



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	(a) Ink cartridge, ream of paper (2 × [1])	[2]
	(b) Metal railings, woodworker's bench (2 × [1])	[2] 4
2	Tool/Equipment matched with the correct corresponding name. (6 × [1])	[6] 6
3	Safety Glasses/Goggles Meaning: Safety glasses must be worn. Process: When drilling a piece of wood/metal.	
	Ear Protection Meaning: Ear protection must be worn. Process: When machining a piece of wood.	
	Flammable Symbol Meaning: Highly flammable. Process: When using a solvent based adhesive/spray painting.	
	Dust mask Meaning: A dust mask must be worn. Process: When sanding/spray painting. (8 × [1])	[8] 8
4	(a) What is it going to be used for? Material manufacturing constraints. Transport constraints. Customer preferences. Other answers considered. (2 × [1])	[2]
	(b) (i) Nylon Polystyrene PVC Other answers considered.	[1]
	(ii) Appropriate product named with reference to answer (b)(i)	[1]
	(iii) Granular materials flow. Quantities can be measured accurately. Reduced waste. (2 × [1])	[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 x [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	(a) (i) Polymorph	[1]
	(ii) High quality finish Can be reused Easily moulded Quick to produce Cost effective Other answers considered. (2 × [2])	[4]
	(b) Advantage: Errors can be highlighted before manufacture. Other answers considered.	[2]
	Disadvantage: Work can be lost easily if the system crashes Other answers considered.	[2]
		9
8	(a) When designing products for manufacture: CAD package to show design ideas to the purchaser. [2] Other answers considered. To evaluate product design: Computerised testing to ensure safety. [2] Other answers considered. To ensure safety when manufacturing a product: Machine cut outs to ensure safe working. [2] Other answers considered. (3 × [2])	[6]
	(b) Process will be organised. Should run smoothly. Manufacturer has immediate access to current stock. Other answers considered. (2 × [2])	[4]
		10
9	(a) Weather proof Other answers considered.	[1]
	(b) Can be manufactured quicker Mistakes can be corrected easily. Other answers considered. (2 × [2])	[4]
	(c) Surface finish. Check that the letters are stuck on correctly to the acrylic backboard. Other answers considered.	[2]
		7

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.	AVAILABLE MARKS	
		[10]	
		Total	80