

Mark Scheme (Results)

June 2012

GCSE Engineering/Manufacturing
(5EM03) Paper 3C

Textiles & Clothing

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Question	Answer	Mark
1(a)	<ul style="list-style-type: none">• Flag• Car seat covers <p><i>If 3 boxes or more crossed - no marks.</i> (2 x 1)</p>	(2)
1(b)	<ul style="list-style-type: none">• Nylon tights• Cagoule <p><i>If 3 boxes or more crossed - no marks.</i> (2 x 1)</p>	(2)
(Total 4 marks)		

Question	Answer	Mark
2(a)	<ul style="list-style-type: none"> • Velcro <p><i>Accept any recognisable spelling (phonetic) of the answers above.</i> (1 x 1)</p>	
	<ul style="list-style-type: none"> • Bead (s) • Pearl (s) • Gem stone/diamante <p>Accept any answer with reference to bead i.e. glass bead</p> <p><i>Accept any recognisable spelling (phonetic) of the answer above.</i> (1 x 1)</p>	(2)
2(b)	<p>An answer that makes reference to TWO of the following points:</p> <ul style="list-style-type: none"> • Used to protect the finger • Protects the user from sewing into their finger • Shields the user from the point of the needle • Prevents injury • Helps user to separate materials • Allows you to push needle through fabric with greater force <p>e.g. A thimble is used to protect the users finger (1) and can prevent injury (1) (2 x 1)</p>	
	<p>An answer that makes reference to TWO of the following points:</p> <ul style="list-style-type: none"> • For measuring • For measuring curved surfaces • Flexible measuring tool • Used for taking body measurements • Helps to ensure accurate lay planning <p>e.g. A tape measure is a flexible measuring tool (1) which allows you to take body measurements accurately(1) (2 x 1)</p>	(4)
(Total 6 marks)		

Question	Answer	Mark
<p>3</p>	<p>Award 1 mark for each key term correctly linked to a key area.</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <div style="text-align: center;"> <p>Key Term</p> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Programmable logic controllers (PLCs)</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Polyester microfibres</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Databases</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Pick and place robots</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Photochromic dyes</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Word processing</div> <div style="border: 1px solid black; padding: 5px; width: 150px; margin-bottom: 5px;">Micro-encapsulated fabric</div> </div> <div style="text-align: center;"> <p>Key Area</p> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: 150px; margin-bottom: 20px; display: inline-block;">Modern materials</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: 150px; margin-bottom: 20px; display: inline-block;">Control technology</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: 150px; display: inline-block;">Information & communications technology (ICT)</div> </div> </div> <p><i>No mark awarded where 2 or more lines are drawn from a term. Lines do not have to be straight but key term and key area must be clearly linked.</i></p> <p>(7 x 1)</p>	<p>(7)</p>
<p>(Total 7 marks)</p>		
Question	Answer	Mark

Question	Answer	Mark
<p>4(a) (i)</p>	<p>Appropriate products such as e.g.</p> <ul style="list-style-type: none"> • High performance trainers/hiking boots • Biker gloves • Bullet proof vest • Weather protective jackets • Sports wear • Swimwear • Racing drivers suit • A handbag • A jumper • A brand name of a specific product <p><i>This list is not exhaustive, accept any product associated with the textiles and clothing sector that contains a synthetic fibre.</i></p> <p>(2 x 1)</p>	<p>(2)</p>
<p>4(a) (ii)</p>	<ul style="list-style-type: none"> • High performance trainers/hiking boots - polyamide • Biker gloves - polyester • Bullet proof vest - Kevlar • Weather protective jackets - polyester • Sports wear - Tencel • Swimwear – elastane • Racing drivers suit - Nomex • A handbag - PVC • A jumper – acrylic • A brand name of a specific synthetic fibre <p>e.g. Nylon</p> <p><i>Do not accept natural fibres e.g. wool, cotton linen or silk</i> <i>Do not accept the name of a fabric e.g. denim, calico, fleece</i></p> <p>(1 x 1)</p>	<p>(1)</p>
<p>4(a) (iii)</p>	<p>One mark for identifying each reason</p> <p>One mark for each explanation</p> <ul style="list-style-type: none"> • Better functional characteristics (1) - weight (1) / size (1) / protection (1) / rigidity (1) / flexibility (1) / comfort (1) / waterproof (1) / breathable (1) • Better wear characteristics (1) - strength (1) / durability (1) • Better aesthetic characteristics (1) - surface finish (1) / texture (1) / colour (1)/ appearance (1) • Meets requirements of intended markets (1) – appeal to target audience (1) 	

