

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCE**

Centre Number

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# Design and Technology

**Product Design: Graphic Products**

**Advanced**

**Unit 3: Designing for the Future**

Friday 8 June 2018 – Morning

**Time: 2 hours**

Paper Reference

**6GR03/01**

**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** Governments require cleaner design and technology solutions for consumer products.

(a) Outline the principles of minimising the disposal of waste to landfill during the manufacturing of consumer products.

(4)

(b) Discuss ways a manufacturer can reduce their carbon footprint efficiently and effectively.

(4)

**(Total for Question 1 = 8 marks)**



2 Computer-generated images (CGI) are widely used in modern film production.

(a) Explain **three** advantages of using CGI in film production.

(6)

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(b) Discuss how rotoscoping is used in CGI production.

(4)

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(Total for Question 2 = 10 marks)



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(5)



(c) Discuss the use of computer-aided quality control systems (CAQ) within a modern manufacturing facility.

(6)

(Total for Question 3 = 14 marks)



4 There are many energy options available within modern technological society.

(a) Explain **two** advantages of fossil fuels as a source of energy.

(4)

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2 .....

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(b) Discuss the disadvantages of biomass as a source of energy.

(6)

(Total for Question 4 = 10 marks)



- 5 (a) The streamlining movement led to a style of architecture known as 'Googie'.

Outline how streamlining has influenced architectural design.

(4)

- (b) Discuss how Raymond Loewy's design style has influenced industrial and product design.

(6)

(Total for Question 5 = 10 marks)



6 Modern and smart materials play a key role in many consumer products.

(a) Explain **one** advantage of using smart glass for the glazing of modern buildings.

(2)

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\*(b) Figure 1 shows an e-reader that utilises modern and smart materials.



**Figure 1**

Evaluate the use of e-readers as an alternative to magazines and books.

(8)

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(Total for Question 6 = 10 marks)



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**\*7** Discuss the use of quick response manufacturing (QRM) within industry.

(8)

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(Total for Question 7 = 8 marks)

**TOTAL FOR PAPER = 70 MARKS**



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