edexcel

Mark Scheme

Summer 2014 (Results)

Pearson Edexcel
GCSE in Engineering and Manufacturing
5EM03 3C
(Paper 3C: Textiles and Clothing)

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General Marking Guidance

- All learners must receive the same treatment. Examiners must mark the first learner in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Learners must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the learner's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a learner's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the learner has replaced it with an alternative response.
- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

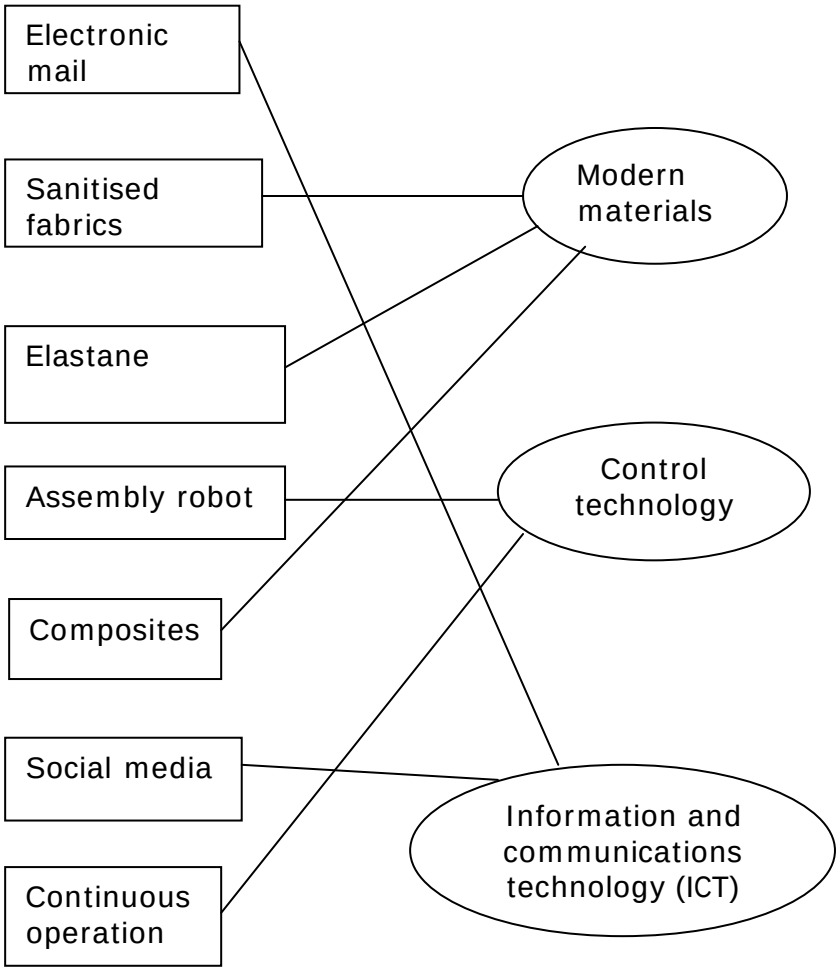
  i) Ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear

  ii) Select and use a form and style of writing appropriate to purpose and to complex subject matter

  iii) Organise information clearly and coherently, using specialist vocabulary when appropriate.

Question	Answer	Mark
1(a)	• Bag for life • Fabric bracelet *If 3 boxes or more crossed - no marks.* (2 x 1)	**(2)**
1(b)	• Ear muffs • Safety boots *If 3 boxes or more crossed - no marks.* (2 x 1)	**(2)**
		(Total 4 marks)

