



**General Certificate of Education**

**Design and Technology:  
Product Design (3-D Design)  
6551**

**PD6D Written Paper**

**Report on the Examination**

**2007 examination – June series**

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*Dr Michael Cresswell Director General.*

## **General**

Students should be familiar with the content of the three sections of the specification so that they can see how the questions relate to each section.

There was no obvious preference for any particular question and nothing to suggest that candidates had insufficient time to complete their answers. Few candidates included annotated sketches in their answers, including those where they are specifically asked for. A number of candidates did not complete the front of answer books correctly and there was an increase in the number where answers are disjointed within a script, additional pages handed in untitled and out of order.

## **Section A: Materials and Components**

### ***Question 1***

- (a) In the main this question was answered poorly by the majority of candidates with little to show that the “technical” properties were fully understood. Malleability and hardness were often confused with ductility and toughness, thermal conductivity with thermal radiation, quoting thermos flasks or tin foil in the answers, and stability with strength and the ability of furniture not to fall over rather than a reference to an absence of grain structure and moisture content affecting movement, warping etc. Generic terms such as “strong”, “easy to use” etc. were frequently used. Products were typically non specific.
- (b) The common error was to confuse hardness with impact/toughness.

### ***Question 2***

This was a popular and reasonably successful question with most candidates scoring well. Microwave ready meal containers being the main one for errors where plastics and processes of manufacture were frequently wrong. It was assumed that microwave heat must require a thermosetting polymer in order to maintain shape and not melt.

## **Section B: Design and Market Influences**

### ***Question 3***

- (a) Although popular the answers given were often superficial. Simply stating that larger buttons and curved sides would improve the ergonomics of the mobile phone would earn low level marks. A small number of candidates were quite imaginative and creative, providing solutions which applied a high level knowledge of ergonomics/anthropometrics in their answers. A small number suggested that a rotary/spindle handle for the can opener and locking handles would be improvements and these were rewarded accordingly.
- (b) In respect to colour being used to improve the function of a specific product, very simple answers were the norm.

#### **Question 4**

This was not a popular question and the majority of the answers given were simply descriptions of two products with limited attempts to discuss the opening statement relating originality, excellence and utility. Better candidates used appropriate examples and frequently made reference to issues like Bauhaus ethics of form / function, successfully comparing these with Memphis / Post Modern design.

### **Section C: Processes and Manufacture**

#### **Question 5**

- (a) Motor vehicles and plastic bags/bottles were the most popular choice of named product and some accurate and detailed answers were written. A significant number of candidates concentrated upon the final disposal of the product and answered with only limited and basic reference to manufacture. Many candidates appeared to believe that if we recycle everything, everything will be alright. Rarely did they consider how, why and with what effect specific materials could be recycled
- (b) Similarly in this part there was often a concentration upon either advertising or initial research to improve commercial success. Rarely was the whole picture discussed.

#### **Question 6**

Although popular and often being rewarded with good marks, once again there is apparent confusion regarding the application of specific plastics to suit named products, with many generic statements included. In particular there remains confusion between thermoplastics and thermosetting plastics. Processes appropriate for manufacture using the latter appear to be not well known.

#### **Mark Ranges and Award of Grades**

Please see the following link:

<http://www.aqa.org.uk/over/stat.html>