

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**

Wednesday 17 June 2015 – 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 questions.**

**Some questions must be answered with a cross in a box ☒. 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 material is most suitable for a drinks container?

- A** folding boxboard
- B** corrugated board
- C** foil-lined board
- D** solid whiteboard

**(Total for Question 1 = 1 mark)**

**2** The sign below means:



- A** start the machine
- B** emergency stop button
- C** hand cleanser
- D** light dimmer

**(Total for Question 2 = 1 mark)**

**3** Aluminium is used for drinks cans because:

- A** it resists corrosion
- B** it biodegrades
- C** it is a ferrous metal
- D** it can be resealed

**(Total for Question 3 = 1 mark)**



4 Which **one** of the following wireless systems is used to connect several digital devices together?

- A Cosmic waves
- B Bluetooth
- C Microwaves
- D X-rays

(Total for Question 4 = 1 mark)

5 Which **one** of the following statements describes mass production?

- A many thousands of products are made
- B only one product is made
- C up to 100 products are made
- D one product with many components is made

(Total for Question 5 = 1 mark)

6 Which **one** of the following energy sources is renewable?

- A Coal
- B Natural gas
- C Solar
- D Crude oil

(Total for Question 6 = 1 mark)

7 A company is classed as a multinational when it has:

- A employees from different countries
- B offices and factories in one country
- C offices and factories in more than one country
- D large offices and factories with many floors

(Total for Question 7 = 1 mark)



8 Which **one** of the following statements is true?

- A most used glass bottles cannot be recycled
- B very few used glass bottles can be recycled
- C about 50% of all used glass bottles could be recycled
- D almost 100% of used glass bottles could be recycled

(Total for Question 8 = 1 mark)

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9 A transdermal patch is used as:

- A a method of applying medication
- B a hand warming device
- C an electrical solar device
- D a method of repairing torn vinyl

(Total for Question 9 = 1 mark)

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10 Built-in obsolescence means products:

- A will need constant maintenance
- B will never break down
- C are designed to wear out
- D are designed to look old fashioned

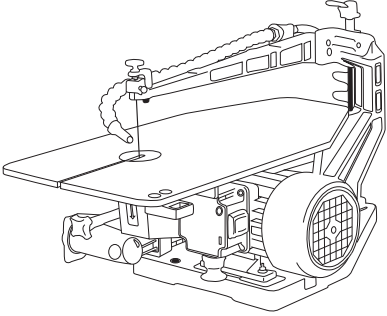
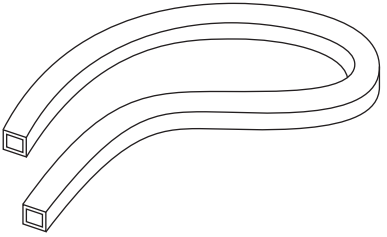
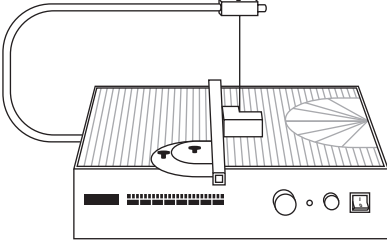
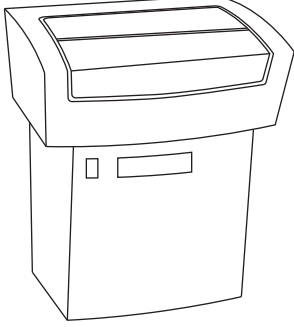
(Total for Question 10 = 1 mark)

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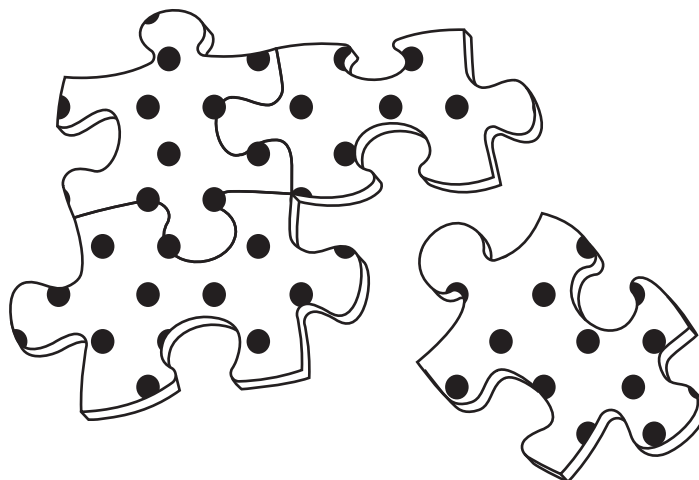
11 (a) The table below shows some equipment and components.

Complete the table by giving the missing names and uses.

Equipment/Component	Name	Use
	<p>Scroll saw</p>	<p>(1)</p>
	<p>(1)</p>	<p>Used for drawing curves</p>
	<p>(1)</p>	<p>Used to cut/slice/burn through foam to make shapes</p>
	<p>(1)</p>	<p>Uses a beam of light to accurately cut and engrave non-metallic material</p>



(b) The drawing below shows some pieces of a jigsaw puzzle made from medium density fibreboard (MDF).