Question	Answer	Mark
	<ul style="list-style-type: none"> • Better quality standards (1) – consistency (1) / reliability (1) • Reduced weight (1) – better strength to weight ratio (1) • Reduced cost (1) – quicker / quicker to assemble (1) • Any other appropriate functional / aesthetic characteristic relating to the benefit (1) <p>e.g. handbag - improves strength (1) and durability (1) of the product allowing items to be made smaller (1)</p> <p>If answer in 4 (a) (ii) is a fabric allow follow through up to for each of the two answers.</p> <p>If there is no answer or the answer is a product in 4(a)(ii), no marks for 4(a)(iii).</p> <p>(2 x 1) (2 x 1)</p>	(4)
4(b)(i)	<ul style="list-style-type: none"> • production planning (1) • materials – supply and control (1) • processing/production (1) • assembly/finishing (1) • packaging/dispatch (1) <p>(1 x 1)</p>	(1)
4(b)(ii)	<p>One mark for identifying advantage One mark for why</p> <p>Appropriate advantage to the manufacturer e.g. production planning, materials – supply and control, processing/production, assembly/finishing, packaging/dispatch</p> <p>production planning</p> <ul style="list-style-type: none"> • speed (1) – faster than human application (1) • accuracy (1) – reliability of data (1) <p>integrates with other software systems (1) giving more accurate plan (1)</p> <p>materials – supply and control</p> <ul style="list-style-type: none"> • buy best available materials (1) – use of internet (1) • waste control (1) – by monitoring processes and quality control of processes (1) 	

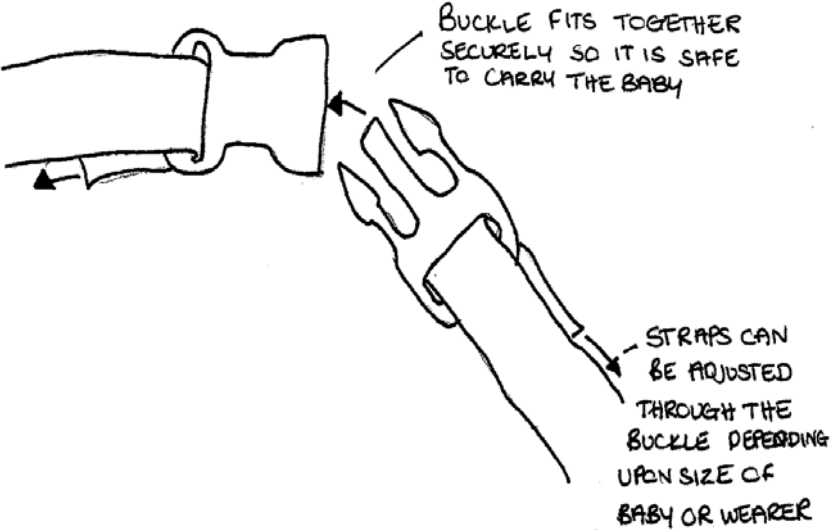
Question	Answer	Mark
	<p>processing/production Answer could relate to the application of CAM and control technology such as: -</p> <ul style="list-style-type: none"> • energy conservation (1) – by control of energy into process (1) • waste control (1) – by monitoring processes and quality control of processes(1) • competitiveness (1) – faster rates of production/ application of CAM techniques (1) • product consistency (1) – by control of processes (1) • cost control (1) – by less waste/faulty parts (1) • efficiency (1) - by less waste/faulty parts (1) • speed (1) – faster than human application (1) <p>assembly/finishing Answer could relate to the application of CAM and control technology such as: -</p> <ul style="list-style-type: none"> • energy conservation (1) – by control of energy into process (1) • waste control (1) – by monitoring processes and quality control of processes(1) • product consistency (1) – by control of processes (1) • cost control (1) – by less waste/seconds(1) • efficiency (1) - by less waste/seconds (1) • speed (1) – faster than human application (1) <p>packaging/dispatch Answer could relate to the application of CAM and control technology such as: -</p> <ul style="list-style-type: none"> • packaging consistency (1) – by control of processes (1) • cost control (1) – by less waste/faulty parts (1) • efficiency (1) - by less waste/faulty parts (1) • speed (1) – faster than human application (1) • energy conservation (1) – by control of energy into process (1) • waste control (1) – by monitoring processes and quality control of processes (1) <p><i>Low response (1) or two low responses (2) or detailed response (2)</i></p> <p>(2 x 1)</p>	<p>(2)</p>

