

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

MARK SCHEME for the June 2004 question papers

9705 DESIGN AND TECHNOLOGY

9705/01 Paper 1 (Written 1), maximum raw mark 120

9705/03 Paper 3 (Written 2), maximum raw mark 120

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the June 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.



Grade thresholds taken for Syllabus 9705 (Design and Technology) in the June 2004 examination.

	maximum mark available	minimum mark required for grade:		
		A	B	E
Component 1	120	72	64	35
Component 3	120	93	81	50

The thresholds (minimum marks) for Grades C and D are normally set by dividing the mark range between the B and the E thresholds into three. For example, if the difference between the B and the E threshold is 24 marks, the C threshold is set 8 marks below the B threshold and the D threshold is set another 8 marks down. If dividing the interval by three results in a fraction of a mark, then the threshold is normally rounded down.

June 2004

GCE A AND AS LEVEL

MARK SCHEME

MAXIMUM MARK: 120

SYLLABUS/COMPONENT: 9705/01

DESIGN AND TECHNOLOGY

Written 1



Page 1	Mark Scheme	Syllabus	Paper
	DESIGN AND TECHNOLOGY – JUNE 2004	9705	1

Section A

1	(a) Two hazards identified	2 x 1	2	
	(b) Methods of preventing hazards	2 x 1	2	
	(c) Basic sketching to show some understanding about how jig/former could be used	0 - 2		
	Good sketching used to show good understanding about how a jig/former could be used	3		
	Excellent sketching used to show full details about how a jig/former could be used	4	4	8
2	(a) Temporary joint named Quality and depth of explanation	1 up to 3	4	
	(b) Moveable joint named Quality of explanation	1 up to 3	4	8
3	Sectional view	up to 3		
	Basic sketching used to give some details of process	0 - 2		
	Good quality sketching used to give most details about how the pieces would be riveted together	3 - 4		
	Excellent sketching used to give full details of the riveting process	5	8	8
4	(a) Quality and depth of description	up to 4	4	
	(b) Quality and depth of description	up to 4	4	8
5	Basic sketching which shows some detail of mechanism	0 - 3		
	Good quality sketching which shows most details of mechanism	4 - 6		
	Excellent sketching which gives full details of mechanism	7 - 8	8	8

Total mark for Section A – 40

Page 2	Mark Scheme	Syllabus	Paper
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Section B

6	(a)	Basic standard of sketching which gives some details about making wooden base	0 - 3		
		Good quality of sketching which gives good detail about making of wooden base	4 - 7		
		Excellent sketching which gives full details about how the wooden base would be made	8 - 10		
	(b)	Basic standard of sketching which gives some details about how the acrylic shade would be made	0 - 3		
		Good quality sketching which gives good detail about making the shade	4 - 7		
		Excellent sketching which gives full details about how the shade would be made	8 - 10		
					20
7	(a)	Basic standard of sketching which gives some details about a method of joining	0 - 2		
		Good quality of sketching used to give good details about a method of joining	3 - 4		
		Excellent sketching which shows full details about a method of joining	5 - 7	7	
	(b)	3 pieces identified	1		
		4 or 5 pieces identified	2		
		6 to 7 pieces identified	3		
		Details on size	up to 4	7	
	(c)	Basic description which gives some details about process	0 - 2		
		Good description of process	3 - 4		
		Excellent description of process with full details about working environment, application of paint and cleaning of equipment	5 - 6	6	20
8	(a)	Basic standard of sketching which gives some details of turning process	0 - 3		
		Good quality of sketching used to give most details about how the container would be turned	4 - 7		
		Excellent sketching which gives full details about how the container would be turned	8 - 10	10	
	(b)	Basic standard of sketching which gives some details about how the edge would be finished	0 - 2		

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Good quality of sketching used to give most details about polishing the edge 3 - 4

Excellent sketching used to give full details about how the edge would be polished 5 5

(c) Basic standard of sketching which gives some details about how the two parts would be joined 0 - 2

Good quality of sketching used to give most details about how the two parts would be joined 3 - 4

Excellent sketching used to give full details about how the two parts would be joined 5 5 20

Total mark for Section B – 60

Section C

- 9 (a) Two finishes named 2 x 1 2
- (b) Explanation up to 2 2
- (c) Hazard identified 1
Appropriate solution suggested 1 2
- (d) (i) Basic to good standard of sketching used to give some details about tongue and grooved boards 0 - 2
- Excellent sketching which gives full details about tongue and grooved boards 3 3
- (ii) Basic to good standard of sketching used to give some details about how the planks and frame would be joined 0 - 2
- Excellent sketching used to give full details about how planks and frame would be joined 3 3
- (e) (i) Explanation up to 2 2
- (ii) Appropriate selection 1
Advantages identified up to 2
Critical discussion of issues up to 3 6 20