Question	Answer	Mark
2(a)	• Embroidery hoop • Embroidery ring • Machine embroidery hoop *Accept any recognisable spelling (phonetic) of the answer above* *Do not accept 'hoop' on its own* (1 x 1)	
	• Pinking shears • Shears • Pinking scissors *Accept any recognisable spelling (phonetic) of the answer above* *Do not accept 'scissors' on its own* (1 x 1)	**(2)**
2(b)	An answer that makes reference to two of the following points: • Unpicks/removes stitches / sewing when you have made a mistake • Allows you to take stitches out of a fabric • Allows you to slit the inside of a button hole. *Accept any other appropriate response* e.g. Allows you to slit the inside of a buttonhole (1) or remove stitches out of a fabric (1) (1 x 2)	
	An answer that makes reference to two of the following points: • Temporary fastening / joining • Holds fabric / components / garments together • To insert elastic into a casing *Accept any other appropriate response* e.g. Temporary fastener (1) that holds fabrics together (1) (1 x 2)	**(4)**
		(Total 6 marks)

Question	Answer	Mark
3	Key terms linked to a key area **Key Terms** **Key Area**  *No mark awarded where 2 or more lines are drawn from a term. Lines do not have to be straight but term and key area must be clearly linked.* (7 x 1)	**(7)**
		(Total 7 marks)

Question	Answer	Mark
4(a)	Appropriate two **products** such as e.g. • jeans • T-shirt • outdoor jacket • teddy bear • deck chair • summer dress • Baby carriers • Biker gloves • Rucksacks / sports bags • Swimsuits • Fire protective suit • Bullet proof vest • Oven gloves • Performance sports wear • Hiking boots • Weather protective jackets • Nightwear A brand name of a specific product is acceptable *This list is not exhaustive; accept any product from the textiles and clothing sectors and that use control technology in its manufacture.* *Do not accept the name of a fabric on its own* (2 x 1)	**(2)**
4(b)(i)	• Process control • Computer Integrated Manufacturing (CIM) • Robotics • Programmable logic controllers (PLCs) • Automation • Continuous operation • Embedded computers • Thermostat • Computer Aided Manufacture (CAM) • Automated conveyors *Accept any appropriate response* Accept specific machines such as 'injection moulding', 'laser cutting', 'robots', 'conveyor belts', 'CNC machines'. Do not accept 'CAD' without CAM links. (1 x 1)	**(1)**

Question	Answer	Mark
4(b)(ii)	1 mark for identifying reason (x2), 1 mark for why (x2), e.g. Process control • Waste control (1) – as monitors processes and quality control of processes (1) • Product consistency (1) – as better control of processes (1) • Energy conservation (1) – as tighter control of energy into process (1) Robotics • Product consistency (1) – as better control of processes (1) • Efficiency (1) - as less waste/faulty parts (1) • Competitiveness (1) – as faster rates of production (1) Automation • Speed (1) – as faster than human application (1) • Cost control (1) – as less waste/faulty parts (1) • Product consistency (1) – as better control of processes (1) Computer Aided Manufacture (CAM) • Competitiveness (1) – as faster rates of production through application of CAM techniques (1) • Efficiency (1) – as less waste/faulty parts (1) • Product consistency (1) – as better control of processes (1) *Accept any appropriate response* *No answer or incorrect answer to 4(b)(i) no marks for 4(b)(ii)* *Low response (1) or two low responses (2) or detailed response (2), for each of the 2 reasons* (2 x 2)	**(4)**
4(c)(i)	Appropriate fabric for Product 1, e.g. • Denim – jeans • Jersey – T-shirt • Ripstop nylon – outdoor jacket • Faux fur – teddy bear • Twill – deck chair • Poplin –summer dress Do not accept the name of a fibre on its own e.g. cotton, wool, nylon (1 x 1)	**(1)**
4(c)(ii)	Any 2 appropriate points stated: • Denim – strong (1), hardwearing (1), fashionable (1), able to be frayed / dyed / distressed (1), absorbable (1), washable (1) • Jersey – stretchy (1), breathable (1), comfortable (1), wicking properties (1), easy care (1) • Ripstop nylon – very strong (1), very durable (1), water resistant (1), heat sealable (1) • Faux Fur – Soft (1), comforting (1), warm to touch (1), realistic (1) • Twill - strong (1), hardwearing (1), available in a variety of colours(1), absorbable (1), washable (1)	