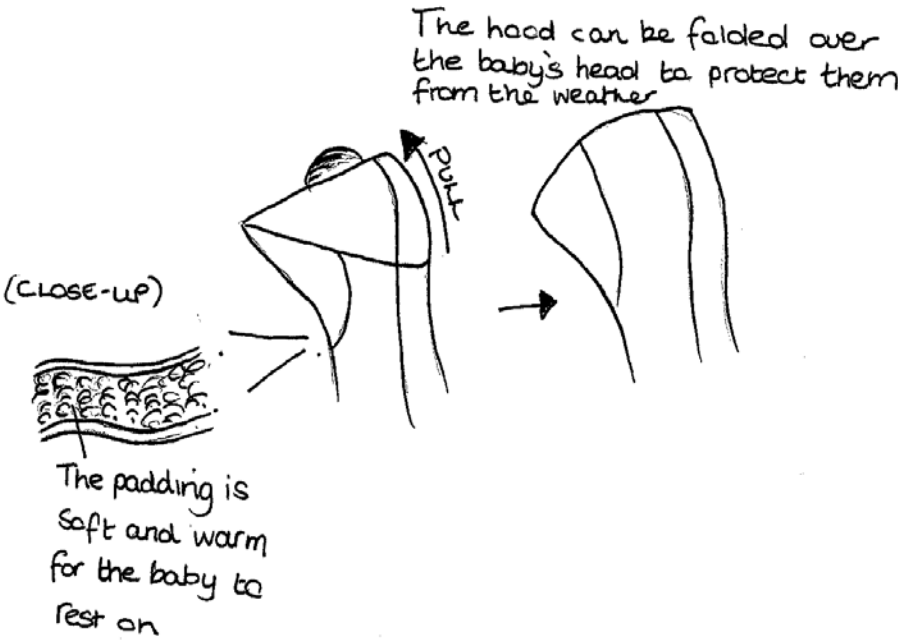
Question	Answer	Mark
5(a)	<p>One mark for each identification One mark for each extension</p> <ul style="list-style-type: none"> • For accurate drawings (1) – through entry of accurate data on sizes (co-ordinates) (1) • Quicker development time (1) – through simulation (1) • Easier to communicate, i.e. ICT (1) – for transfer of data (1) • Easy to make modifications/edit/change (1) – no paper hard copies (1)/computer data (1) • Lower initial development costs (1) – concurrent design processes (1) • Easier storage of data/information and retrieval (1) – interaction with databases (1) • Ability to convert from 2D to 3D (1) for modelling (1) <p><i>Low response (1) or 2 low responses (1) e.g. its quicker and more accurate – only one mark or detailed response (2)</i> <i>Do not accept 'easier' without explanation</i> (2 x 1) (2 x 1) (2 x 1)</p>	(6)
5(b)	<p>One mark for reason One mark for extension</p> <ul style="list-style-type: none"> • reduced ordering times (1) – automatic monitoring (1) • improve quality / accuracy (1) – control of processes (1) • reduced wastage (1) – optimise production methods (1) • improved efficiency (1) – faster / quicker throughput (1) • better process control (1) – in process monitoring (1) • reduced labour (1) – automated processes (1) • lower costs (1) – reduced wastage/faster/continuous production (1) • faster processes (1) – less manual input (1) • Safer/cleaner (1) – more suitable for hazardous environment (1) <p><i>Do not accept 'easier' or 'faster' / 'quicker' without explanation.</i> <i>Low response (1) or two low responses (2) or detailed response (2)</i> (2 x 1)</p>	(2)
(Total 8 marks)		

