



General Certificate of Education
Advanced Level Examination
June 2014

Design and Technology: Product Design (3-D Design)

PROD3

Unit 3 Design and Manufacture

Tuesday 3 June 2014 9.00am to 11.00am

For this paper you must have:

- an AQA 12-page unlined answer book
- normal writing and drawing instruments.

Time allowed

- 2 hours

Instructions

- Use black ink or black ball-point pen. Use pencil and coloured pencils only for drawing.
- Write the information required on the front of your answer book. The **Paper Reference** is PROD3.
- Answer **three** questions.
- Answer **one** question from **each** of Sections 1 and 2 and **one other** question from **either** section.
- If you choose to answer a question which has several parts, you should answer **all** parts of this question.
- Do all rough work in your answer book. Cross through any work that you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 84.
- There are 28 marks for each question
- You will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

Advice

- Illustrate your answers with sketches and/or diagrams wherever you feel it is appropriate.

Answer **three** questions.

Answer **one** question from each of Sections 1 and 2 and **one** other question from either Section.

For each question that you answer, you should answer all parts of that question.

Section 1

Question 1 Answer all parts of this question.

0	1
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Using a range of examples explain how designers use colour, texture and images to improve the usability of products for **all** consumers.

[14 marks]

0	2
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With reference to **two** different technological developments describe in detail how each has impacted on the evolution of modern electronic products.

[2 × 7 marks]

Question 2

0	3
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Explain in detail how 3-D CAD software has been used to improve each of the following areas of Product Design:

- concept development
- communication within the design team
- pre-production testing
- prototype production.

[4 × 7 marks]

Question 3

0	4
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With reference to a product with which you are familiar explain the different Quality Assurance and Quality Control procedures that would be suitable for each of the following production volumes:

- one off prototype
- large scale production of 100 000 units on an assembly line.

[2 × 14 marks]

Section 2

Question 4 Answer all parts of this question.

0 | 5 Write a material specification for a domestic mop bucket.

[8 marks]

0 | 6 Compare and contrast the manufacture of the two mop buckets shown in **Figures 1 and 2**.

Figure 1



Figure 2



You should refer to each of the following in your answer:

- benefits of the chosen manufacturing techniques
- methods of assembly.

[2 × 10 marks]

Turn over for the next question

Turn over ▶

Question 5 Answer all parts of this question.

0 7 Using specific product examples describe how and why a designer may use a patent.
[8 marks]

0 8 With reference to a specific industry, explain how mass production techniques developed during the 20th century to enable manufacturers to meet changing customer demand.
[20 marks]

Question 6

0 9 For **two** design movements/periods of your choice, analyse in depth a range of products that you think meet their criteria for good design.
[2 × 14 marks]

END OF QUESTIONS

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