

Manufacturing

General Certificate of Secondary Education **B234**
Impact of Modern Technologies on Manufacturing

Mark Scheme for June 2010

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Question Number	Syllabus Ref	Expected Answer	Mark	Rationale
1 (a)	A	Chemical and pharmaceutical – lipstick Clothing and textiles – football shirt Electrical and communications – vacuum cleaner Food and drink – birthday cake Furniture – child’s cot Motor manufacturing – horse box Packaging – orange juice carton	[7]	
(b)	G	No marks for product, but MUST be from the list One mark for a correct technology, further mark for a benefit of using the technology. For example (not exhaustive) Orange juice carton. Laminated foil card – waterproof, folds flat. Horse Box – satnav to find destination on suitable roads Vacuum cleaner cyclone technology dust not released to air. Lipstick mineral based pigments, colour fast Birthday cake – inkjet printing with edible dyes to put photographs onto icing Child’s cot antibacterial coating on mattress to protect child. Football shirt – antibacterial coating/breathable fabric/ptfe coating to avoid heavy soiling/vinyl lettering – solvent free no drying time application.	[4]	
2 (a)	I	Two marks for each of two reasons, for example: To check performance is as designed/ components fit correctly/ materials suitable/robustness To show a client... (eg appearance) determine steps in manufacture.	[4]	Must be amplification for second mark

Question Number	Syllabus Ref	Expected Answer	Mark	Rationale
4	H	<p>3 marks for each clear explanation. eg including the technology, type of benefit and link between them.</p> <p>Examples of points:</p> <p>Transportation of goods smaller products take up less space on vehicles; modern technology has developed more efficient vehicles for delivery of goods; refrigerated transport; vehicle tracking (3)</p> <p>Variety of manufactured products design process is quicker because of improved communication systems and CAD; modern control systems mean that it is quicker to change production to a new product/variant; mass advertising has increased customer demand for improved/different products. (3)</p> <p>Local environment cleaner burning furnaces/processes reduce emissions; advanced air scrubbing, water filtration systems; heat recovery from cooling water reduces impact on wildlife; CCTV monitoring has reduced crime and helped detection. (3)</p>	[9]	<p>For 3 marks must be 'joined up'</p> <p>No marks for repeated points</p>

Question Number	Syllabus Ref	Expected Answer	Mark	Rationale
5 (a)	D	<p>3 marks for a clear explanation</p> <p>For example: <u>Make versus buy.</u> When planning production (1) considering whether it is better to buy in or make in house (1). For example buying in pre-coated steel sheet for manufacturing white goods (1)</p>	[3]	Developed response required for three marks.
5 (b)	C	<p>3 marks for a clear explanation</p> <p>For example: <u>Safe disposal</u> Considering what happens to the product at the end of its working life (1) eg it should be possible to separate potentially hazardous (1) materials and components (1) so that they can be disposed of safely.</p>		Developed response required for three marks.
5 (c)	F	<p>3 marks for a clear explanation</p> <p>For example: <u>Fair trade</u> Fair Trade is a growing, international movement (1) which ensures that producers in poor countries get a fair deal (1). This means a fair price for their goods(1) (one that covers the cost of production and guarantees a living income)(1), long-term contracts which provide real security(1); and for many, support to gain the knowledge and skills that they need to develop their businesses and increase sales(1).</p>	[3]	Developed response required for three marks.

Question Number	Syllabus Ref	Expected Answer	Mark	Rationale
6	B	2 marks for clear description of a consideration related to each area (one for a single point): (a) <u>Transport of materials and products</u> Time is wasted when materials and products are being transported to different locations; the plant layout can be redesigned to minimise transport (b) <u>Movement of people</u> People moving between processes; takes up manufacturing time because they are unproductive; The layout of workplace/ working methods can be reviewed (c) <u>Scrap</u> by more efficient lay plans/ buying in more appropriate sizes; less raw material is needed; closer monitoring of production	[6]	
7	B	1 mark for each correct link ○ operation ⇒ transport □ inspection ▽ storage	[4]	
	I	Two marks for a clear description of a delay/idle time in the process (For example: Components waiting in baskets for the previous load to be coated. Finished product awaiting final checks/loading	[2]	Nb. waiting for paint to dry is necessary delay and therefore allowable. (drying/curing time) Breakdowns not classed as a 'delay'.

Question Number	Syllabus Ref	Expected Answer	Mark	Rationale
8*	H	<p>Six marks for discussion or a critical evaluation of the impact of new technology on workers' lifestyles.</p> <p>Examples of points (<u>specialist terms</u>) The use of <u>Systems and Control Technology</u> has enabled <u>automation /environmental controls</u>/humans not so closely involved less risk of injury. Most workers are better paid for less physically demanding work. Less work for unskilled workers. Transport – <u>affordable</u> cars, flights – travel further to work <u>Availability</u> of goods leisure activities Identification and expansion of any of the above. List is not exhaustive</p> <p>Level 1 (0-2 marks) Basic discussion showing some understanding of the impact of new technology on workers' lifestyles. 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>		List not acceptable as structure here.

Question Number	Syllabus Ref	Expected Answer	Mark	Rationale
		<p>Level 2 (3-4 marks) Adequate discussion showing an understanding of impact of new technology on workers' lifestyles. 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>Level 3 (5-6 marks) Thorough analysis, showing a clear understanding of the impact of new technology on workers' lifestyles. 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>	[6]	

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