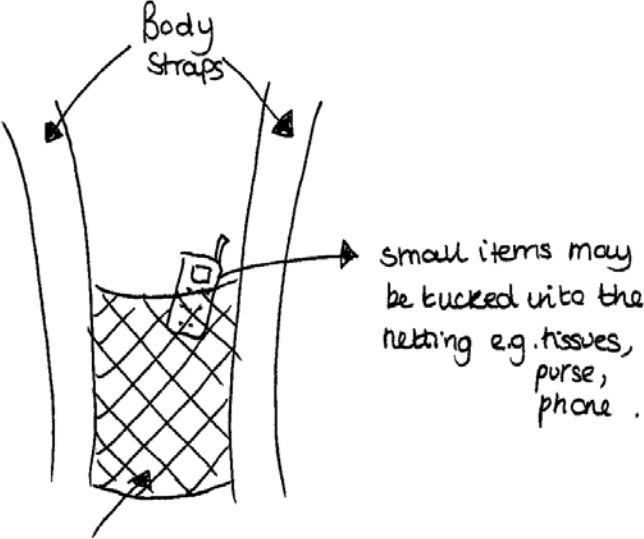
Question	Answer	Mark
<p>6(a) (i)</p>	<ul style="list-style-type: none"> • a method of exchanging digital messages (1) across the Internet (1) • a protocol (1) for sending, receiving and storing messages (1) • the exchange of computer-stored messages (1) by telecommunications (1) • A quick method (1) which allows functions such as attachments / read receipts (1) <p><i>Accept any other appropriate response</i> <i>Low response (1) or two low responses (2) or detailed response (2)</i></p> <p>(2 x 1)</p>	<p>(2)</p>
<p>6 (a) (ii)</p>	<p>1 mark for identification 1 mark for why</p> <ul style="list-style-type: none"> • Messages go to Junk mail (1), issues with accessing the message (1) • Insecure (1), loss of confidential data (1) • Mail boxes can be full (1), mail not received (1) • Inefficient (1) intended recipient doesn't always receive the message (1) • Hard to translate (1) could receive incorrect meaning (1) • Restriction on size of message (1), unable to send large files (1) • Recipient doesn't always receive the message immediately (1), delay in access to computer software (1) <p><i>Do not accept any answer that is not directly related to email or lower costs.</i></p> <p><i>Low response (1) or two low responses (2) or detailed response (2)</i> <i>Do not accept repetitive responses</i></p> <p>(2 x 1) (1 x 2)</p>	<p>(2)</p>
<p>6(b)(i)</p>	<ul style="list-style-type: none"> • Face to face meeting (1) • Telephone (1) • Conference (1) 	<p>(1)</p>

Question	Answer	Mark
	<p><i>Accept any appropriate response</i></p> <p>(1 x 1)</p>	
<p>6(b)(ii)</p>	<p>One mark for each identification One mark for each extension</p> <ul style="list-style-type: none"> • convenience (1) – don't have to travel to venue (1) • cost savings (1) – travel costs reduced (1) • time savings (1) – communication in real time (1) • 'work environment' (1) – all material/information (1) • access to outside experts (1) – regular meetings to compare data etc (1) • staff development (1) – encourages employees to keep up to date with modern technology (1) • Can be arranged at short notice (1) – avoids lengthy planning (1) • Can be recorded (1) – played back to remind/recall information (1) <p><i>Accept any other appropriate response</i> <i>Low response (1) or two low responses (2) or detailed response (2)</i> <i>Do not accept repetitive responses</i></p> <p>(2 x 1) (1 x 2)</p>	<p>(4)</p>
<p>(Total 9 marks)</p>		

Question	Answer	Mark
7(a)	<p>One mark for benefit One mark for extension</p> <ul style="list-style-type: none"> • Accurate information (1) – updated regularly (1) • Detailed information (1) – high storage space (1) • Fast access to data (1) – search/sort/query (1) • Improved planning (1) – short lead times (1) • Forecasting (1) – collects volumes of data/ modelling (1) • Cost of control (1) – better scheduling (1) • Waste control (1) – process monitoring/control (1) • Reduced stock holding(1) – tracks trends/JIT • Training records (1) – skills monitoring (1) • Wage information (1) – ease of cost monitoring (1) <p><i>Accept any other appropriate response</i></p> <p>(1 x 2)</p>	(2)
7(b)	<p>One mark for each benefit One mark for each extension</p> <ul style="list-style-type: none"> • Accurate orders (1) – updated regularly (1) • Detailed stock movement information (1) – efficient storage space (1) • Fast access to data (1) – search/sort/query (1) • Effective goods tracking (1) – barcoding/EPOS (1) • Fast distribution (1) – Fast delivery details • Improved stock control (1) – process monitoring/ control (1) • Regulating drivers' workload (1) – to meet delivery demand/schedules (1) • Improved stock security (1) – less theft (1) • Less stock obsolescence (1) - efficient stock turnover (1) <p><i>Accept any other appropriate response</i></p> <p>(1 x 2) (1 x 2)</p>	(4)
(Total 6 marks)		

