

Write your name here

Surname

Other names

Pearson
Edexcel GCE

Centre Number

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Candidate Number

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Design and Technology

Product Design: Graphic Products
Advanced

Unit 3: Designing for the Future

Tuesday 3 June 2014 – 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.
- 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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PEARSON

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

1 Thermochromic pigments have many innovative applications.

(a) Outline the household applications of thermochromic pigments.

(4)

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(b) Discuss the advantages and disadvantages of thermochromic pigments.

(4)

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(Total for Question 1 = 8 marks)



3 The demand for energy has increased dramatically over time.

(a) Discuss how industrialisation has changed the demand for energy.

(3)

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(b) Evaluate the use of water as a source of renewable energy.

(5)

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(Total for Question 3 = 8 marks)



4 Outline the advantages to the environment of recycling paper and board.

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(Total for Question 4 = 6 marks)



5 (a) Explain the difference between sequential product development and concurrent manufacturing.

(2)

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(b) In the development stage of concurrent manufacturing, systems designers can use quality function deployment (QFD).

State **two** advantages of using quality function deployment (QFD).

(2)

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(c) Discuss the concerns that consumers might have when purchasing items online.

(4)

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(Total for Question 6 = 12 marks)



7 (a) Outline the advantages of using computer-generated images (CGI) in car-driver training simulators.

(4)

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