

# UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Advanced Subsidiary Level and GCE Advanced Level

## MARK SCHEME for the November 2004 question paper

### 9705 DESIGN AND TECHNOLOGY

9705/01

Paper 1 (Written 1), maximum raw mark 120

This mark scheme is 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 November 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.



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

	maximum mark available	minimum mark required for grade:		
		A	B	E
Component 1	120	78	71	40

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.

**November 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 – NOVEMBER 2004	9705	1

### Section A

<b>1</b>	<b>(a)</b> Tools and equipment identified up to 2 Process explained up to 2	4	
	<b>(b)</b> Tools and equipment identified up to 2 Process explained up to 2	4	<b>8</b>
<b>2</b>	<b>(a)</b> Three fuels correctly named 3 x 1	3	
	<b>(b)</b> Three energy sources correctly named 3 x 1	3	
	<b>(c)</b> Two forms of energy correctly named 2 x 1	2	<b>8</b>
<b>3</b>	Process explained up to 3 Size of holes determined up to 2 Sectional view up to 2 Quality and clarity of communication 1	8	<b>8</b>
<b>4</b>	<b>(a)</b> Some details of process 1 Good details of process 2-3 Full details of process 4 Quality and clarity of communication 1	5	
	<b>(b)</b> Each feature identified 2 x 1 Quality and clarity of communication 1	3	<b>8</b>
<b>5</b>	<b>(a)</b> Some understanding of ductility shown 1 Good understanding of ductility shown 2 Full understanding of ductility shown 3	3	
	<b>(b)</b> Basic sketching techniques used showing limited details of an appropriate test. Some knowledge of equipment required 0-2  Sketching of good quality showing most details of the test. Good knowledge of equipment required 3-4  Excellent sketching techniques showing all details of the test. Full knowledge of equipment required 5	5	<b>8</b>
<b>Total mark for Section A</b>			<b>40</b>

Page 2	Mark Scheme	Syllabus	Paper
	DESIGN AND TECHNOLOGY – NOVEMBER 2004	9705	1

### Section B

<b>6</b>	<b>(a)</b> Suitable wood named 1 Two reasons given 2 x 1	3	
	<b>(b)(i)</b> Basic sketching used to show some understanding of the formers required 0-2  Good quality sketching used to show a good understanding of the formers required 3-4  Excellent sketching used to show full details of the formers required 5-6	6	
	<b>(ii)</b> Basic sketching used to show some understanding of the process 0-2  Good quality sketching used to show a good understanding of the process 3-4  Excellent sketching used to show full details of the process 5-6	6	
	<b>(c)</b> Basic sketching used to show some details about an appropriate joining method 0-2  Good quality sketching used to show good details about an appropriate joining method 3-4  Excellent sketching used to show full details about an appropriate joining method 5	5	<b>20</b>
<b>7</b>	<b>(a)</b> Suitable metal named 1 Two reasons given 2 x 1	3	
	<b>(b) (i)</b> Basic sketching used to show some details about how the pattern would be made 0-2  Good quality sketching used to show good details about how the pattern would be made 3-4  Excellent sketching used to show full details about how the pattern would be made 5-6	6	
	<b>(ii)</b> Basic sketching used to show some details about the process 0-2  Good quality sketching used to show good details about the process 3-4  Excellent sketching used to show full details of the casting process 5-6	6	

Page 3	Mark Scheme	Syllabus	Paper
	DESIGN AND TECHNOLOGY – NOVEMBER 2004	9705	1

	(c) Basic sketching used to show some details about a method of attachment 0-2		
	Good quality sketching used to show good details about how the sign could be attached 3-4		
	Excellent sketching showing full details about how the sign could be attached 5	5	<b>20</b>
<b>8</b>	(a) Suitable plastic named 1 Two appropriate reasons given 2 x 1	3	
	(b) At least 3 stages identified 1 4-5 stages correctly identified 2 6 plus stages correctly identified 3 Correct order of work up to 2	5	
	(c) (i) Basic sketching used to show some details about how the hole would be made 0-2		
	Good sketching used to show good details about how the hole would be made 3-4		
	Excellent sketching used to show full details about how the hole would be made 5	5	
	(ii) Basic sketching used to give some details about how the bends would be made 0-2		
	Good sketching used to show good details about how the bends would be made 3-4		
	Excellent sketching which gives full details about how the bends would be made 5	5	
	(iii) Process described up to 2	2	<b>20</b>
	<b>Total mark for Section B</b>		<b>40</b>

Page 4	Mark Scheme	Syllabus	Paper
	DESIGN AND TECHNOLOGY – NOVEMBER 2004	9705	1

### Section C

<b>9</b>	<b>(a)</b> Explanation up to 2	2	
	<b>(b)</b> Appropriate joint named 1	1	
	<b>(c)</b> Explanation up to 2	2	
	<b>(d)</b> Advantages/disadvantages identified up to 4 Critical discussion of issues up to 3	7	
	<b>(e)</b> Suitable materials identified 2 x 1	2	
	<b>(f)</b> Advantages/disadvantages identified up to 3 Critical discussion of issues up to 3	6	<b>20</b>
<b>10</b>	<b>(a)</b> Mechanism named 1	1	
	<b>(b)</b> Power source given 1	1	
	<b>(c) (i)</b> Properties explained up to 2	2	
	<b>(ii)</b> Thermoplastic named	1	
	<b>(d) (i)</b> Advantages/disadvantages identified up to 3 Critical discussion of issues up to 2	5	
	<b>(ii)</b> Advantages/disadvantages identified up to 3 Critical discussion of issues up to 2	5	
	<b>(iii)</b> Advantages/disadvantages identified up to 3 Critical discussion of issues up to 2	5	<b>20</b>
<b>11</b>	<b>(a)</b> Suitable plastic named 1 Suitable process named 1	2	
	<b>(b)</b> Advantages/disadvantages identified up to 2 Critical discussion of issues up to 2	4	
	<b>(c)</b> Three hazards identified 3 x 1 Critical discussion of issues up to 3	6	
	<b>(d)</b> Ergonomic factors identified up to 4 Critical discussion of issues up to 4	8	<b>20</b>

**Total mark for Section C 40**