Question	Answer	Mark
<p>8(a)</p>	<ul style="list-style-type: none"> • To allow the straps to be altered depending upon the size of the baby (1) • To allow the straps to be altered to make the wearer more comfortable (1) • Strong method of fastening (1) • Safe method of fastening (1) • Secure method of fastening (1) • To allow easy access in and out of the carrier (1) <p>Accept any other appropriate response</p> <p><i>Must have notes and sketches</i></p> <p>8a)</p>  <p>Max 2 marks if only notes or only sketches used.</p> <p>(3 x 1)</p>	<p>(3)</p>
<p>8(b)</p>	<ul style="list-style-type: none"> • Can be adjusted in height depending on the size of the baby (1) • Can be adjusted in height to vary the support given to the baby's head (1) • Provides a soft place for the baby (1) • A comfortable resting place for the baby (1) • The padding may provide the baby with warmth(1) • Could be folded over the baby's head to protect them from the weather (1) <p>Accept any other appropriate response</p>	<p>(3)</p>

Question	Answer	Mark
	<p><i>Must have notes and sketches</i></p> <p>8b)</p>  <p><i>Max 2 marks if only notes or only sketches used.</i></p> <p>(3 x 1)</p>	
<p>8(c)</p>	<ul style="list-style-type: none"> • Can adjust according to the size of the wearer (1) • Provides support for the wearer (1) • Provides stability between the straps of the baby carrier (1) • Could be use for storing small items (1) • Soft for the wearer and the baby (1) • Smooth against the wearer and the baby (1) • To allow natural ventilation (1) <p><i>Accept any other appropriate response</i></p> <p><i>Must have notes and sketches</i></p>	<p>(3)</p>

Question	Answer	Mark
	<p>8c)</p>  <p>The elasticated netting can stretch according to the size of the wearer. It also provides stability between the straps.</p> <p>small items may be tucked into the netting e.g. tissues, purse, phone.</p> <p><i>Max 2 marks if only notes or only sketches used.</i> (3 x 1)</p>	

(Total 9 marks)

Question	Answer	Mark
9(a)(i) 1	<ul style="list-style-type: none"> • Production planning • Planning • Planning for production <p><i>Do not accept 'production' on its own</i></p> <p>(1 x 1)</p>	
9 (a) (i) 2	<ul style="list-style-type: none"> • Production and processing • Production • Processing <p>(1 x 1)</p>	(2)
9(a)(ii)	<ul style="list-style-type: none"> • Design • Stage 1/stage one • One/1 • First/first stage/1st/1st stage <p>(1 x 1)</p>	(1)
9(b)(i)	<p>Appropriate descriptions including three of the following points (statements must be applicable to baby carrier marketing):</p> <ul style="list-style-type: none"> • Gathering consumer opinion (1) • Calculating products costs (1) • Developing market plan (1) • Using market research (1) • Developing a competitive edge (1) • Advertising the baby carrier (1) • Promoting the baby carrier (1) • Carrying out questionnaires/surveys (1) • Contributes to sales activities (1) <p>e.g.1 The stage where the advertising (1) of baby carriers is carried out following a range of market research strategies (1) to gather consumer opinion (1).</p> <p>e.g.2 The stage where the manufacturer uses a range market research strategies (1) to gather people's opinions (1) to be able to promote (1) the baby carriers.</p> <p>Accept any other appropriate response <i>Up to 3 marks</i> <i>1 x 1 mark low response, 3 x 1 mark 3 low responses or up to 3 for detailed response</i></p> <p>(3 x 1)</p>	(3)

Question	Answer	Mark
<p>9(b)(ii)</p>	<p>Appropriate descriptions including three of the following (statements must be applicable to baby carrier materials supply and control):</p> <ul style="list-style-type: none"> • Availability of suitable materials (1) • Purchase of suitable materials (1) • Availability of suitable packaging materials (1) • Purchase of suitable packaging materials (1) • Sourcing of bought-in components (1) • Purchasing of bought-in components (1) • Good inwards inspection (1) • Testing of inbound materials (1) • Storage of materials (1) <p>e.g. The stage where the manufacturer would use a database (1) to source suitable materials (1) and bought-in components (1) for the baby carrier. These parts could then be purchased (1) and then inspected (1) on arrival at the company.</p> <p>Accept any other appropriate answer</p> <p><i>Up to 3 marks</i> <i>1 x 1 mark low response, 3 x 1 mark 3 low responses or up to 3 for detailed response</i></p> <p>(3 x 1)</p>	<p>(3)</p>
<p>(Total 9 marks)</p>		

