

(iii) One method of producing the graphic symbols for an acrylic sign is by using a vinyl cutter.

Give **two** other methods of producing the graphic symbols for an acrylic sign.

(2)

1

2



(iv) Explain **two** advantages of making the graphic symbols on a vinyl cutter rather than producing them by hand.

(4)

1

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2

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(c) The manufacturer of the door signs uses the internet for marketing and sales, which allows customers to design their own door signs.

Describe **two** advantages for the customer of using the internet to design their own door signs.

(4)

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(Total for Question 11 = 19 marks)

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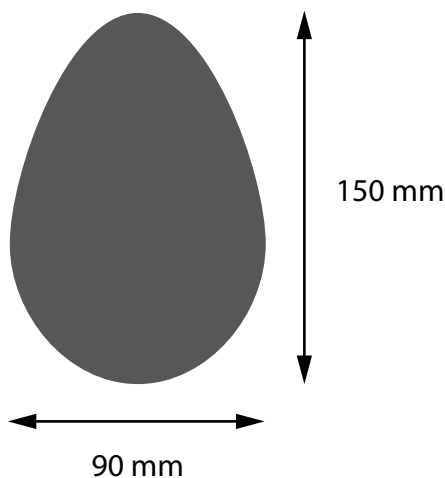
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12 The hollow chocolate egg shown below is to be promoted with a new package.

The egg will be wrapped in plain foil for protection and hygiene.



The specification for the package is that it must:

- hold the egg upright
- allow the egg to be seen
- have a closable lid
- show a graphic image to reflect an egg theme
- allow it to be hung up on display in a shop
- use a recyclable material
- use a commercial method of printing
- use a commercial finishing technique.

In the spaces opposite, use sketches and, where appropriate, brief notes to show **two different** design ideas for the promotional material 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)

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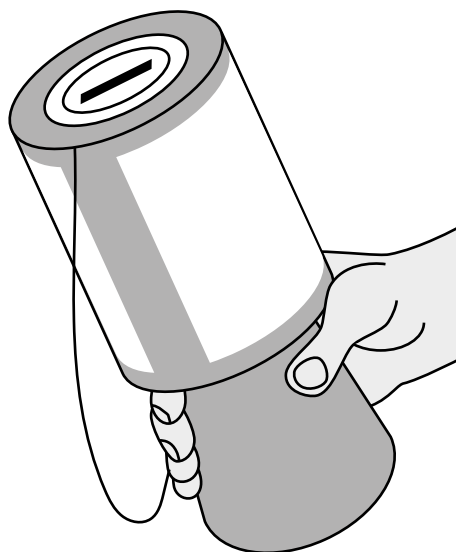
Design idea 2

(8)

(Total for Question 12 = 16 marks)



13 The drawing below shows a hand held collection container made from polyvinyl chloride (PVC).



(a) Give **two** properties of PVC that make it suitable for the collection container.

(2)

1

2

(b) Describe **one** reason why PVC is a better choice of material for the collection container than steel.

(2)

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(c) The collection container was designed using CAD software.

Describe **one** advantage of using a CAD system to design the hand held collection container.

(2)

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(d) Explain why the container is successful in meeting the following specification points:

(i) keeping the money inside secure

(2)

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(ii) fitting comfortably in the hand.

(2)

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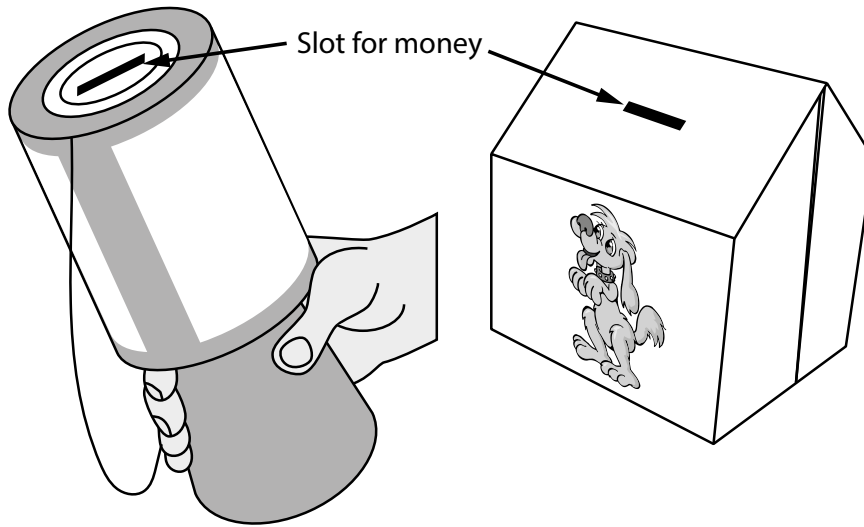
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*(e) The drawings below show two different types of charity collection container.



container A

Injection moulded in PVC

container B

Carton board flat pack box

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Evaluate **container A** and **container B** in terms of form and performance requirements.

(6)

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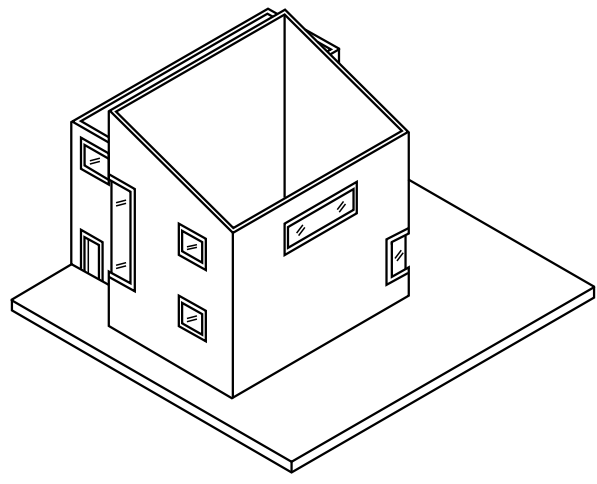
Area with horizontal dotted lines for writing.

(Total for Question 13 = 16 marks)



14 The drawing shows a pictorial view of an architectural model.

The walls have been made from jelutong.



(a) (i) Give **two** advantages of using jelutong to make the walls of the model. (2)

1

2

(ii) Styrofoam™ is often used for modelling 3D graphic products.
Explain **two** advantages of using Styrofoam™ to model 3D graphic products. (4)

1

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(b) Architectural models are made as a one-off.

(i) Give **three** disadvantages of making an architectural model as a one-off.

(3)

1

2

3

(ii) Architectural models can now be 3D printed.

Explain **two** advantages of using 3D printing to make architectural models.

(4)

1

2



* (c) Discuss the advantages for architects of producing 3D virtual models when designing new buildings.

(6)

Area with horizontal dotted lines for writing the answer.

(Total for Question 14 = 19 marks)

TOTAL FOR PAPER = 80 MARKS

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