(i) Give **two** properties that make MDF suitable for jigsaw puzzles.

(2)

1 .....

2 .....

(ii) Give **two** reasons why a laser cutter could be used to produce wooden jigsaw puzzles.

(2)

1 .....

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2 .....

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(iii) Describe **one** disadvantage of using a laser cutter when making wooden jigsaw puzzles.

(2)

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(iv) One method of transferring a single colour image onto the MDF jigsaw puzzle is screenprinting.

Describe the process of screenprinting.

(3)

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(c) Using CAD when designing products can be quick and accurate.

Describe **two** other benefits of using CAD for design work.

(4)

1 .....

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2 .....

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(d) Many products are now mass produced using CAM technology.

Explain **one** effect on the workforce of using CAM to manufacture products.

(2)

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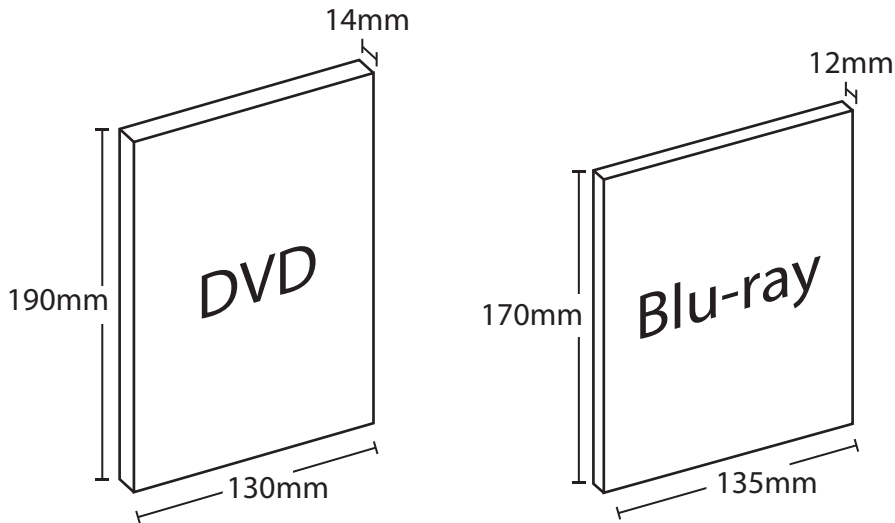
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**(Total for Question 11 = 19 marks)**



**12** A new wildlife film is being released on standard DVD and Blu-ray formats.

Examples are shown below.



A point of sale (POS) display stand is required to promote the sale of the film.

The specification for the display stand is that it must:

- hold six DVD cases and four Blu-ray cases
- display the front cover for both formats clearly
- allow easy removal and replacement of the cases
- be stable
- be easy to assemble
- have a wildlife theme
- use a commercial method of manufacture
- be made from materials appropriate to this manufacturing method

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

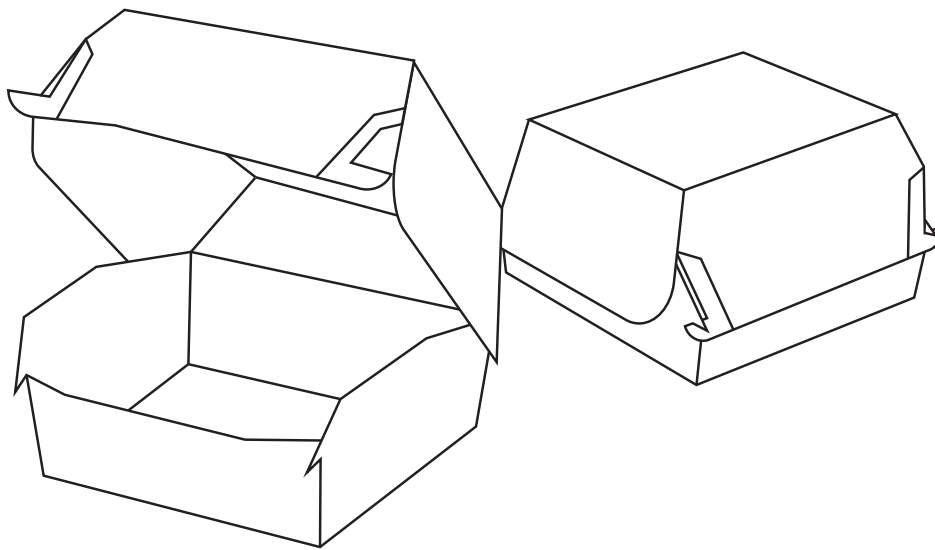
**(8)**

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**(Total for Question 12 = 16 marks)**



13 The drawing below shows a burger box made from solid white board.



(a) Solid white board is easy to cut and fold.

Give **two** other properties of solid white board that make it a suitable material for a burger box.

