

Version 1.0

GCSE 2004

June Series



Mark Scheme

Design and Technology: Graphic Products *(3553/Short Course Higher)*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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The answers given in the following mark schemes are neither exhaustive nor exclusive. Candidates whose answers do not appear directly on the mark scheme, but who have demonstrated knowledge, understanding, or skills relevant to the question will receive appropriate credit for their answers.

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ASSESSMENT AND QUALIFICATIONS ALLIANCE
GENERAL CERTIFICATE OF SECONDARY EDUCATION

June Examination 2004

Design and Technology Graphic Products

Short Course Higher Tier

Question 1 Data Representation

Bar Chart			
(a)	Accuracy	three correct height \pm 1mm	3 marks
	(visual check)	two correct	2 marks
		one correct	1 mark
		none correct	0 marks
			(3 marks)
b)	Colour (inc. hatching)	good, even, within borders	2 marks
		some outside borders	1 mark
		consistently outside borders/not attempted	0 marks
			(2 marks)
(c)	Labels	all three bars colours (hatching) match key	1 mark
		incorrect	0 marks
			(1 mark)
			Total 6 marks

Question 2 Designing

Decoration – Mountains

Three relevant ideas of good quality, each developed (3 x 2)	6 marks
Satisfactory designs, mountains suggested (pro rata 1 mark)	
Not attempted (pro rata 0 marks)	0 marks
(6 marks)	

Colour

Used or indicated	1 mark	(1 mark)
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Logo

Good quality development of an idea	3 marks
Discrete ideas or limited evidence of development or single line	2 marks
One idea	1 mark
Totally inappropriate/not attempted	0 marks
(3 marks)	

Printing finishing effect

(Stated or shown)	
Is a suitable effect indicated? (what?)	1 mark
Appropriate to design (where?)	1 mark
Not appropriate	0 marks
(2 marks)	

Evaluation (Best Evidence)

Critical, relevant	3 marks
Superficial, self congratulatory, labels	2, 1 mark
Not attempted	0 marks
(3 marks)	

Total 15 marks

Question 3 Presentation

(i)	Use of spec: pro rata, one mark per criteria logo with A1C mountains colours - quality enhancement techniques (credit if shown in Qu2) lid and sides with designs	5 x 1 mark	(5 marks)
(ii)	Quality of Drawing: Very good line quality, clear, neat, etc. Adequately drawn, some reasonable lines A fair attempt, lacks precision Scribble/Not attempted	3 marks 2 marks 1 mark 0 marks	(3 marks)
(iii)	Combining Ideas All designs faithfully brought forward Most designs brought forward Some designs brought forward Nothing brought forward (<i>different design</i>)	3 marks 2 mark 1 mark 0 marks	(3 marks)
(iv)	Layout Very effective, consistently good, e.g. spacing, proportion, good use of space, guide lines Satisfactory, sense of composition, adequate spacing, some imperfections An attempt but lacks clarity and/or poorly spaced, crowded Unrecognisable or not attempted	3-2 marks 1 mark 0 marks	5-4 marks (5 marks)
(v)	Colouring Good quality, enhances drg, visual impact, e.g. good tonal control, very good block colouring Satisfactory, controlled use of media, some attempt at higher skills e.g. tone, block colour Moderate quality, some enhancement, (<u>good monochrome max.</u>) Poor quality, untidy/scribble, does little to enhance product An attempt – very poor, scribble No colour – line drawings only	5 marks 4 marks <u>3 marks</u> 2 marks 1 mark 0 marks	(5 marks)

Total 21 marks

Question 4 Locking mechanisms

- (a) **Function** – clear, explanation in sketches and notes.
- | | | |
|--|---------|-----------|
| Cut/tab/Slit | 3 marks | |
| ‘Arrow head’ or serrated tab (2 max for additional material) | 2 marks | |
| Friction – no locking | 1 mark | |
| Incorrect, not attempted | 0 marks | (3 marks) |
- Quality**
- | | | |
|---|---------|-----------|
| e.g. good alignment and sizes, likely to fit well | 2 marks | |
| will lock but some inaccuracies | 1 mark | |
| will not lock, not attempted | 0 marks | (2 marks) |

Total 5 marks

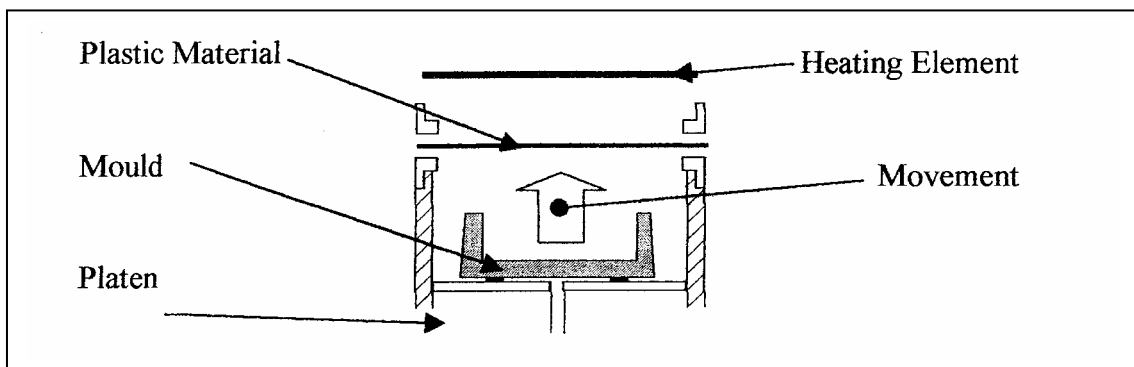
Question 5 Enlargement & B.S.

