



**GCE A level**

1113/01

**DESIGN AND TECHNOLOGY – DT3**  
**Product Design**

A.M. TUESDAY, 14 January 2014

2 hours 30 minutes

**ADDITIONAL MATERIALS**

In addition to this examination paper, you will need a 12 page answer book.

**INSTRUCTIONS TO CANDIDATES**

Use black ink or black ball-point pen.

Answer **three** questions from Section A.

Answer **three** questions from Section B.

Answer **two** questions from Section C.

**INFORMATION FOR CANDIDATES**

When and where appropriate, answers should be amplified and illustrated with sketches and/or diagrams.

**Section A and Section B** answers are designed to demonstrate your **breadth** of knowledge in Product Design.

Your **Section C** answers should be substantial and demonstrate your **depth** of knowledge in Product Design.

Candidates are reminded of the necessity for good English and orderly presentation in their answers.

**SECTION A**

Answer **three** questions from this section.

This section is designed to demonstrate your **breadth** of knowledge in Product Design.

**Each question carries 8 marks.**

1. Describe in detail, using diagrams if appropriate, a mechanical process of permanently joining two similar materials. [8]
  
2. Explain how CAD (Computer Aided Design) has influenced the development of concurrent engineering for high volume product manufacturers. [8]
  
3. The mobile phone and iPad have been subject to technology push and market pull forces in their product evolution.  
Explain how a different named product of your choice has been affected by these forces. [8]
  
4. (a) Explain the product life cycle using diagrams where relevant. [4]  
(b) Describe the product life cycle features of a fad product. [4]
  
5. Radical improvements can take place in a product during its lifetime.  
Identify a radical improvement that has been made to **four** different products and explain how **each** change has contributed to the improvement of the product. 4 × [2]

**SECTION B**

Answer **three** questions from this section.

This section is designed to demonstrate your **breadth** of knowledge in Product Design.

**Each question carries 8 marks.**

6. Explain why material selection is important to the success of products. [8]
7. (a) Explain what you understand by the term Quality Assurance. [4]  
(b) How does Quality Assurance impact on the production of products? [4]
8. Describe the physical properties and working characteristics of **two** man-made materials that you have used in your course of study. 2 × [4]
9. Discuss what you understand by the term Intellectual Property. [8]
10. Explain why extensive research is a significant factor in achieving a successful design outcome. [8]

### SECTION C

Answer **two** questions from this section.

Your answers should be substantial and show the **depth** of your knowledge in Product Design.

**Each question carries 26 marks.**

11. Identify a specific product, or range of products, and give a detailed account of the changes in design, function and styling introduced by a named product designer from the 1970s onward. [26]
12. Identify the properties of **two** specific named materials that have been used in the manufacture of a specific product and describe how their selection has impacted upon the manufacture and performance of the product. [26]
13. "Packaging is a reflection of our consumer society and to a large extent it has shaped the world we live in."

*Why shrink wrap a cucumber – Miller and Aldridge – Laurence King - 2012*

Discuss the benefits and limitations of packaging products. [26]

14. Explain, in detail, the importance of specific features of a design process that may be used to design innovative and creative products. [26]
15. "People will say nice things rather than be too critical. Also, we tend to edit out the bad so that we hear only what we want to hear....If instead of seeking approval, you ask, What's wrong with it? How can I make it better? you are more likely to get a truthful, critical answer."

*Paul Arden – Creative Director – Saatchi and Saatchi.*

Evaluate the relevance of this quotation to the creative and innovative activities of designing and making products. [26]

**END OF PAPER**