Question	Answer	Mark
10(a)	<ul style="list-style-type: none"> • Plain woven • Poplin • Canvas • Rip-stop • Twill woven • Denim • Gaberdine • Corduroy • Cord <p>Accept any other appropriate response</p> <p><i>Do not accept knitted fabrics e.g. jersey</i> (1 x 1)</p>	(1)
10(b) (i)	<p>Any three of the following processes:</p> <ul style="list-style-type: none"> • Lay planning • Spreading (of fabric) • Cutting • Position marking • Die cutting • Fusing • Bonding • Sewing / Lockstitching • Moulding • Pressing • Gluing • Machine embroidery • Topstitching <p>Accept any other appropriate response</p> <p>1 mark per response up to 3 <i>Accept any recognisable spelling (phonetic) of the answers above.</i></p>	(3)
10(b) (ii)	<p>An explanation that makes reference to three of the following points:</p> <ul style="list-style-type: none"> • quick method/fast production rate • neat finish to the seams • no need for separate sewing and finishing processes • reliable process • minimal waste • can be mass produced easily • products have consistent quality 	

Question	Answer	Mark
	<ul style="list-style-type: none"> • Creates strong seams <p>e.g overlocking is a reliable (1) and fast (1) process as it and sews the seams in one action (1)</p> <p>Accept any other appropriate response <i>1 x 1 mark low response, or up to 3 marks for detailed response</i></p>	(3)
10(c)	<p>An explanation that makes reference to three of the following points:</p> <ul style="list-style-type: none"> • Improved durability • Increased product life span • Products require less aftercare • Easier manufacturing • safer product • Better functionality / strength • lighter product • More variation of products • Improved aesthetics • Improved feel • Reduced costs • Environmental improvements <p>e.g modern materials can be used to improve the durability (1) of products which therefore improves their lifespan (1) and functionality (1)</p> <p>Accept any other appropriate response</p> <p><i>Up to 3 x 1 mark low responses or up to 3 marks for a detailed response</i> (3 x 1) (1 x 3)</p>	(3)
(Total 10 marks)		

Question	Answer	Mark
<p>11(a)(i)</p>	<p>One mark for identifying each QC procedure One mark for each extension</p> <ul style="list-style-type: none"> • Checking for physical damage on the baby carriers or packaging (1) – by visual inspection (1) • Packaging weight checks (1) – using packaging scales (1) • Packaging size checks (1) – by direct measurement or optical sensors (1) • Packaging security checks (1) – by optical scanning (1) • Checking quantities / batch size (1) – through bar coding (1) • Tracking of packaging (1) – by RFID (1) <p><i>Do not accept repetitive responses</i> <i>Must be within packaging and dispatch stage</i> <i>Low response (1) or two low responses (2) or detailed response (2) per example</i> (1 x 2) (1 x 2) (2 x 1) (2 x 1)</p>	<p>(4)</p>
<p>11(a)(ii)</p>	<p>One mark for identifying each automation used One mark for each extension</p> <ul style="list-style-type: none"> • PLCs (1) to control processes in packaging and dispatch (1) • Automated wrapping of baby carrier packaging (1) • Automated labelling of baby carrier packaging (1) • Automated coding of baby carrier (1) to allow automated order picking (1) • Use of conveyor systems (1) to move baby carrier packaging from one packaging and dispatch process to the next (1) • Embedded computers (1) to perform dedicated functions (1) • Remotely operated vehicles (1) moving baby carrier packaging to next stage / storage / dispatch (1) • Pick and place robots (1) moving baby carrier packaging to next stage / storage / dispatch (1) • Automated counting/weighing (1) carton erector (1) <p><i>Any other appropriate response</i> <i>Do not accept repetitive responses</i> <i>Do not accept 'CIM' or 'CNC' without links to automation</i></p>	<p>(4)</p>