Question	Answer	Mark
	• Poplin – absorbant (1), lightweight (1), comfortable (1), breathable (1), washable (1) *Accept any appropriate response; no marks for repeating the name of the fabric* *Low response (1) or two low responses (2) or detailed response (2)* (1 x 2)	**(2)**
		(Total 10 marks)

Question	Answer	Mark
5(a)	1 mark for example, 1 mark for extension • Publicising employment opportunities (1) reduces recruitment costs (1) • Easier to research competition (1) reduces design/marketing labour costs (1) • Direct advertising of products (1) minimises need for printed materials, telemarketing etc (1) • Direct sales of products (1) reduces administration costs (1) • Finding suppliers to order materials (1) easily accessible audit trail (1) • Access to progress of order [as customer or seller] (1) more accurate scheduling/management of supply chain or reduced post sales costs (1) *Accept any appropriate response* Accept responses that reference specific types of cost reduction. *Low response (1) or two low responses (2) or detailed response (2)* (1 x 2)	**(2)**
5(b)	1 mark for identifying a benefit (x3), 1 mark for how (x3) • reduced ordering times (1) – automatic monitoring (1) • improve quality/accuracy/ consistency (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) • safer processes (1) – less manual input (1) *Accept any appropriate response* *No repetition* *Do not accept 'easier', or 'faster/quicker' without description, e.g. its quicker and more accurate (1)) –mark awarded for 'more accurate'* *Low response (1) or two low responses (2) or detailed response (2), for each of 3 benefits* (3 x 2)	**(6)**
		(Total 8 marks)

Question	Answer	Mark
6(a)(i)	• Mobile phone/infrared/bluetooth • Internet/wireless/Wi-Fi • Video conferencing • Video calling • Voice over Internet Protocol (VoIP) • Electronic point of sale (EPOS) • EDI • ISDN • Texting • Phone • Walkie talkie • Fax • Smart TV • Smart phone • Tablet • Computer *Accept brand names eg 'Skype' or 'facetime'* *Accept any appropriate response* *Do not accept:* *CAD/database/spreadsheet/telecommunications/search engines eg 'google'* *Do not accept 'TV' on its own* (2 x 1)	**(2)**
6(a)(ii)	1 mark for example (x2) and 1 mark for extension (x2) • To clarify customer requirements (1) so mistakes are not made (1) • To request a product specification/drawings (1) so tools/equipment can be prepared (1) • To contact suppliers (1) so they can order materials/equipment (1) • To communicate information to schedulers (1) so they can reorder work (1) • To update the customer on progress (1) to ensure they are satisfied (1) • To provide the customer with dispatch information (1) so they are able to prepare for receipt of the products (1) *All the answers must relate to the requirement for the products to be made urgently and to the manufacturer* *Low response (1) or two low responses (2) or detailed response (2), for each of the 2 examples* (2 x 2)	**(4)**

Question	Answer	Mark
6(b)(i)	• Phosphorescent pigments • Thermochromic inks • Hydrochromic inks • Photochromic inks • Glow in the dark pigments • Microencapsulated fabric *Accept any appropriate response* *Accept materials from other sectors when related to packaging or processes used* (1 x 1)	**(1)**
6(b)(ii)	1 mark for reason, 1 mark for why • To improve appearance of the material (1) in order to attract customers (1) • To waterproof the material (1) in order to reduce damage (1) • To protect the material (1) in order to improve product lifespan (1) • To change/enhance the properties of the material (1) in order to add value (1) • To meet customer requirements/standards/specification (1) to ensure it is fit for purpose (1) Do not accept a type of finish without a suitable explanation. *Low response (1) or two low responses (2) or detailed response (2)* (1 x 2)	**(2)**
		(Total 9 marks)