Page 4	Mark Scheme	Syllabus	Paper
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10	(a) Two reasons given	2 x 1	2	
	(b) Explanation	up to 2	2	
	(c) Advantages/disadvantages identified	up to 3		
	Critical discussion of issues	up to 3	6	
	(d) (i) Suitable material	1		
	Suitable process	1	2	
	(ii) Suitable material	1		
	Suitable process	1	2	
	(e) Relevant merits identified	up to 3		
	Critical discussion of issues	up to 3	6	20
11	(a) Suitable situations identified	4 x 1	4	
	(b) Influence of factors identified	up to 3		
	Critical discussion of issues	up to 3	6	
	(c) (i) Explanation	up to 2	2	
	(ii) Advantages/disadvantages identified	up to 2		
	Critical discussion of issues	up to 2	4	
	(d) (i) Advantages/disadvantages identified and discussed	up to 2		
	(ii) Advantages/disadvantages identified and discussed	up to 2	4	20

Total mark for Section C – 60

June 2004

GCE A AND AS LEVEL

MARK SCHEME

MAXIMUM MARK: 120

SYLLABUS/COMPONENT: 9705/03

DESIGN AND TECHNOLOGY

Written 2



Page 1	Mark Scheme	Syllabus	Paper
	A/AS LEVEL – JUNE 2004	9705	3

Section A

Part A – Product Design

1	description of tool use	5			
	variation re materials	3			
	quality of communication	2	10 x 2	20	
2	(a) appropriate material including:				
	- aluminium				
	- acrylic				
	- laminated beech/birch	1			
	reasons including:				
	- lightweight				
	- easy to form	2	3		
	(b) description to include:				
	- appropriate method;				
	- shaping;				
	- bending				
	quality of description:				
	- fully detailed	3 - 6			
	- some detail,	0 - 2			
	quality of sketches	up to 2	8		
	(c) explanation could include:				
	- change in process;				
	- change in materials;				
	- use of templates, jigs, formers;				
	- simplification of design.				
	quality of explanation:				
	- logical, structured	4 - 7			
	- limited detail,	0 - 3			
	quality of sketches	up to 2	9	20	
3	(a) (i) preparation of surface		2 x 2		
	(ii) application method		2 x 2		
	(b) features of finish	2			
	appropriateness	2			
	quality of explanation	2	6 x 2	20	

Page 2	Mark Scheme	Syllabus	Paper
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Part B – Practical Design

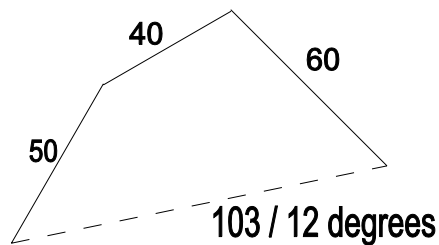
4 for (a) and (b):

methods described	5 x 2		
comparisons	4		
suitability for purpose	2 x 2		
quality of sketching	2		20

5 for each:

- tool	1 x 5		
- mechanism described	3 x 5		20

6 (a) A tie	1		
B strut	1		
(b) example	1		
explanation	1		
(c) diagram	2		
magnitude 103	1		
direction 12 degrees	1		



(d) example	1		
description	2	3 x 4	20

Page 3	Mark Scheme	Syllabus	Paper
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Part C – Graphic Products

7	diameter	1	
	wedge follower	2	
	minimum distance	2	
	anti clockwise	1	
	SHM	4	
	uniform velocity	4	
	construction	3	
	displacement diagram	3	20
8	Correct perspective	3	
	detail - window	3	
	- floor cabinets	3	
	- wall cabinet	3	
	- door	2	
	- sink	3	
	- table	3	20
9	Discussion should refer to:		
	- designing;		
	- costing;		
	- stock control;		
	- manufacture.		
	overall comprehension and interpretation	2	
	examination of issues	up to 6 marks	
	- broad range	4 - 6	
	- limited	0 - 3	
	quality of explanation	up to 8 marks	
	- detailed, logical	6 - 8	
	- some detail	3 - 5	
	- limited,	0 - 2	
	supporting examples/evidence	up to 4 marks	20