Rewarding Learning

General Certificate of Secondary Education
2011

Manufacturing

Paper 1

Assessment Unit 3

assessing

Manufacturing Technology

[GMA31]

WEDNESDAY 19 JANUARY, AFTERNOON

MARK SCHEME

		AVAILABLE MARKS
1	**(a)** Shirt Knitting needles and wool [2 × 1] [2]	
	(b) Weight multi-gym Metal staircase [2 × 1] [2]	4
2	To hold two pieces of wood together. The head will be flush with the surface of the material. Coping saw To clamp things together e.g. when gluing Used to cut materials such as wood metal and plastic Hand twist drill or Hand drill Used to remove unwanted areas of wood Other answers considered [6 × 1] [6]	6
3	**(a)** Thermoplastic – This plastic has plastic memory and can return to its original shape when reheated. [2]	
	Thermosetting plastic – This plastic has no plastic memory. Once heated and reshaped it cannot return to its original shape. Other answers considered [2]	
	(b) Insulator Durable Other answers considered [2 × 1] [2]	
	(c) From left to right:– Injection moulding Extrusion Line bending Vacuum forming [4 × 1] [4]	10
4	**(a)** **(i)** In a warehouse, or store, or office. Other answers considered [2]	
	(ii) A manufacturer is able to see what stock they have Other answers considered [2]	
	(b) Through search engines information can be obtained quicker – compare a range of suppliers. Other answers considered [2 × 2] [4]	
	(c) **(i)** Production efficiency – A manufacturer does not have to bulk buy in materials. They could operate a just in time system which would allow them to know exactly how much and what stock they need. Other answers considered [2]	
	(ii) Marketing – It is much easier to market products when you know exactly what you have in stock. Other answers considered [2]	12

				AVAILABLE MARKS
5	(a)	(i)	Model can be changed easily Can be viewed from a range of angles Other answers considered [2 × 2] [4]	
		(ii)	Faults can be viewed and modified on screen before manufacture. Other answers considered [2]	
	(b)		Continuous production Other answers considered [2]	8
6	(a)	(i)	Less accidents due to a more automated production line Other answers considered [2]	
		(ii)	Characteristics of products can be manufactured to a more detailed specification due to control technology. Other answers considered [2]	
	(b)		Reduced lead times Other answers considered [2]	6
7	(a)		They can work in hazardous environments Other answers considered [2]	
	(b)		Materials – Less materials wasted Other answers considered [2] Energy consumption – will have increased due to more automated machinery Other answers considered [2]	
	(c)		Type – More skilled specialised staff required Other answers considered [2] Size – The size of the workforce will be reduced Other answers considered [2]	10
8	(a)		Design – More intricate designs can be modelled and manufactured Other answers considered [2] Development – Products have been developed with different properties such as memory shape alloys and those properties change due to their surrounding environment. Other answers considered [2]	
	(b)	(i)	To keep up with competitors Other answers considered [2 × 2] [4]	
		(ii)	High costs [2]	10

			AVAILABLE MARKS
9	**(a)**	Size of the job If it can be clamped correctly on the machine The cost of the job Machining speed Other answers considered [2 × 2] [4]	
	(b)	Quicker More accurate Consistent housing size Higher quality product Less skill needed Other answers considered [2]	
	(c)	Make use of guards There should be adequate ventilation Correct speeds and feeds should be used The job needs to be clamped down properly. Other answers considered [2]	8
10	**(a)**	**(i)** The working environment has become more skilled and automated. Other answers considered [2]	
		(ii) The global environment – More pollution [2]	
	(b)	Products are able to be recycled more easily Other answers considered [2]	6
		Total	**80**