Question	Answer	Mark
7(a)	1 mark for identifying benefit, up to 2 marks for extension • Accurate information (1) – instant feedback (1) so more responsive to customer needs (1) • Detailed customer information (1) – tailoring product to target market (1) in order to match customer requirements (1) • Information for strategies/campaigns (1) – choosing correct media (1) for target customer (1) • Information for advertising campaigns (1) – modelling sales versus demand (1) allowing the use of correct parameters (1) • Profit/loss information available (1) – can be shown in graphical form (1) therefore easy to see where sales efforts should be targeted (1) • Ordering to meet sales faster (1) – repeat purchases (1) and production set up based on sales data (1) *Accept any other appropriate response* *Low response (1) or detailed statement (3)* (1 x 3)	**(3)**
7(b)	1 mark for identifying benefit, up to 2 marks for extension • Accurate information (1) – updated regularly (1) so production status clear (1) • Detailed information (1) – high storage space (1) so production data can be interrogated over a variety of time periods (1) • Fast access to data (1) – search/sort/query (1) enables ability to isolate production issues (1) • Improved planning (1) – shorter lead times (1) therefore faster throughput (1) • Forecasting (1) – collects volumes of data/modelling (1) so forward planning is more accurate (1) • Cost of control (1) – better scheduling (1) enabling lower overheads (1) • Waste control (1) – process monitoring/control (1) highlighting QC issues (1) • Reduced stock holding (1) – tracks trends/JIT [Just-In-Time] (1) improving efficiency in the supply chain (1) • Training records (1) – skills monitoring (1) so deployment more efficient (1) *Accept any other appropriate response* *Low response (1) or detailed statement (3)* (1 x 3)	**(3)**
		(Total 6 marks)
	Total Marks for Section A	**50**

Question	Answer	Mark
8(a)	An answer that makes reference to any of the following points: • To allow the umbrella to be held in the hand • To allow the handle to be gripped ergonomically • To be able to hook the umbrella onto something for safe keeping when not in use • To provide support when using the umbrella • To hold the spoke tips in place when the umbrella is collapsed *Accept any other appropriate response* *Answer must contain both notes and sketches.* *Max **two** marks if only notes or only sketches used.* (3 x 1)	**(3)**
8(b)	An answer that makes reference to any of the following points: • Allows fabric of umbrella to be held taut • To allow the umbrella to keep its shape • To allow the fabric of the umbrella to shield the user from the weather • To allow the umbrella to be put up and taken down • To provide support for the umbrella in windy weather *Accept any other appropriate response* *Answer must contain both notes and sketches.* *Max **two** marks if only notes or only sketches used.* (3 x 1)	**(3)**
8(c)	An answer that makes reference to any of the following points: • To keep the umbrella compact when not in use • To fasten the fabric of the umbrella together so that the item may be stored in a smaller space • To prevent the user from getting wet if the umbrella has been used • To protect the spokes from damage when the umbrella is not in use *Accept any other appropriate response* *Answer must contain both notes and sketches.* *Max **two** marks if only notes or only sketches used.* (3 x 1)	**(3)**
		(Total 9 marks)

Question	Answer	Mark
9(a)(i)1	• Marketing (1 x 1)	
9(a)(i)2	• Assembly and finishing • Finishing and assembly • Assembly • Finishing (1 x 1)	**(2)**
9(a)(ii)	• Design • Stage 1/stage one • One/1 • First/ First stage (1 x 1)	**(1)**

Question	Answer	Mark
9(b)	• Checking availability of suitable materials/bought-in consumables(1) • Purchase of suitable materials/ bought-in consumables((1) • Sourcing of materials/ bought-in consumables (1) • Price negotiation (1) • Good inwards inspection/testing (1) • Quality control checks (1) • Coding checks (1) • Storage of materials/consumables (1) • Progress chasing (1) • Stock taking / keeping (1) *Accept any other appropriate response* (3 x 1)	**(3)**

