



**General Certificate of Education (A-level)  
June 2011**

**Design and Technology:  
Product Design**

**PROD3**

**(Specification 2550)**

**Unit 3: Design and Manufacture**

***Report on the Examination***

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### **General Comments:**

Although this was the second entry for this unit it is disappointing to report that a number of candidates failed to follow the rubric of the paper and did not complete three different questions, instead only answering parts of questions. The style and format of the paper is now established and candidates must be made familiar with this prior to sitting the examination.

The overall quality of answers suggests that there needs to be more focus on the various aspects of Design and Manufacture found within the specification.

Answers were often answered superficially and based upon very basic, purely observational descriptors with only limited ability to analyse, explain and discuss.

Centres need to ensure they are accessing the resources available to assist in the teaching of the principles involved. These principles and an understanding of the language of design and manufacture as well as candidates desire to explore design concepts were rarely expressed with the scripts.

Increasingly scripts lacked legibility and candidates should note the details on the front cover of the paper which relate to quality of written communication, use of specialist vocabulary and advice on the use of illustration.

Many candidates do not include annotated sketches alongside their text in order to communicate in the most effective manner.

Within the mark scheme each individual question shows a correlation between the quality of written communication and the award of marks.

### **Section 1**

#### **Question 1**

**01** Candidates were required to explain the use of materials in relation to two specific chairs. Although these chairs are 'classics' in world of design, very few candidates expressed a depth of knowledge of either materials or their application other than that which was taken from a simple observation of what could be seen in the photographs. Quite a number believed that figs 5 and 6 of the Barcelona chair were a simple indication that the chair could be used out of doors, with the cushions removed.

Better candidates were aware of the benefits of lamination and basic metal forming techniques, some were able to introduce their knowledge of Bauhaus and how it's principles of form and function had been applied.

Marks were given for aesthetic observation, but this was frequently expressed at only a simplistic level and so generated low level marks.

#### **Question 2**

**02** This question required an understanding of ergonomics and anthropometrics as applied to the environment of either domestic kitchens or car interiors.

In general candidates were aware of the basics of these sciences but many were only able to refer to a small number of quite obvious features, most of which related to size and dimensions. A small number of answers referred to a single product such as a kettle.

**03** Aspects of the affect of consumer products upon the environment are clearly well documented in the media today and so many candidates chose to write a response to this part of the question. A relatively small number of answers included a detailed reference to legislation and regulation in their explanations. The use of energy was not a popular selection.

### **Question 3**

**04** Knowledge of how specific materials degrade was clearly not understood by most candidates and the application of most finishes was described at a very simplistic level indeed. Understanding of the use and protection of aluminium is especially poor, surprisingly a knowledge of the protection of card and drinks cartons was better.

### **Section 2**

### **Question 4**

**05** This question which was potentially more straightforward, being given an option of 6 different manufacturing processes with candidates required to explain when and why four of them would be used. Personal experience of using centre owned laser cutters meant that many answers were successful whereas the remaining manufacturing technologies, with the exception of injection moulding, appear to be less well known. Offset lithography was understood in only basic terms with few being aware of printing primaries and its use as a versatile and economic process. Rapid prototyping and its application, particularly to a specific industry was sometime explain successfully although some were not aware that this was a specific and identifiable process. Die casting was occasionally confused with sand casting or simply a duplication of injection moulding.

Calendaring was again known of in a simplistic way or occasionally confused with time planning and the use of something similar to a diary or gantt chart.

### **Question 5**

**06** Although this might be considered to be a 'staple' design question it did not appear to be more popular or better answered than other questions.

A number of candidates, usually from the same centre did give good answers but the variety of product chosen to be representative of 'good design' was quite limited. iPod and iPhones followed by Dyson cleaners proving to be by far the most popular choice. Although, potentially ideal as a vehicle to demonstrate function, aesthetics and originality it is once again quite disappointing that so few Advanced level design students possess only rudimentary knowledge of such iconic products, this is despite actually owning and using such products on a daily basis.

Some candidates failed to respond to the wording of the question and simply described the product they had selected.

**07** Although more of an environment than a product, the walk in shower or wet room proved to be the most popular choice for candidates who chose to answer this question. Some responses were quite good with a varied amount of detail regarding changes made to suit the elderly or those with a disability. As was expected, most described changes which already exist rather than suggesting potential improvements but reward was obviously given. Those who described changes to a mobile phone stated the most obvious things such as 'bigger buttons' and a large screen.

### **Question 6**

**08** This was generally well answered with many candidates able to demonstrate some knowledge of the many techniques and systems used within an industry today. Sometimes vague descriptions of certain acronyms, ranging from JIT to FMS, QRM, EPOS etc suggested that candidates knew of them but not what they actually stood for.

**09** Given that this question asked candidates to refer to their own coursework experience some were able to excel whilst weaker candidates wrote of only one or two issues or failed to link what they did to any desire to produce a quality outcome which met a design brief.

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