

General Certificate of Education
June 2005
Advanced Subsidiary Examination



**DESIGN AND TECHNOLOGY: PRODUCT DESIGN PD1D
(3D DESIGN)
Unit 1 Materials and Components**

Tuesday 7 June 2005 Morning Session

In addition to this paper you will require:

- an unlined answer book (7024) which is provided separately;
- normal writing and drawing instruments;
- a colour Insert Sheet (enclosed).

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen. Pencil and coloured pencils should be used only for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. *The Paper Reference* is PD1D.
- Answer Question 1 and any **two** of Questions 2 to 4.
- Use the Insert Sheet included to help you answer **Questions 1(a), 2 and 3**.

Information

- The maximum mark for this paper is 100.
- 40 marks are allocated to Question 1, 28 to each of Questions 2 to 4, and 4 marks overall are for quality of written communication.
- Mark allocations are shown in brackets.
- This paper carries 30 per cent of the total marks for AS and 15 per cent for Advanced Level.
- You are reminded of the need for good English and clear presentation. The quality of your written communication will be assessed across all questions.

Advice

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

Answer Question 1.

1 (a) Study the photographs on the Insert Sheet provided.

Choose **two** products from the list below and answer the following questions.

- Mini disc player case
- Pencil case
- Drinks bottle

(i) Stating the **two** chosen products, name a suitable specific material used in their manufacture. *(2 x 2 marks)*

(ii) Explain what properties make these materials suitable for these **two** products. *(2 x 6 marks)*

(iii) Using notes and diagrams, explain how **each** of these chosen products is manufactured. *(2 x 9 marks)*

(b) Explain why plastics are used extensively in the manufacture of cars. *(6 marks)*

Answer any **two** questions from 2, 3 and 4.

2 Study **Figures 1** and **2** on the Insert Sheet, which show a skateboard.

- (a) (i) Name a specific material used in the manufacture of part A, (the board) on **Figure 1**.
(2 marks)
- (ii) Explain why this material is suitable. (6 marks)
- (iii) Using notes and diagrams explain how part A (the board), would have been manufactured.
(9 marks)
- (b) (i) Name a specific material used in the manufacture of part B, (wheel assembly) on **Figure 2**.
(2 marks)
- (ii) Using notes and diagrams, explain how part B, (wheel assembly) could have been manufactured. (9 marks)

3 Study **Figures 3** and **4** on the Insert Sheet, which show two different types of task lamp.

- (a) Compare and contrast the two lamps in terms of the materials used and the methods of manufacture. (2 x 10 marks)
- (b) Describe **two different** finishes that could be used to enhance the aesthetic appearance of metal products. (2 x 4 marks)

4 (a) Name a common application for **each** of the following materials.

- (i) Beech
- (ii) Polypropylene
- (iii) Urea Formaldehyde
- (iv) Brass (4 x 1 mark)

- (b) Explain why **each** material is suitable for your named application. (4 x 6 marks)

END OF QUESTIONS

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE

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Unit PD1D**

**The photographs on this sheet are for use in answering:
Questions 1, 2 and 3**

Refer to these photographs for Question 1(a)



Mini disc player

'Sony' and 'Mini Disc' are registered trademarks of Sony Corporation, Japan.



Pencil case

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Drinks bottle

Turn over ►

Refer to these photographs for Questions 2 and 3

Figure 1

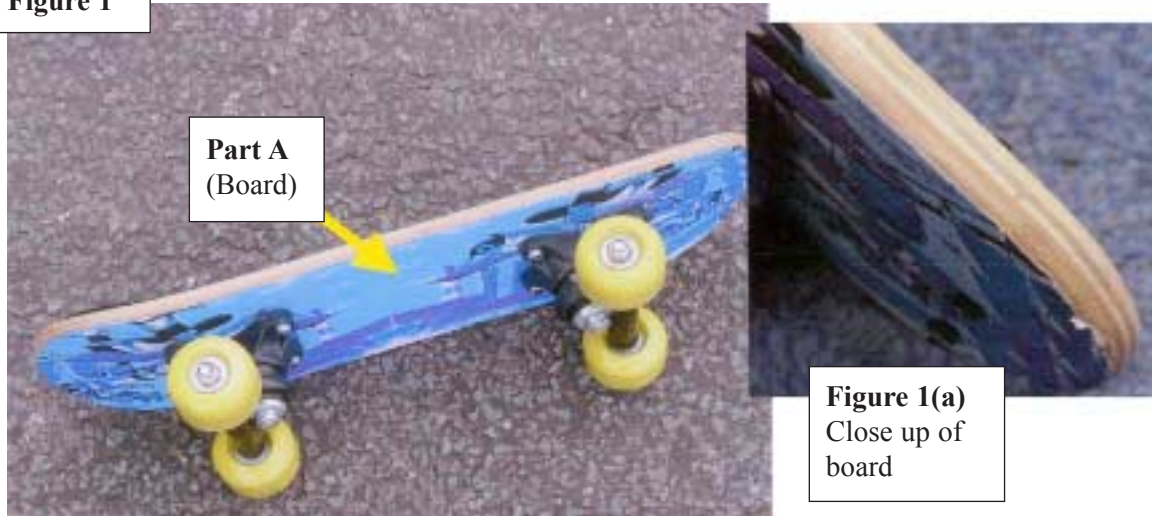


Figure 2

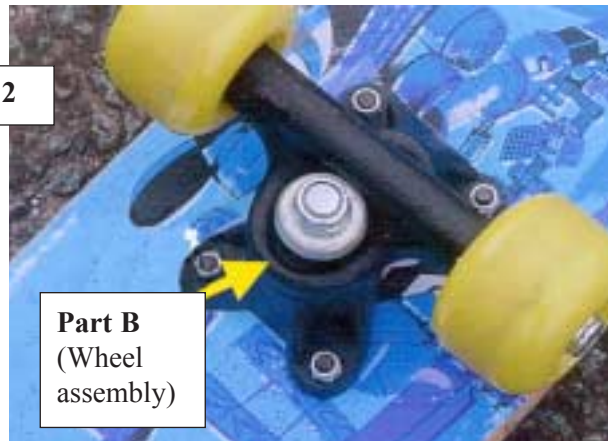


Figure 3



Figure 4