Question	Answer	Mark
9(c)	Appropriate descriptions including three of the following points (statements must be applicable to the umbrella): • Scheduling production (1) • Converting order to production (1) • Materials requirements (1) • Labour requirements (1) • Deadlines (1) • Throughputs (1) • Machinery/equipment requirements (1) • Quality check requirements (1) • Specifying control points (1) • Health and safety requirements (1) • Storage requirements (1) *Accept any other appropriate response* e.g. The stage where the manufacturer decides how the product is going to be made (1), what materials are needed (1) and what processes will be used during manufacturing (1). e.g. The stage where the specification for the umbrella is used by the planning team to set out all operations (1) and to schedule (1) the umbrella through the production/processing department to meet the required delivery deadlines (1). This could include specifying any special materials or consumables (1) and stating machinery requirements (1). *3 x 1 mark for 3 low responses or up to 3 for a detailed response* (1 x 3)	**(3)**
		(Total 9 marks)

Question	Answer	Mark
10(a)	• Velcro • Press stud / Popper • Elastic loop • Button *Any other appropriate response* (1 x 1)	**(1)**
10(b)(i)	Any three of the following: • Material shaping, such as cutting • Lay planning • Spreading • Folding • Cutting • Die cutting • Fusing • Bonding • Sewing • Overlocking • Printing • Blow moulding • Drilling • Punching *Any other appropriate response* *Accept any recognisable spelling (phonetic) of the answers above* *Do not accept 'moulding' on its own* (3 x 1)	**(3)**
10(b)(ii)	An explanation that makes reference to three of the following points: • Cost per unit is low • Complex shapes can be produced easily • Products have consistent quality • relatively inexpensive moulds/much cheaper tooling than other forming methods • durable moulds/can be replaced infrequently • quick changeover rate/easy to change mould • quick method/fast production rate when produced in batches • can be mass produced easily • unit costs are very low for medium to high volume production runs • highly automated process • reliable process • minimal waste • not labour intensive • products have consistent quality	**(3)**

Question	Answer	Mark
	• can produce multiple parts e.g. Highly automated process (1) allowing products to be mass produced easily (1) with a consistent quality (1) *Accept any other appropriate response* *Do not accept 'easier', or 'faster/quicker' without qualification* *3 x 1 mark for 3 low responses or up to 3 for a detailed response* (1 x 3)	
10(c)	An explanation that makes reference to three of the following points: • materials are less likely to be made from non-renewable/finite resources • materials can be bio-degradable • materials take less processing in manufacture • materials consume less energy in manufacture • smaller volume of material is used • materials can be recycled • reduced use of pesticides/chemicals *Do not accept generic responses such as 'less global warming' or 'less CO_2' without qualification* *3 x 1 mark for 3 low responses or up to 3 for a detailed response* (1 x 3)	**(3)**
		(Total 10 marks)

Question	Answer	Mark
11(a)(i)	Any two of the following: • Drafting possible solutions / final design drawings • Modelling/editing possible solutions/final designs • Conversion from 2D to 3D • Use of websites/internet to investigate existing designs • To source materials/supplies/consumables • Costing resource requirements • To communicate with client/customer • Easy storage and retrieval of data/information • Interaction with databases • Calculation of weight/strength characteristics *Accept any other appropriate response* Do not accept software package names eg '2D design', 'autocad', 'sketch up' on its own. Do not accept a type of ICT without an appropriate link to one of the above points. *No repetition* (2 x 1)	**(2)**
11(a)(ii)	1 mark for identifying the use (x2), 1 mark for how (x2) • Development of labelling (1) and/by electronic tagging protocol (1) • Electronic monitoring (1) of some processes (1) • Use of bar codes (1) to monitor packaging/dispatch of umbrellas(1) • Interrogating customer orders (1) so deliveries can be batched together (1) • Use of software (1) to record/log output of umbrellas (1) • Real time dispatch and delivery information (1) in order to raise invoices (1) *Accept any other appropriate response* *Low response (1) or two low responses (2) or detailed response (2)* (2 x 2)	**(4)**
11(b)	1 mark for identifying the benefit, 1 mark for how • 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 retailers the opportunity to match customer needs (1) with the production of umbrellas (1) • Gives distributors fast sales data (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)	**(2)**

