

Manufacturing

General Certificate of Secondary Education

Unit **B232**: Manufacturing Processes

Mark Scheme for January 2012

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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 should be read in conjunction with the published question papers and the report on the examination.

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Question		Answer	Marks	Guidance
1	(a)	Clothing and textiles – Baseball cap Machinery and equipment – Lawnmower Paper and print – Greetings card Electronic and communications – Games console Furniture – Book shelf Packaging – Polystyrene Egg box One mark for each correct link	6	
	(b)	Chemical and pharmaceutical; Food and drink; Motor manufacturing, Electrical Examples:- Chem. & Pharm. - Soap; saccharin tablets; medicine; toothpaste; asthma medication, hand cleanser Food and drink – Pizza, sports drink, ready meal Motor manufacturing – car, engines, laminated windscreens, airbags, seat belts, alloy wheels Electrical – Torch, toaster, kettle	3	Accept 'trade' name drinks eg 'coke', 'fanta', etc

Question		Answer	Marks	Guidance
2	(a)	State two manufacturing processes used when making the product	2	Process must be appropriate for the product named. Do not award pieces of equipment i.e. "vacuum former"
	(b)	State two tools or items of equipment used when making the product.	2	Tools must be appropriate to making of the product but do not have to relate to processes given in (a)
	(c)	State two different quality checks carried out during the making of the product. Examples:- Checking dimensions with laser or camera systems. Weighing using scales.	2	Quality checks must be appropriate for the product named
	(d)	Describe one safety precaution that should be taken when making the product.	2	Safety precaution must be appropriate to production of product.

Question		Answer	Marks	Guidance
3	(a)	<p>Explanation may include reference to; cost savings by using a cheaper material; client may request change; time savings from faster production process; cost of producing expensive tooling may be saved; problems found with process during prototyping may force process change.</p> <p>One mark each for individual points; one for detail/justification</p>	2	
	(b)	<p>Explanation may include reference to; can prove out production process, check product, use to present to clients, problems spotted before full production; feedback from client.</p> <p>One mark each for individual points; one for detail/justification</p>	4	No marks for repeated points

Question		Answer	Marks	Guidance
4	(a)	<p>Two marks for the method (phone, team meeting, walkie talkie, internal post, tannoy, handover book, direct feedback, team brief) and how used.</p> <p>One mark for method, one mark for description.</p>	4	
	(b)	<p>One mark for method (webcam, mobile phone, email, conference call) and one mark for benefit over traditional method (speed, accuracy of detail, cost, convenience)</p> <p>Example:- An email being sent to the team, letting each person know their targets for the week. Email can be sent cheaply and quickly over great distances.</p>	4	Fully 'joined-up' response required for full marks

Question		Answer	Marks	Guidance
5	(a)	Client brief Modifying designs Presenting design ideas Prototyping	4	
	(b)	One mark for giving the technology; one mark for description of technology; one mark for explanation of application in design stage		Do not reward repetition.
	(i)	1. Research Use internet; to search for information. Email reference sources i.e. manufacturers for information. Search engines, online surveys	3	Clear explanation required for full marks
	(ii)	2. Production Planning Use of CAD/CAM; use of spreadsheets, automatic ordering systems, JIT, production modelling software. Use the software to calculate production times and material quantities.	3	

Question		Answer	Marks	Guidance
6	(a)	Material E	1	
	(b)	Reference to material F being good value for money and easy to store. Relating this to not being readily available	3	Marks should not be awarded for responses such as “cheap”
	(c)	One mark for each relevant factor. eg properties of material (strength; conductivity; toxicity; etc.); number of products to make; suitability for processes to be used; machinery/equipment available; recyclability; environmental considerations/sustainability of material ; shelf life of material; ease of transporting material	2	Allow marks for individual properties only if detailed/justified

Question		Answer	Marks	Guidance
7	(a)	Product must be from the list above. Only award relevant materials or components. One mark for each material or component. eg Torch – bulb, batteries, lens, on/off switch	2	
	(b)	One mark for relevant process. One mark for description or relevance to small batches. Examples may include workshop tools and details of processes using hand tools.	2	Marks only to be awarded for processes not just pieces of equipment.
	(c)	One mark for references to relevant automation of process or large scale production methods. One mark for description. Explanation must relate to product given in 7A	3	Do not accept “use machines” or simplistic generic answers.

Question		Answer	Marks	Guidance	
				Content	Levels of response
8		<p>Six marks for a discussion or critical evaluation of relevant implications. The response may include the following points:</p> <p>Cost of new machines/equipment; changes to factory layout; training staff for new skills; new safety equipment, wasted materials during trials, improved sales, improvements in output/need for higher output to justify costs; more consistent quality;</p>	6	<p>Basic discussion showing some understanding of the implications of introducing modern materials in manufacturing. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised. Errors of spelling, punctuation and grammar may be intrusive.</p> <p>Adequate discussion showing an understanding of the implications of introducing modern materials in manufacturing. . There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, punctuation and grammar.</p> <p>Regards</p> <p>Thorough analysis showing a clear understanding of the implications of introducing modern materials in manufacturing. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate can demonstrate the accurate use of spelling, punctuation and grammar.</p>	<p>Level 1 (0 – 2 marks)</p> <p>Level 2 (3 – 4 marks)</p> <p>Level 3 (5 – 6 marks)</p>
Total			60		

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