

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: Resistant Materials Technology
Advanced**

Unit 3: Designing for the Future

Monday 8 June 2015 – Morning

Time: 2 hours

Paper Reference

6RM03/01

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 (a) (i) Give **four** advantages of video conferencing.

(4)

1

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2

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3

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4

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(ii) Give **two** disadvantages of video conferencing.

(2)

1

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2

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2 (a) Genetic engineering can be used to change the properties of timber.

Give **six** advantages of genetically engineered timber.

(6)

1

2

3

4

5

6



(b) Additives are used to change the properties of polymers.

(i) State **two** changes in the properties of plastic that occur when a foamant is added.

(2)

1

2

(ii) Explain **one** reason why fibres are added to a polymer.

(2)

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(Total for Question 2 = 10 marks)



3 Multinational companies often use 'offshore' manufacturing.

(a) Outline the advantages of 'offshore' manufacturing to multinational companies.

(6)

A series of horizontal dotted lines provided for writing the answer to question (a).



4 (a) Recycling materials plays an important role in preserving the world's natural resources.

Outline how products can be designed for recycling.

(4)

A series of horizontal dotted lines provided for writing the answer to the question.



(b) One influence on Art Deco styling was the 'celebration of the machine age'.

Figure 1 shows an example of Eileen Gray's Bibendum chair.



Figure 1

Outline how the philosophy 'celebration of the machine age' influenced the design of the Bibendum chair.

(4)

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(Total for Question 4 = 8 marks)



5 Water can be used as a source of energy.

Evaluate the use of hydro-electric power (HEP) to generate electricity.

Dotted lines for writing the answer.

(Total for Question 5 = 8 marks)



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*6 (a) Discuss the issue of 'repair versus replacement' from a consumer's point of view.

(6)

A series of horizontal dotted lines for writing the answer.



(b) Explain how a company may benefit from carrying out a life cycle assessment on its products.

(4)

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(Total for Question 6 = 10 marks)



(Total for Question 7 = 10 marks)

TOTAL FOR PAPER = 70 MARKS



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