

## CAMBRIDGE INTERNATIONAL EXAMINATIONS GCE Advanced Subsidiary Level and GCE Advanced Level

## MARK SCHEME FOR the November 2002 question papers

## 9705 Design and Technology

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

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

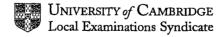
These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking 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 discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the November 2002 question papers for most IGCSE, Advanced Subsidiary (AS) Level and Advanced Level syllabuses.



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**NOVEMBER 2002** 

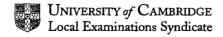
## **GCE Advanced Subsidiary Level**

MARKSOLENE

**MAXIMUM MARK: 120** 

SYLLABUS/COMPONENT:9705/1

DESIGN AND TECHNOLOGY (WRITTEN 1)



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Mark Scheme Page 1 AS Level Examinations - November 2002

WWW. Papa Cambridge.com Section A Mark Mark on script Any from nuts and bolts, screws, two-piece snap fittings etc. 3 x 1 3 2 a) Ductile, malleable, very good electrical conductor. (any two). 2 2 x 1 b) Plasticised PVC. 1 1 3 Good description of property linked to example if possible. Properties such as - non corroding, does not tarnish, durable, natural finish or range of finishes available etc.  $4 \times 2$ 8 4 (i) Accurate sketch of gears 2 Good descriptive notes to explain change of angle through 1 1 Suitable application. (ii) Accurate sketch of gears 2 Good descriptive notes to explain change of movement from 1 rotary to linear. Suitable application. 1 5 For each method -Good description which covers the main aspects of storing. harnessing and generation. Tidal (i) 3 3 Hydroelectric (ii) 3 3 (iii) Wave 3 3 6 (i) Time - available, start and finish times, scheduling, costing etc. 3 3 Facilities – space, equipment, tools etc. (ii) 3 3 (iii) Materials - ease of working, health & safety issues, cost etc. 3 3 40

	Page 2	Mark Scheme	Syllau	L.D.	
	raye z	AS Level Examinations – November 2002	9705	OD,	1
		그 그는 그 전에 생기하게 한 생일을 받으니다. 한 때 하시다		Papal	dr.
					10
7a -	Part A - Ac	Section B rylic (any suitable)	1		
/4		hogany (any suitable)	1	2	
7b	Excellent sketching techniques shown. All details of the preparation described. All stages covered and in order. Tools and machines identified.				
	Sketching of a good standard. Suitable details of the preparation of materials given. Most stages identified and in reasonable order. Majority of tools and machines named.				
	and the second s	ning techniques used. Limited details of preparation. stages considered with limited knowledge of tools and	0-3	10	
7c	Suitable me	thod shown – possibly slots, raised insert etc.	1		
	Feasibility.		1		
	Adequate d	escription of a method supported by good sketching.	2	4	
7 <b>d</b>	Suitable mo Shaping. Sketching	dification/shaping shown with clear detailed sketch.	2 2	4	20
8a		- advantages are - needs no finish, lightweight etc.  Limitations - difficult to join.  - advantages are - easy to join, cost effective etc	1 1 1		
		Limitations are – heavy, needs protection etc.	1	4	
8b		e sensible suggestion which could be – easy to join at s, ability to rest top onto flat surfaces etc.	2 x 2	4	
8c	manufactur	ketching techniques shown. All details of the e described. All stages covered and in order. Tools, and materials identified.	7-8	. •	
٠	given. Mos	of a good standard. Suitable details of the manufacture at stages identified and in reasonable order. Majority of times and materials named.	3-6	* :: -	
		thing techniques used. Limited details of manufacture. stages considered with limited knowledge of tools and	0-2	8	٠
8d	Suitable m	odification shown with clear detailed sketch.			
		anism - function, feasibility, construction.	3 x 1	4	

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0-2

20

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9a Four relevant points - e.g. ease of use, safety in use, ability to pickup from variety of surfaces, lightweight, cost etc. 7-8 Excellent sketching techniques shown. Two different ideas shown. All details of the construction described. Correct materials, tools and machines identified. Sketching of a good standard. Two different ideas shown Suitable 3-6 details of the construction given. Majority of materials, tools and machines named. Basic sketching techniques used. Two similar or even one idea only. 0-2Limited details of construction. Only a few details of materials, tools or equipment shown. All stages considered in detail and presented in correct order. 9c 7-8 Most aspects considered in some detail and ordered. 3-6

Basic outline described.

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Syllab 9705

4-6

20

				13
10a	Section C From: safety, interest, physical activity, colour, range of activity, maintenance, cost, durability etc.	4 x 1	4	
10Ь	For any two of the parts of the equipment the discussion should involve reference to different materials and could involve:  - Safety - Construction - Finishing - Assembly - Corrosion - Colour - Etc  Critical examination of issues - up to 3 marks Quality of explanation - up to 3 marks Supporting examples/evidence - up to 2 marks		16	20
11a	Four suitable requirements – safe, size, interest, colour, construction, etc		4	
11b	Any three advantages – colour, warmth, ease of construction, finishing etc.  Any three limitations – splinters, grain weaknesses, time to finish, weight etc.		6	
11c	<ul> <li>(i) Suitable toy selected.         Sketch of toy.         Materials stated.</li> <li>(ii) For basic outline of process using competent annotated sketches and limited awareness of moulds, machinery etc.</li> </ul>	1 2 1 0-3	4	

For detailed outline of process showing greater understanding of above and good annotated sketches.

Mark Scheme
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Page 5	Mark Sche	me	Syllab
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Wooden laminated could be - beech, birch, ash, elm etc.

12a

Metal tube could be - aluminium, steel. 2 x 1 12b Candidates should provide a discussion which focuses on the advantages and limitations of the selected materials. Key points would be: Laminate material: Any two advantages - grain structure, bends easily, steams well, finishing etc. 2 Any two limitations - splinters, grain weaknesses, time to finish, 2 Tubular material: Any two advantages - bends easily, malleable, strength, finish, easily joined. 2 Any two limitations – weight, needs surface finish etc. 2 8 12c Excellent sketching/notes shown. All details of the manufacture described. Tools and machines identified. Sketching/notes of a good standard. Suitable details of the 2-3 manufacture given. Majority of tools and machines named. Basic sketching/notes used. Limited details of manufacture. 0-1 Limited knowledge of tools and equipment. Relevant description of form - curved frame, smaller cross-12d sections etc. Critical examination of issues - up to 2 marks Quality of explanation - up to 2 marks Supporting examples/evidence - up to 1 marks