Question	Answer	Mark
	• Navigation software (1) enables route planning to reduce costs (1) • Efficient tracking/monitoring (1) leads to fewer product losses (1) *Accept any other appropriate response* *Low response (1) or two low responses (2) or detailed response (2)* (1 x 2)	
11(c)	An answer that makes reference to any of the following points with explanation: • Fast time to market for latest types of umbrellas • Use of ICT in market research enables manufacturer to match new types of umbrella to market want/needs • Function/style information available for whole design team • Speed/efficiency of modelling • Modification of ideas • Improved aesthetics • Ease/speed of creating virtual products • On screen design ideas • Speed of decision making by client • Easy access to design data • Working drawings/manufacturing specifications available for whole team • Easy access to manufacturing information in company database • Manufacturing time not wasted • Efficiency of costing materials • Speed of decision making for design team/client • Allows best materials to be used • Appropriate use of database • Modelling ensures characteristics are fit for purpose • Production processes are controlled better *Accept any other appropriate response* *Up to 4 low responses (4) or detailed response (up to 4)* *e.g.'s* *ICT allows for conversion from 2D to 3D (1) which means designs can be modelled virtually (1) and then tested for development purposes onscreen (1). Resource requirements can also be planned from the virtual model (1).* *Modelling ensures characteristics are fit for purpose (1) as it allows fast product development (1) as a result of creating virtual products (1), speeding up the decision making process between client and design team (1).* *Manufacturing time is not wasted (1) as decisions made by the client are quicker (1). This gets products to market faster (1), therefore increasing sales (1).*	**(4)**

Question	Answer	Mark
	Responding to the client's modification of ideas (1) allows modelling (1) of change and ensures efficiency of costing materials (1) and manufacturing time not wasted (1). *ICT gives easy access to a range of design data (1) which means updating of drawings can be effectively carried out (1) and when linked to the production department, can change the requirements of operations (1) in production without lengthy delays (1).* *ICT has allowed new designs for umbrellas to reach the market more quickly (1) as the design, development and production processes have become faster. Onscreen design ideas (1) can be modified (1) quickly and can easily be converted into a 3D model (1).* (4 x 1)	
		(Total 12 marks)

Question	Answer	Mark
12(a)	1 mark for identifying effect (x2), 1 mark for extension (x2) • Workforce will be smaller in size (1) resulting in increased competition for fewer jobs (1) • Workforce will be better educated (1) as higher level of development skills required (1) • Less physically demanding tasks (1) but increased flexibility in work patterns [shifts] (1) • Less employment for unskilled (1) as constant need to retrain (1) • Team working more important(1) due to increased specialisation (1) • Improved promotion prospects for those in post (1) as skills in demand (1) *Accept any other appropriate response* *Low response (1) or two low responses (2) or detailed response (2)* (2 x 2)	**(4)**
12(b)	1 mark for identifying benefit (x 2), 1 mark for extension (x2) • Cleaner (1) – tidier processing/contained processing (1) • Safer (1) – automation can self regulate/work less likely to be done by humans/machines do not tire and become dangerous (1) • Quieter/reduction in noise pollution (1) – soundproofing possible as processing can be enclosed (1) • Healthier (1) – processes can monitor the environment and react accordingly (1) *Accept any other appropriate response* *Low response (1) or two low responses (2) or detailed response (2)* (2 x 2)	**(4)**
12(c)	Any 2 appropriate points stated: • Possible production throughput/quantities achievable with increased automation • Probable energy usage with increased automation • Cost of installing new automation • Cost of commissioning new automation • Operational costs of new automation • Maintenance costs due to complexity of automation • Product quality achievable with new automation • Product range achievable with new automation • Customer satisfaction achievable with new automation • Increased emissions/noise pollution due to increased automation *Accept any other appropriate response* *Do not accept responses associated with the workforce or the working environment* (2 x 1)	**(2)**
		(Total 10 marks)

