



GCE A level

1113/01

DESIGN & TECHNOLOGY

PRODUCT DESIGN DT3

P.M. WEDNESDAY, 13 June 2012

2½ plus your additional time allowance

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 or your usual method.

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(a) Fully describe the product life cycle using diagrams where relevant. [6]**
- (b) Draw a labelled diagram demonstrating the life cycle of an incrementally improved product. [2]**
- 2(a) State what you understand by the term target audience in relation to product design. [2]**
- (b) Give THREE reasons why researching a target audience plays such an important role in product design. [6]**

3. The product champion and the entrepreneur are two key facilitators in the process of innovation.

Considering the process of product innovation, describe the role of:

- (a) the product champion; [4]
- (b) the entrepreneur. [4]

4. Using diagrams where necessary, describe an industrial method of forming a particular named plastic sheet material. [8]

5. The materials chosen by designers for the manufacture of products often have a significant impact on sales.

- (a) Name and briefly describe TWO specific products that have benefited from the innovative use of materials. 2×[1]
- (b) Describe the typical characteristics of ONE material used in either product. [6]

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(a) Name TWO forms of product management systems that could be used in school when tracking the development of a product. [2]

(b) Explain ONE such system in detail. [6]

7(a) Explain the importance of on-going evaluation when designing. [4]

(b) Evaluate the impact that the design specification has on this process. [4]

- 8. Rights granted by the Intellectual Property Office can protect the outward appearance of a product.**
- (a) Name the form of Intellectual Property that affords this protection. [2]**
- (b) Describe the essential elements of this Intellectual Property. [6]**
- 9. Combining plastics with traditional materials has offered many new opportunities for product designers.**
- Name a specific material that has been enhanced in this way and describe how product designers have utilised the enhanced properties of the material. [8]**
- 10. When products are manufactured in volume, explain the part played by:**
- (a) Quality Control; [4]**
- (b) Quality Assurance. [4]**

SECTION C

Answer TWO questions from this section.

Your answer should be substantial and show the DEPTH of your knowledge in Product Design.

EACH QUESTION CARRIES 26 MARKS.

- 11. Give a detailed description of the aesthetic style of a designer you admire and explain how the designer has influenced the style of other similar products. [26]**

- 12. Discuss the value judgements that are implicit in most product design solutions particularly relating to economic, aesthetic and environmental considerations. [26]**

- 13. Designers need a detailed knowledge and understanding of materials to make successful products.**

Describe the particular purpose, characteristics and working properties of two materials that have been selected for use in a particular named product and explain what features made them appropriate for use. [26]

- 14. Describe how the development of a design consciousness within society has impacted on product design.**

In your answer discuss the materials selected, the manufacturing considerations, the product life cycle and the eventual disposal of the product.

[26]

- 15. ‘The art of designing is often said to be a social activity.’**

Explain how this phrase is depicted in the many activities that designers are involved with when designing a product. [26]