

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCE**

Centre Number

--	--	--	--	--

Candidate Number

--	--	--	--

# Design and Technology

**Product Design: Graphic Products**

**Advanced Subsidiary**

**Unit 2: Design and Technology in Practice**

Tuesday 2 June 2015 – Morning

**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 ►

P44903A

©2015 Pearson Education Ltd.

1/1/1



**PEARSON**

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

1 Figure 1 shows a safety sign which is often displayed in schools and colleges.



Figure 1

(a) State the meaning of this sign.

(1)

(b) The sign is made from rigid polystyrene.

State **one** functional and **one** aesthetic property of rigid polystyrene which makes it suitable for safety signs.

(2)

Functional

Aesthetic

(c) The safety sign features the use of phosphorescent pigments.

Describe how phosphorescent pigments use natural light to enhance safety signs.

(3)

(Total for Question 1 = 6 marks)



2 Paper and board are selected for specific applications based on their properties.

(a) Foil-lined board is often used for ready meal packaging.

In the space below, using annotated sketches, describe the structure of foil-lined board.

(3)



(b) Designers use a range of different types of paper and board in their work.

Outline how cartridge paper and layout paper are used by designers.

(4)

Cartridge paper



Layout paper



(Total for Question 2 = 7 marks)



3 Figure 2 shows a prototype block model for a fragrance bottle.

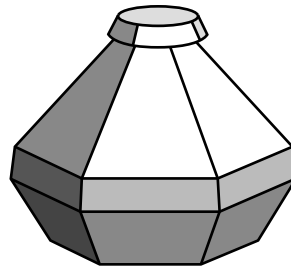


Figure 2

(a) Explain **one** reason why styrofoam is used for the prototype block model.

(2)

.....

.....

.....

(b) The designer could use a combination of materials to develop the prototype block model.

Complete the table below to give **one** advantage and **one** disadvantage for each material.

Material	Purpose	Advantages	Disadvantages
Jelutong	For making the main body of the model	(i)	(ii)
		(1)	(1)
PVC	For making the lid for the model	(iii)	(iv)
		(1)	(1)



(c) In recent years, prototype block models have rarely been produced by hand.

Outline **two** modern methods of producing prototype block models.

(4)

1 .....

.....

.....

.....

2 .....

.....

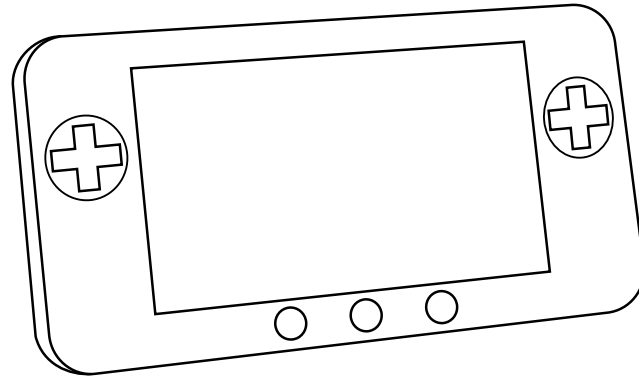
.....

.....

**(Total for Question 3 = 10 marks)**



4 Figure 3 shows a hand-held games console.



**Figure 3**

(a) Discuss how the development of advanced LCD technology has been beneficial to the hand-held games console market.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(b) The games console is accompanied by an instruction booklet, which consists of eight A5 pages.

Discuss why saddle-wire stitching is the most suitable method for binding the booklet together.

(3)

.....

.....

.....

.....

.....

.....

.....

.....



(c) The internal protective packaging holds the games console in place during transit.  
The packaging could be made from either recycled board or a thermoplastic.  
Discuss the suitability of these two materials for the internal protective packaging.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

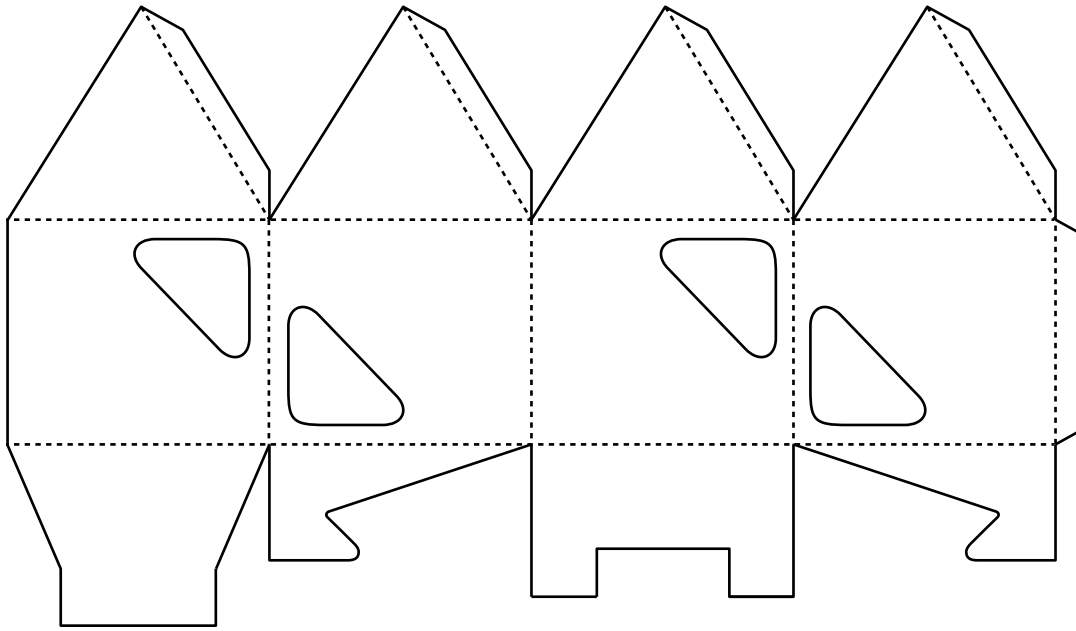
.....

.....

**(Total for Question 4 = 11 marks)**



5 Figure 4 shows the net for an item of packaging used for chocolates.



**Figure 4**

(a) In the space below, construct a two point perspective drawing of the completed packaging.

(5)

A large, empty rectangular box with rounded corners, intended for the student to draw a two-point perspective drawing of the completed packaging.





(b) The packaging is produced from solid white board.

Discuss the use of solid white board for this packaging.

(3)

.....

.....

.....

.....

.....

.....

(c) The packaging will include printed photographic images of the chocolates.

Explain why screen printing would not be suitable for producing large batches of the packaging.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

**(Total for Question 5 = 12 marks)**



6 Baked beans are often contained in tin-plated steel cans.

(a) Outline the benefits of using tin in the manufacture of cans for baked beans.

(4)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

\*(b) Cans for baked beans are often manufactured using a continuous production method.

Evaluate why this scale of production is appropriate for the cans.

(6)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....


.....

.....



(c) The graphics on some cans are applied using the flexography printing process.  
Using annotated sketches, describe the flexography process.

(5)



**(Total for Question 6 = 15 marks)**



7 (a) Outline the role of the International Standards Organisation (ISO).

(3)

.....

.....

.....

.....

.....

.....

.....

.....







**BLANK PAGE**



**BLANK PAGE**





**BLANK PAGE**