Question	Answer	Mark
13	An answer that makes reference to any of the following points with explanation: • Collection and reuse of exhaust/vented gasses generated during production • Collection and reuse of conduction/convection/radiation heat generated during production • Collection and reuse of heat collected by cooling/ventilation systems • Use of Combined Heat and Power systems • Use of heat exchangers/heat sinks • Improving the energy efficiency of the heat generating process • Pre-heating to reduce energy usage • Heating other production processes, e.g. drying processes • Space heating • Heating water • Selling renewable electricity back to the National Grid • Absorption refrigeration e.g. The manufacturer of umbrellas could use systems to collect and reuse heat from production processes (1), and these systems could pre-heat the same process (1), or the waste from processes could be used to heat water (1) in the production plant, all to save energy and money (1). *Any other appropriate response* *Up to 4 low responses (4) or detailed response (up to 4)* (1 x 4)	**(4)**
		(Total 4 marks)

Question	Answer	Mark
14 **QWC i, ii, iii**	**Indicative content** Discussion may address the following issues: • *Benefit* ▪ Efficient manufacturing system • *Development* ▪ Introduction of a pull system ▪ Highly responsive to customer demand, as products can be manufactured as and when required ▪ Production controlled by 'kanbans', hence manufacture not regarded as 'fixed' to a certain number ▪ Errors dealt with as and when they occur, as issues with 'upstream' processes have a visible effect on 'downstream' processes • *Benefit* ▪ Integrated supply chain • *Development* ▪ Collaboration with suppliers results in productivity improvements along the supply chain ▪ Reduced number of 'key' suppliers with a greater interest in ensuring the flow of completed product ▪ Improved accountability/traceability, as defective product is easily identifiable • *Benefit* ▪ Reduced inventory • *Development* ▪ Minimises the cost of storing raw materials/'work in progress'/finished goods, as all arrive at the right place when required ▪ Reduces the need for storage space, as a higher percentage of floor area can be used for 'value adding' activities ▪ Product obsolescence is highly unlikely, hence negligible percentage of unsold stock • *Benefit* ▪ Multi-skilled employees • *Development* ▪ Employees are trained to complete a variety of tasks, so they can be deployed to ensure the smooth flow of production ▪ Improved motivation, as variety in daily work ▪ Workers empowered to suggest/implement improvements *Any other appropriate response* Example learner answer (Level 3): Just-in-time saves money by reducing inventory thus reducing the cost of storing raw materials and finished goods, as they should all arrive at the right place when required. This reduces the need for expensive storage space, so a higher percentage of floor area can be used for value adding activities, and simple kanbans can be used to signal when work in progress is ready for the next operation to be carried out. Because everything needs to happen smoothly and just-in-time, problems are very obvious and have to be dealt with	**(6)**

Question	Answer	Mark
	there and then, and cannot be hidden. This means workers are generally multi-skilled, so they can go to the place in the factory that they are needed most to ensure the smooth flow of production.	
		(Total 6 marks)

Level	Mark	Descriptor
	0	No material deserving of reward
1	**1-2**	The learner identifies at least two benefits of using 'just-in-time' techniques or gives a brief description of one benefit, and shows some understanding of the topic. 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 benefits of using 'just-in-time' techniques or a detailed description of one benefit. The learner uses some manufacturing/technological 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 benefits of using 'just-in-time' techniques. The learner uses a range of appropriate manufacturing/technological 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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