Question	Answer	Mark
	<p><i>Must relate to the packaging and dispatch stage</i> <i>Low response (1) or two low responses (2) or detailed response (2) per example</i> (1 x 2) (1 x 2) (2 x 1) (2 x 1)</p>	
11(b)	<p>One mark for identifying advantage to the manufacturer One mark for how</p> <ul style="list-style-type: none"> • Reduced customer complaints (1) – accurate products (1) • Control of costs (1) – cheaper product / more profit (1) • Avoids further processing of faulty product (1) – early detection of rejects (1) • Increased sales (1) – consistent product / lower prices (1) • User confidence (1) – consistent product / less returns (1) • Reduced waste (1) – control of manufacturing processes (1) • Made to same quality standard (1) – increased customer satisfaction/company reputation (1) • Reliable product (1) – monitoring standards / testing (1) • Detection of broken machinery (1) – less damaged product (1) • Increased output/productivity (1) - increased profit (1) • Less expensive to operate (1) – fewer manual checks (1) <p><i>Any other appropriate response</i> <i>Low response (1) or two low responses (2) or detailed response (2)</i> (1 x 2) (1 x 2)</p>	(2)
(Total 10 marks)		

Question	Answer	Mark
<p>12(a)(i)</p>	<p>One mark for impact, 2 marks for extension An explanation that makes reference to three of the following points:</p> <ul style="list-style-type: none"> • Smaller in size (1) • Increased competition for fewer jobs(1) • Higher level of skills (1) • Work patterns – shifts (1) • Need to retrain(1) • Better educated (1) • Higher level of development skills required (1) • Less employment for unskilled (1) • Updating and training often required (1) • Team working more important(1) • Improved promotion prospects (1) • Reduced income/standard of living (1) • Cleaner workplace (1) • Safer workplace (1) • Less physically demanding tasks (1) • Job insecurity (1) <p>e.g. Employees would need to retrain(1) and there would be increased competition for jobs(1) and there would be less employment opportunities for unskilled people(1)</p> <p><i>Accept any other appropriate response Up to three low responses (3), detailed response (3)</i></p> <p>(3 x 1) (1 x 3)</p>	<p>(3)</p>
<p>12(a)(ii)</p>	<p>One mark for impact, 2 marks for extension An explanation that makes reference to three of the following points:</p> <p>Positive answers</p> <ul style="list-style-type: none"> • Reduced carbon emissions (1) • Operational efficiencies – less fossil fuels (1) • Reduced waste – landfill (1) • Healthier local environment(1) • Improved quality – less waste(1) 	<p>(3)</p>

Question	Answer	Mark
	<p>Negative answers</p> <ul style="list-style-type: none"> • Distribution - network increased (extra fuel) (1) • Increased consumption of raw materials (1) • Over production(1) • Increased energy consumption(1) • Increased pollution (1) <p><i>Accept combinations of the above that are positive or negative.e.g.</i> <i>Changes in the working environment could lead to reduced waste going into landfill (1) and would create a healthier local environment (1). However over production (1) could result in increased energy consumption (1)</i></p> <p><i>Up to 3 marks</i> <i>Accept any other appropriate response</i> <i>Up to three low responses (3), detailed response (3)</i></p> <p><i>(3 x 1)</i> <i>(1 x 3)</i></p>	
<p>12(b)(i)</p>	<p>Any two of the following:</p> <ul style="list-style-type: none"> • Analyse market research data in database (1) • Assists with pricing products (1) • Pricing products in spreadsheets (1) • Cost the resource requirements for baby carriers in spreadsheets (1) • Plan marketing campaign using DTP software (1) • Use of internet/website/social networking for marketing (1) • Use of emails for marketing purposes (1) • Video conferencing to discuss marketing + research proposals (1) • Assists with profit analysis/predictions (1) • Assists with 'pitching'/powerpoint presentations (1) • Provides legal information (1) <p><i>Accept any other appropriate response</i> <i>1 mark per response up to 2</i> <i>Do not accept generic responses with no link to marketing or a marketing context.</i></p> <p><i>(1 x 1)</i> <i>(1 x 1)</i></p>	<p>(2)</p>

