



Rewarding Learning

General Certificate of Secondary Education
January 2012

Manufacturing

Paper 1

Assessment Unit 3

assessing

Manufacturing Technology

[GMA31]

TUESDAY 19 JANUARY, MORNING

MARK SCHEME

			AVAILABLE MARKS
1	<p>(a) Ink cartridge, ream of paper (2 × [1])</p>	[2]	
	<p>(b) Metal railings, woodworker's bench (2 × [1])</p>	[2]	4
2	<p>Tool/Equipment matched with the correct corresponding name. (6 × [1])</p>	[6]	6
3	<p>Safety Glasses/Goggles</p> <p>Meaning: Safety glasses must be worn.</p> <p>Process: When drilling a piece of wood/metal.</p> <p>Ear Protection</p> <p>Meaning: Ear protection must be worn.</p> <p>Process: When machining a piece of wood.</p> <p>Flammable Symbol</p> <p>Meaning: Highly flammable.</p> <p>Process: When using a solvent based adhesive/spray painting.</p> <p>Dust mask</p> <p>Meaning: A dust mask must be worn.</p> <p>Process: When sanding/spray painting. (8 × [1])</p>	[8]	8
4	<p>(a) What is it going to be used for? Material manufacturing constraints. Transport constraints. Customer preferences. Other answers considered. (2 × [1])</p>	[2]	
	<p>(b) (i) Nylon Polystyrene PVC Other answers considered.</p>	[1]	
	<p>(ii) Appropriate product named with reference to answer (b)(i)</p>	[1]	
	<p>(iii) Granular materials flow. Quantities can be measured accurately. Reduced waste. (2 × [1])</p>	[2]	6

			AVAILABLE MARKS	
5	(a) (i)	Materials supply Materials control Process control Storage Stock control Marketing and mail shots Queries and searches Other answers considered.	[1]	
		(ii) Reduced ordering times Better process control Reduced labour/costs Reduced storage space Efficient marketing Other answers considered.	[2]	
	(b) (i)	Mobile phone Internet WiFi Video conferencing FAX Other answers considered.	[1]	
		(ii) Speed Reduced lead times JIT Lower running costs Other answers considered.	[2]	
	(c)	Customer satisfaction Better quality products Less returns Shorter order times Other answers considered.	[2]	
		(d) (i) Stock control is up to date. Other answers considered.	[2]	
		(ii) Products can be marketed easier.	[2]	12
	6	(a) Designs can be changed easily They can be viewed in 3D They can be viewed from different angles (2 × [2])	[4]	
		(b) Data is put in, e.g. dimensions, and the product is manufactured using CNC machinery to make the particular customised product. Other answers considered.	[2]	
		(c) Better quality product More reliable product Other answers considered.	[2]	8

			AVAILABLE MARKS
7	<p>(a) (i) Polymorph</p> <p>(ii) High quality finish Can be reused Easily moulded Quick to produce Cost effective Other answers considered. (2 × [2])</p>	<p>[1]</p> <p>[4]</p>	9
	<p>(b) Advantage: Errors can be highlighted before manufacture. Other answers considered.</p> <p>Disadvantage: Work can be lost easily if the system crashes Other answers considered.</p>	<p>[2]</p> <p>[2]</p>	
8	<p>(a) When designing products for manufacture: CAD package to show design ideas to the purchaser. [2] Other answers considered.</p> <p>To evaluate product design: Computerised testing to ensure safety. [2] Other answers considered.</p> <p>To ensure safety when manufacturing a product: Machine cut outs to ensure safe working. [2] Other answers considered. (3 × [2])</p>	<p>[6]</p>	
	<p>(b) Process will be organised. Should run smoothly. Manufacturer has immediate access to current stock. Other answers considered. (2 × [2])</p>	<p>[4]</p>	10
9	<p>(a) Weather proof Other answers considered.</p>	<p>[1]</p>	7
	<p>(b) Can be manufactured quicker Mistakes can be corrected easily. Other answers considered. (2 × [2])</p>	<p>[4]</p>	
	<p>(c) Surface finish. Check that the letters are stuck on correctly to the acrylic backboard. Other answers considered.</p>	<p>[2]</p>	

10 Employment Issues:
 It can provide employment.
 It can improve the level of expertise in the workforce.
 Increased modern technology means a reduced need for labour. [5]
 Other answers considered.

Effects to the environment:
 It can cause environmental damage/emissions
 Increased pollution/transportation of materials etc.
 Waste materials are dumped/not recycled properly. [5]
 Other answers considered.

3 points [5], 2 points [3], 1 point [1]
 (2 × [5])

[10]

Total

**AVAILABLE
 MARKS**

10

80