For each property, justify your answer.

(4)

Property 1 .....

Justification .....

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.....

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Property 2 .....

Justification .....

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(b) Explain **one** reason why mass production is appropriate for producing burger boxes.

(2)

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(c) Explain why the solid white board burger box is successful at meeting the following specification points.

(i) Keeps the lid securely closed

(2)

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(ii) Gives information to the customer

(2)

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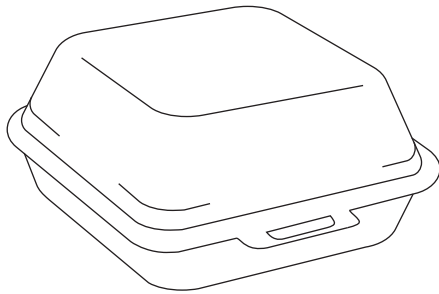
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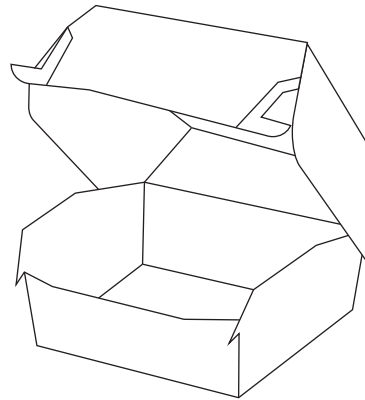


\* (d) The drawings below show two burger boxes.



Polystyrene box

Box A



Cardboard box

Box B

Evaluate Box A and Box B in terms of user requirements and environmental impact.

(6)

A series of horizontal dotted lines provided for writing the evaluation.

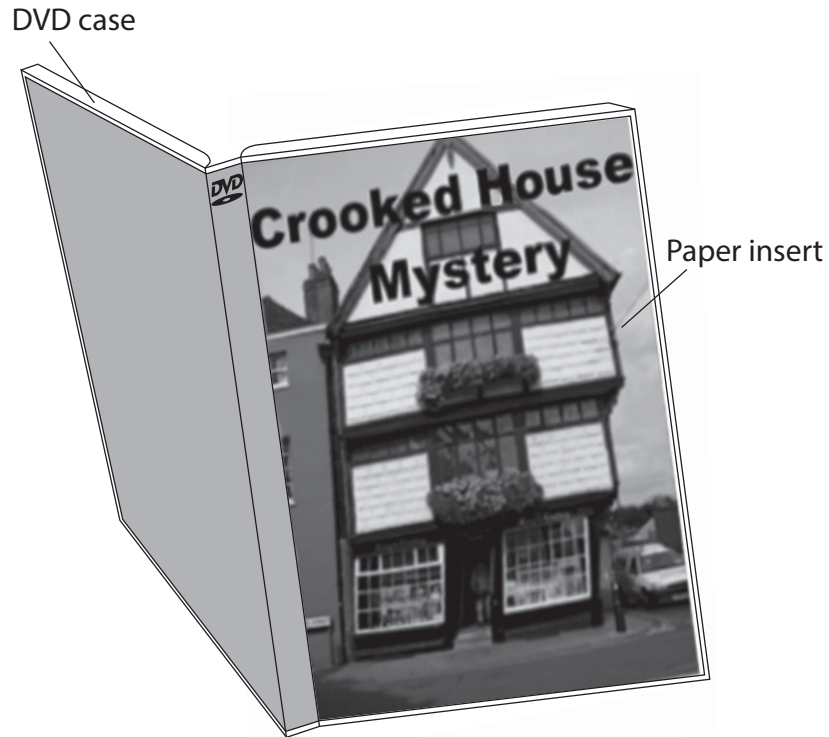


(Total for Question 13 = 16 marks)



P 4 4 7 4 8 A 0 1 3 2 0

14 A mass-produced DVD case with a full-colour printed paper insert is shown below.



(a) Offset lithography is to be used for the colour printing of the DVD paper insert.

(i) Explain **one** advantage of using offset lithography for printing.

(2)

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(ii) Name **one** quality control measure that is used in printing DVD paper inserts.

(1)

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(iii) Describe **one** situation where photocopying is a more suitable method for producing DVD paper inserts.

(2)

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(b) The DVD case is made from polypropylene

Explain **one** aesthetic property and **one** functional property of polypropylene when used for a DVD case.

(4)

Aesthetic property

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Functional property

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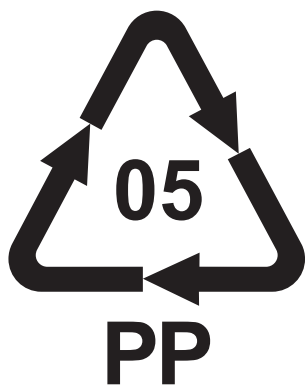
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The symbol below is embossed on the DVD case.



(c) Explain how this symbol can help to protect the environment.

(2)

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(d) Explain **one** disadvantage to the consumer of purchasing DVDs using the internet.

(2)

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