Question	Answer	Mark
12(b)(ii)	<p>One mark for identifying the use One mark for how:</p> <ul style="list-style-type: none"> • Electronic monitoring (1) of some assembly processes (1) • Use of sensors (1) to monitor assembly / finishing of baby carriers (1) • Use of software (1) to record, log output of baby carrier (1) <p><i>Accept any other appropriate response Low response (1) or two low responses (1) or detailed response (2)</i> (2 x 1)</p>	(2)
12(b)(iii)	<p>One mark for identifying the benefit One mark for how</p> <ul style="list-style-type: none"> • Establishes a market database (1) shared with the manufacturer (1) • Has accurate costing information (1) shared with the manufacturer (1) / that can be manipulated easily (1) • Gives distributors opportunity to match the market needs (1) with production of baby carriers (1) • Gives retailers sales data fast (1) possibly leading increased sales/profits (1) • Accurate sales data (1) leads to accurate pricing (1) • Advertising/selling online (1) leads to wider market (1) • Assists with stock rotation (1) leading to less waste (1) • Navigation software (1) planning routes to reduce costs (1) • Efficient tracking/monitoring (1) leads to fewer product losses (1) <p><i>Low response (1) or two low responses (1) or detailed response (2)</i> (2 x 1)</p>	(2)
(Total 12 marks)		

Question	Answer	Mark
<p>13</p>	<p>An explanation that makes reference to four of the following points:</p> <ul style="list-style-type: none"> • Guards/sensors on machinery (1) so machinery can shut down automatically (1) • Automated machinery (1) can operate in hazardous environments (1) • Less human input at the production stage (1) reduces errors (1) and results in fewer accidents (1) • Fewer problems with fatigue (1) enables continuous processing (1) • Cleaner environment (1) air quality improved (1) <p>e.g. Control technology is now used to prevent machines from starting when guards are not in place (1), and to shut down machines when something goes wrong (1), which means that accidents are less likely to happen (1) and therefore people won't get hurt (1).</p> <p><i>Accept any other appropriate response</i> <i>Up to 4 marks</i> <i>Up to 4 low responses (4) or detailed response (up to 4)</i> (4 x 1) (1 x 4)</p>	<p>(4)</p>
<p>(Total 4 marks)</p>		

Question	Answer	Mark
<p>14 QWC i, ii, iii</p>	<p>Discussion may address the following issues:</p> <ul style="list-style-type: none"> • <i>Issue - Reduce energy consumption</i> <ul style="list-style-type: none"> ▪ The baby carrier could be made from locally sourced materials and components • <i>Development</i> <ul style="list-style-type: none"> ▪ Less need for transportation over long distances ▪ Review of distribution networks and frequencies • <i>Issue - Reduce energy consumption</i> <ul style="list-style-type: none"> ▪ The baby carrier could be manufactured using less / recycled materials and other materials / fittings that need less processing • <i>Development</i> <ul style="list-style-type: none"> ▪ Using recycled materials reduces the need for energy intensive primary processing ▪ The baby carrier could be made using materials that are strong enough to be assembled without extra components • <i>Issue - Reduce energy consumption</i> <ul style="list-style-type: none"> ▪ Use of modern processes / machinery and equipment / technology enabling more energy efficient production • <i>Development</i> <ul style="list-style-type: none"> ▪ Minimise high temperature operations ▪ Contain heated air ▪ Use of automation and control systems ▪ Retrofit existing machinery rather than buy • <i>Issue - Reduce energy consumption</i> <ul style="list-style-type: none"> ▪ Use of sustainable sources of energy and producing as little waste as possible when manufacturing the baby carrier • <i>Development</i> <ul style="list-style-type: none"> ▪ Generating own energy through solar / wind power ▪ Using combined heat and power / energy recovery systems ▪ Minimising overproduction • Lean manufacturing 	<p>(6)</p>
<p>(Total 6 marks)</p>		

Level	Mark	Descriptor
	0	No material deserving of reward
1	1-2	The learner identifies at least two methods for reducing energy consumption or gives a brief description of one method. The learner uses everyday language and the response lacks clarity and organisation. Spelling, punctuation and the rules of grammar are used with limited accuracy.
2	3-4	The learner gives a brief description of at least two methods for reducing energy consumption or a detailed description of one method. The learner uses some technological / manufacturing / environmental terms and shows some focus and organisation. Spelling, punctuation and the rules of grammar are used with some accuracy. Some spelling errors may still be found.
3	5-6	The learner gives a detailed explanation of at least two methods for reducing energy consumption. The learner uses a range of appropriate technological / manufacturing / environmental terms and shows good focus and organisation. Spelling, punctuation and the rules of grammar are used with considerable accuracy.
(Total 6 marks)		
Total Marks for Section B		60
Total Marks for the whole paper for Section A & B		110

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