

**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*.

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**CAMBRIDGE**  
INTERNATIONAL EXAMINATIONS

**NOVEMBER 2002**

**GCE Advanced Subsidiary Level**

**MARK SCHEME**

**MAXIMUM MARK : 120**

**SYLLABUS/COMPONENT : 9705 /1**

**DESIGN AND TECHNOLOGY  
(WRITTEN 1)**



UNIVERSITY of CAMBRIDGE  
Local Examinations Syndicate

Page 1	Mark Scheme	Syllabus	Paper
	AS Level Examinations – November 2002	9705	

### Section A

		Detail Mark	Mark on script	Total Mark
1	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). b) Plasticised PVC.	2 x 1 1	2 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 x 2	8	
4	(i) Accurate sketch of gears Good descriptive notes to explain change of angle through 90 Suitable application.	2 1 1	4	
	(ii) Accurate sketch of gears Good descriptive notes to explain change of movement from rotary to linear. Suitable application.	2 1 1	4	
5	For each method – Good description which covers the main aspects of storing, harnessing and generation.			
	(i) Tidal	3	3	
	(ii) Hydroelectric	3	3	
	(iii) Wave	3	3	
6	(i) Time – available, start and finish times, scheduling, costing etc.	3	3	
	(ii) Facilities – space, equipment, tools etc.	3	3	
	(iii) Materials – ease of working, health & safety issues, cost etc.	3	3	40



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<b>9a</b>	Four relevant points – e.g. ease of use, safety in use, ability to pick-up from variety of surfaces, lightweight, cost etc.	<b>4 x 1</b>	<b>4</b>
<b>9b</b>	Excellent sketching techniques shown. Two different ideas shown. All details of the construction described. Correct materials, tools and machines identified.	<b>7-8</b>	
	Sketching of a good standard. Two different ideas shown Suitable details of the construction given. Majority of materials, tools and machines named.	<b>3-6</b>	
	Basic sketching techniques used. Two similar or even one idea only. Limited details of construction. Only a few details of materials, tools or equipment shown.	<b>0-2</b>	<b>8</b>
<b>9c</b>	All stages considered in detail and presented in correct order.	<b>7-8</b>	
	Most aspects considered in some detail and ordered.	<b>3-6</b>	
	Basic outline described.	<b>0-2</b>	<b>8 20</b>



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- 12a** Wooden laminated could be – beech, birch, ash, elm etc.  
Metal tube could be – aluminium, steel. 2 x 1 2
- 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, etc. 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. 4-5
- Sketching/notes of a good standard. Suitable details of the manufacture given. Majority of tools and machines named. 2-3
- Basic sketching/notes used. Limited details of manufacture. Limited knowledge of tools and equipment. 0-1 5
- 12d** Relevant description of form – curved frame, smaller cross-sections etc.
- Critical examination of issues - up to 2 marks
- Quality of explanation - up to 2 marks
- Supporting examples/evidence - up to 1 marks 5 5 20