

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

Tuesday 3 June 2014 – 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.*
- The marks available for spelling, punctuation and grammar are clearly indicated.

### 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 the questions.**

**Write your answers in the spaces provided.**

**1** (a) Many companies use a Local Area Network (LAN) for administration.

Give **four** advantages to a company of using a Local Area Network (LAN) compared to the internet.

(4)

1 .....

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2 .....

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3 .....

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4 .....

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(b) Describe in detail **one** way in which computer technology is used to control quality on a production line.

(4)

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



2 (a) Explain what is meant by the term 'artificial intelligence' (AI).

(2)

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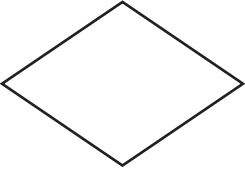


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(b) The table below shows symbols used in flow charts.

In the space provided state what the different symbols indicate.

(3)

	Symbol 1 .....
	Symbol 2 .....
	Symbol 3 .....

(Total for Question 2 = 5 marks)



3 (a) Biopol® is an environmentally friendly polymer used in manufacturing.

(i) Describe how Biopol® is produced.

(3)

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(ii) Give **three** environmentally friendly characteristics of Biopol®.

(3)

1 .....

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2 .....

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3 .....

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(b) Deforestation is a key environmental concern in timber production.

Give **six** harmful effects of deforestation.

(6)

1 .....

2 .....

3 .....

4 .....

5 .....

6 .....

**(Total for Question 3 = 12 marks)**



**4** Computer integrated manufacture (CIM) is the use of computer systems throughout the development of a product.

(a) Outline the advantages to manufacturers of using a product data management (PDM) system.

(4)

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- 5 The work of Philippe Starck is often considered to be highly creative.  
Figure 1 shows a juice squeezer that was designed by Philippe Starck.



**Figure 1**







(b) Anthropometrics is an important aspect of product design.

Outline the anthropometric considerations a designer should take into account when designing products.

(6)

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



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Lined writing area for the answer to Question 6.

**(Total for Question 6 = 13 marks)**





Lined writing area for the answer to Question 7.

**(Total for Question 7 = 10 marks)**

**TOTAL FOR PAPER = 70 MARKS**





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