



*Rewarding Learning*

General Certificate of Secondary Education  
January 2013

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**Manufacturing**

Paper 1

Assessment Unit 3

*assessing*

Manufacturing Technology

**[GMA31]**

**WEDNESDAY 16 JANUARY, MORNING**

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**MARK  
SCHEME**

			AVAILABLE MARKS	
1	(a)	Walkie Talkie Satellite dish (2 × [1])	[2]	4
	(b)	Bicycle Four in One multi tool (2 × [1])	[2]	
2		Knock down fitting Scroll Saw Twist Drill Sash Cramp Marking Gauge Try Square	[5]	5
3	(a)	(i) Computer Aided Design	[1]	13
		(ii) Staff need trained to use it	[2]	
	(b)	(i) Computer Aided Manufacture	[2]	
		(ii) Accurate manufactured products Works 24/7 Others considered.	[2]	
	(c)	(i) Appropriate example of a traditional method of manufacture which has been replaced by the use of CAM.	[2]	
(ii) Lead times are reduced. More accurate designs can be manufactured. Others considered. (2 × [2])	[4]			
4	(a)	High set up costs of machinery Maintenance of machinery Others considered. (2 × [2])	[4]	12
	(b)	Workforce has been reduced in size More skilled workforce is required. Others considered. (2 × [2])	[4]	
	(c)	Products have become smaller in size, weight/density, ease of use, disposability and reclaimability. Others considered. (2 × [2])	[4]	

			AVAILABLE MARKS
<b>5</b>	<b>(a)</b> Accurate communication between each stage of production. Reduced lead times due to CAD. Others considered. (2 × [2])	[4]	
	<b>(b)</b> Use of the Internet. Others considered.	[2]	
	<b>(c)</b> CAD can model products in 3D. Edit products on screen, e.g. colour/size, etc. Others considered.	[2]	
	<b>(d)</b> Staff need trained Others considered.	[2]	10
<b>6</b>	<b>(a)</b> Keep up with competitors. Demands/wants of the consumer Others considered.	[2]	
	<b>(b) (i)</b> Appropriate product stated.	[1]	
	<b>(ii)</b> Outline how the new technology used during manufacture has improved the quality of this product.	[2]	
	<b>(c)</b> More pollution Others considered	[2]	7
<b>7</b>	<b>(a)</b> Reduced lead times. Others considered	[2]	
	<b>(b)</b> Staff need trained Others considered	[2]	4
<b>8</b>	<b>(a)</b> Accuracy of positioning of products throughout their manufacture. Robotic measurements taken throughout their manufacture. Others considered (2 × [2])	[4]	
	<b>(b)</b> To ensure that products do not have to be returned. Others considered.	[2]	
	<b>(c)</b> The product is safe to use. Customer satisfaction.	[2]	8

			AVAILABLE MARKS
<b>9</b>	<b>(a)</b>	Appropriate product stated	
	<b>(i)</b>	Modern Materials – Description of how the product stated has been affected by modern materials. [2]	
	<b>(ii)</b>	Systems and control technology – Description of how the product stated has been affected by systems and control technology. [2]	
	<b>(b)</b>	Appropriate product stated	
	<b>(i)</b>	Modern Materials – Description of how the product stated has been affected by modern materials. [2]	
	<b>(ii)</b>	Systems and control technology – Description of how the product stated has been affected by systems and control technology. [2]	8
<b>10</b>	<b>(a)</b>	Less waste. Reduced lead times Accuracy of manufacture Others considered [5]	
	<b>(b)</b>	Range – Larger range of more complex products available Others considered [2]	
		Availability – Easier access through Internet, Products more readily available to view and order on the Internet/websites. [2]	9
		<b>Total</b>	<b>80</b>