



ASSESSMENT and
QUALIFICATIONS
ALLIANCE

Mark scheme

June 2001

GCE

**Design and Technology:
Product Design**

Unit PD1D

Unit 1: 3D Design

Quality of Written Communication

The following marks are allocated to the quality of the candidate's written communication. Make a separate assessment of the candidate's overall ability as demonstrated across these papers using the criteria given below.

Performance Criteria	Marks
The candidate will express complex ideas extremely clearly and fluently. Sentences and paragraphs will follow on from one another smoothly and logically. Arguments will be consistently relevant and well structured. There will be few, if any, errors of grammar, punctuation and spelling.	4
The candidate will express moderately complex ideas clearly and reasonably fluently, through well-lined sentences and paragraphs. Arguments will be generally relevant and well structured. There may be occasional errors of grammar, punctuation and spelling.	3
The candidate will express straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Arguments may sometimes stray from the point or be weakly presented. There may be some errors of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas.	2
The candidate will express simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Arguments may be of doubtful relevance or obscurely presented. Errors in grammar, punctuation and spelling may be noticeable and intrusive, suggesting weaknesses in these areas.	1

Question 1

Allocate 12 marks equally to each product.

Accept essay style answers and/or comparison charts but do not reward simple, generalised descriptions of the photographs, reference should be made to the different materials and the probable methods of manufacture.

Traditional use of solid timber. An element of craftsmanship, relevant construction techniques. Labour intensive – one-off or batch production methods. Finish applied after construction. Range of techniques and use of more than one, expensive material. Accept any possible timber not MDF etc. Mass-production methods – single material/no applied finish.

Durable, Colourful, Waterproof etc

Forming methods accept injection moulding/rotational – blow but not vacuum forming. (2×12 marks)

Question 2

- (a) 12 marks for a detailed description of either sand casting/die casting/plastic moulding techniques.

Use of metal – aluminium or concrete, thermoplastic, plastic resin etc
Sketches will be necessary and should be annotated for the award of marks.

(12 marks)

- (b) Straightforward – simple answers – only 3 marks available but differentiate by detail/correct and specific terminology not wood/metal.

(4×3 marks)

Question 3

- (a) (i) Any reasonable suggestion, does not have to be a hardwood but simple “wood” is not sufficient. Good answers may refer to Aesthetics – grain, cost, availability managed supply, durability.

NB Answers which refer to a non-timber material should be accepted, eg tube steel.

(5 marks)

- (ii) Traditional mortice/tenon – dowel joint, even KD fitting.

(8 marks)

- (b) (i) Chipboard, block/laminboard, MDF, plywood, also glass
Uniformity, cost, size available, stability, etc.

(6 marks)

- (ii) Should be applied finish not veneer. Interior varnish, wax etc

(5 marks)

Question 4

- (i) Ability to be mass-produced – injection moulded, colour, weight, toughness (6 marks)
- (ii) Weight, able to be moulded to shape, absorb shock, cost (6 marks)
- (iii) Malleable, cost, non-finished heat reflective, not reactive hygienic (6 marks)
- (iv) Heat treatment possible, forged to shape, cost. (6 marks)

Question Total	96
Quality of Written Communication	4
Paper Total	100