- (i) Neat, accurate outline successfully transferred 3 marks
 Fair attempt, some correct features 2 marks
 An attempt, foot/toe shapes apparent 1 mark
 Not easily recognised, poor size or not attempted 0 marks (3 marks)
- (ii) BS Neat leader lines 1 mark
 Dimension lines solid, parallel, correct length, with neat arrowheads 1 mark
 Numbers, above line, centre position 1 mark (3 marks)
- Scale 2:1 (only possible answer) 1 mark (1 mark)

Total 7 marks

Question 6 Vacuum Forming

- (a) Parts Identified correct parts (*Pro Rata*) 5 x 1 marks (5 marks)



(b)	Diagram	A stage in vac forming (raised)	1 mark	
		In same style e.g. 2D, proportion, alignment	1 mark	
		Neatness, good line quality	1 mark	
		Untidy, all freehand, blunt pencil	0 marks	(3 marks)
	Notes	Clear assist understanding of stage. Labelling	2 marks	
		Some confusion	or 1 mark	
		Not attempted	0 marks	(2 marks)
(c)	(i)	Thermoplastics	1 mark	(1 mark)
		(ii)	PVC, HIPS, Polystyrene, polythene (PE) acrylic/Perspex (PMMA), polyester, polypropylene (PP) ... any thermoplastic	1 mark

Total 12 marks**Question 7 *Equipment & Materials****Responses relative to given example*

(a)	(i)	Equipment	e.g. Spirit/Pantone/felt tip pen/highlighter pen/ marker pen e.g. Craft/modelling knife glue gun/hot glue/low melt adhesive	3 x 1 marks	(3 marks)
		(ii)	Uses	e.g. Rendering background, edging, details Cutting modelling materials Gluing 'blister' to card	3 x 1 marks
(b)	<i>e.g. heat causes the crystals in the film to change colour, seen on outside by temp. marker, when cool crystals revert to 'black' and temp. bar disappears. Reversible process</i>				
	Good understanding, e.g. reversible, line moves up/down scale			4 marks	
	Some understanding, ref. inks, crystals, pigments			3 marks	
	An understanding, basic terms, ref. to colour/temperature			2 marks	
	A fundamental knowledge, vague – how thermometer works			1 mark	
Incorrect, not attempted			0 marks	(4 marks)	

Total 10 marks

Question 8 Environmental, Cultural, Social Issues

e.g. some suggestion of contamination, health risk, see product all related to fresheners

- | | | | |
|-------------|--|---------------|-----------|
| (a) REASONS | Correct statement, clearly expressed,
e.g. preserves scent, tamper proof, protects contents | (2 x 2) marks | |
| | Vague, one word | (2 x 1) marks | |
| | Not attempted, inappropriate reasons | 0 marks | (4 marks) |

(b) Must relate to this package.

- | | | | |
|-------------------|---|---------|----------|
| (i) non-renewable | | 1 mark | (1 mark) |
| | <i>e.g. oil based, finite resources, plastics</i> | | |
| | Justified statement, reasons clearly expressed | 1 mark | |
| | Incorrect | 0 marks | (1 mark) |

- | | | | |
|------------|---|---------|-----------|
| (ii) Card: | <i>e.g. unsightly, litter, bio-degradable, rot, decompose</i> | | |
| | Clearly reasoned, good understanding | 3 marks | |
| | Some understanding, not fully explained, | 2 marks | |
| | An attempt | 1 mark | |
| | Incorrect, not attempted | 0 marks | (3 marks) |

- | | | | |
|--------------------|--|---------|-----------|
| Plastic container: | <i>e.g. unsightly, litter, not bio-degradable, small animals</i> | | |
| | Clearly reasoned, good understanding | 3 marks | |
| | Some understanding, not fully explained | 2 marks | |
| | An attempt | 1 mark | |
| | Incorrect, not attempted | 0 marks | (3 marks) |

(c) *e.g. accept any suitable recycling image and reward the following features*



- | | | | |
|---------------|---|---------|-----------|
| <u>Image:</u> | 50% stated – must include % sign | 1 mark | |
| | Colour | 1 mark | |
| | good representation of symbol, wide arrows, shape, 'cyclic' etc | 3 marks | |
| | adequate representation, loss of detail, single line | 2 marks | |
| | an attempt, some connection to correct symbol | 1 mark | |
| | Incorrect. Not attempted | 0 marks | (5 marks) |

(d) (i) Advantage	e.g. <i>ref. to: preserves, environmental, resources,</i> <i>Do not accept: cheaper</i>		
	good understanding e.g. example given	2 marks	
	an attempt e.g. no example	1 mark	
	Not attempted, one word answer	0 marks	(2 marks)
(ii) Disadvantage	e.g. <i>quality diminishes in proportion to amount of</i> <i>recycled material, colour, strength, less attractive,</i> <i>lower quality, bleeds</i>		
	good understanding e.g. example given	2 marks	
	an attempt e.g. no example	1 mark	
	Not attempted, one word answer	0 marks	(2 marks)
(e) Reference to contamination of contents, toxic, germs		1 mark	
(i) Explanation of health problems	clear, concise, implied, suggested	1 mark	
	Incorrect context e.g. recycling, pollution	0 marks	(2 marks)
(ii) Reward if in context, accept signs, symbols on package	e.g. recycling logos, pictograms, BSI symbols, poster/ advertising campaign	1 mark	(1 mark)

Total 24 marks**Total Paper 100 marks**