



GCE A level

1113/01

DESIGN AND TECHNOLOGY – DT3

PRODUCT DESIGN

A.M. TUESDAY, 4 June 2013

2½ hours 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, 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 Outline the factors that determine the price that a product is sold for in the market place. [8]**

- 2(a) Explain the reasons why a product manufacturer must identify any risks associated with the use of a particular named product. [4]**

- (b) Identify FOUR risks associated with the use of a specific named product. 4 × [1]**

- 3 Explain how high 'build quality' of products can impact on product sales in the market place. [8]**

- 4 Describe how, as part of your research, you would analyse an existing product prior to embarking on a design task. [8]

- 5 Describe, using diagrams where appropriate, how you would create permanent folds in a particular sheet material and how these folds affect the design of the product. [8]

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 Describe how the promotion of a product will vary depending on the anticipated life cycle of the product. [8]**
- 7 Outline the information you would expect a designer to present in the detail designing stage of a prototype product. [8]**
- 8(a) Identify a SPECIFIC thermosetting composite material and describe TWO of its main properties. 2 × [2]**
- (b) Describe how ONE of these properties has been utilised by designers to improve the function of a product. [4]**

9(a) Name a specific SMART material. [1]

(b) Describe TWO of its main properties. 2 × [2]

(c) Explain how these properties have been exploited by product designers. [3]

10(a) Name TWO forms of production management systems. 2 × [1]

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

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 A thorough knowledge and understanding of the properties of materials has a key role to play in the design of successful products.**

Identify a specific material and explain in detail how TWO of its primary properties make the material suitable to the function of a specific product or group of products. [26]

- 12 Compare the work of TWO designers you are familiar with, indicating how they have developed their design style and how this style has influenced the development of similar products on the market. [26]**

- 13 “The goal of sustainable design is to make all products 100 per cent cyclic, social, solar and safe.”

EDWIN DATSCHEFSKI – THE TOTAL BEAUTY OF SUSTAINABLE PRODUCTS.

Suggest ways that product designers can make a significant contribution towards this sustainable target in terms of the four aspects of design identified by Edwin Datschefski. [26]

- 14 “Designers cannot help but give their products visual form. That visual form may be nondescript, inelegant or just plain ugly. Or it can be transformed, by styling, into a thing of beauty, admired for how it looks rather than what it does.”

PRODUCT DESIGN – MIKE BAXTER - THORNES - 1999

Discuss this statement with particular reference to a specific product or a range of products on the market today. [26]

- 15 **Evaluate the part that CAD and CAM have played in the development of high volume product manufacturing. [26]**