GCE A level

1113/01

DESIGN AND TECHNOLOGY – DT3
Product Design

A.M. TUESDAY, 4 June 2013

2½ hours

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. 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]

