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# **GCE AS MARKING SCHEME**

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**SUMMER 2019**

**AS (NEW)  
DESIGN AND TECHNOLOGY - FASHION & TEXTILES  
2602U10-1**

## **INTRODUCTION**

This marking scheme was used by WJEC for the 2019 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**GCE AS DESIGN AND TECHNOLOGY**  
**SUMMER 2019 MARK SCHEME**  
**UNIT 1 - FASHION AND TEXTILES**


	<b>Question 1</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	<p>A product will go through many stages of the design process before it is ready for final production.</p> <p>The image below shows a prototype/toile of a jacket.</p>			
(a)	<p>Define the term 'prototype/toile'.</p>		/	1
	<p>Answers that demonstrate an understanding of a toile/prototype and how it relates to the design process should be awarded up to 1 marks based on:</p> <p>A toile or prototype is an initial 'mock up' of a garment made in a cheap fabric so you can check and alter how the garment/pattern fits your body before cutting into the real fabric. Once a toile has been made, a designer will make alterations to the shape and style of the toile, change the pattern pieces and produce another toile until the final fit/style has been realised.</p> <p><b>Guidance to markers</b></p> <p>No answer or an incorrect answer. <span style="float: right;"><b>0 marks</b></span></p> <p>A toile or prototype is an initial mock up of a garment made in a cheap fabric. <span style="float: right;"><b>1 marks</b></span></p>			

	<b>Question 1</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
(b)	Describe the benefits of producing a prototype/toile to the designer.		/	3
	<p>Answers that demonstrate an understanding of the benefits of producing a toile to the designer should be awarded up to 3 marks based on:</p> <p>A toile or prototype allows the designer to visualise the garment in a 3D form; a toile is an inexpensive and quick method of making a mock up of the final garment; the garment can be tried on for fit/size and adjustments can be made accordingly before the end product is produced, this saves on costly mistakes; a toile is usually made out of calico.</p> <p>Accept any other appropriate responses.</p> <p><b>Guidance to markers</b></p> <p>No answer or an incorrect answer <b>0 marks</b></p> <p>A basic response for example: A benefit of producing a toile is so that the designer and customer can visualise the product in 3D form. <b>1 mark</b></p> <p>A more developed response for example: A benefit of producing a toile is so that the designer and customer can visualise the product in 3D form in an inexpensive way before making the final product. <b>2 marks</b></p> <p>A developed response for example: A benefit of producing a toile is so that the designer and customer can visualise the product in 3D form in an inexpensive way and make changes to the size/fit before making the final product. <b>3 marks</b></p>			

	<b>Question 1</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
(c)	<p>A manufacturing specification contains all essential information needed for production. A working/flat drawing of the product, like the one shown below, is a typical requirement.</p> <p>Describe in detail <b>two</b> other essential pieces of information that are required in a manufacturing specification to ensure a successful outcome.</p>		/	4
	<p>Answers that demonstrate an understanding of what information is needed on a manufacturing specification to ensure a successful product, should be awarded up to 4 marks based on:</p> <p>A manufacturing specification outlines all relevant information/details for producing the product, including tools, equipment, material, fastenings, construction method, sizes and dimensions, include cost and usually a scaled flat or 3D line drawing.</p> <p>It is vital for the manufacturer to have a detailed manufacturing specification before it goes into full scale production so that the manufacturer has all the details needed to make an accurate product</p> <p>Manufacturers can ensure that the client is getting exactly what they want. Manufacturers have all the details to relay to the manufacturing team.</p> <p><b>Guidance to markers</b></p> <p>The candidate must have named/described <b>two</b> requirements and made reference to its importance to gain the full 4 marks.</p> <p>No answer or an incorrect answer <b>0 marks</b></p> <p>A basic response for example: A manufacturing specification must include sizes. <b>1 mark</b></p> <p>Some understanding with slightly more detail: A manufacturing specification must include all product sizes/dimensions so to achieve a product which is accurate in fit/size. <b>2 marks</b></p> <p>The candidate is able to give more than one example of what information is needed on a manufacturing specification and is able to expand. <b>3 marks</b></p> <p>A full and detailed response: a detailed and full understanding of the requirements on a manufacturing specification to ensure a successful product. The candidate must have named/described <b>two</b> requirements and made reference to its importance to gain the full 4 marks. <b>4 marks</b></p> <p>Accept any other appropriate responses.</p>			

	<b>Question 2</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	Designers will often use Computer Aided Design (CAD) when developing and presenting ideas as shown below.			
	Describe in detail the advantages and disadvantages that Computer Aided Design (CAD) has had on the fashion and textile industry when presenting ideas		/	8
	<p>Answers that demonstrate an understanding of the impact that CAD has had on the design industry should be awarded up to 8 marks based on:</p> <p><b>Advantages of CAD to industry:</b></p> <p>Absolute accuracy can be maintained so little mistakes are made – reduces human error.</p> <p>The computer keeps a record of all dimensions in the drawing, this makes editing/checking easier.</p> <p>Editing processes include the ability to copy, move, rotate, mirror and erase drawing parts which makes the process move quickly and with little cost.</p> <p>Hard copies can be produced in colour and to a high professional standard making the product easy to realise.</p> <p>The drawings can be reproduced as often and as quickly as you want unlike drawing by hand.</p> <p>CAD software can link up to machinery to aid production.</p> <p><b>Disadvantages of CAD to industry:</b></p> <p>The cost of purchasing and replacement cost of the equipment is expensive compared to equipment used to draw manually.</p> <p>There are still some shapes that are difficult to draw using CAD software so hand drawing is necessary.</p> <p>Staff need to be trained to use the software which is an added cost. As the software is quicker and more accurate to use, less staff are needed, positive to the design company but negative to skilled employers.</p> <p>Candidates must discuss both advantages and disadvantages.</p> <p>Accept any other appropriate responses.</p>			

	<b>Question 2</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	<p><b>Guidance to markers</b></p> <p>No answer or an incorrect answer. <b>0 marks</b></p> <p>Brief description of relevant advantages and disadvantages of CAD. <b>1-2 marks</b></p> <p>More detailed description of relevant advantages and disadvantages of CAD. <b>3-4 marks</b></p> <p>Clear description of the advantages and disadvantages that Computer Aided Design (CAD) has had on the fashion and textile industry. <b>5-6 marks</b></p> <p>Clear and detailed description of the advantages and disadvantages that Computer Aided Design (CAD) has had on the fashion and textile industry. <b>7-8 marks</b></p>			

	<b>Question 3</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	Bamboo textile fibre is extracted from the bamboo plant which is shown below. It is now widely used in the fashion and textile industry.			
(a)	An important property of bamboo is absorbency. Using notes and a simple sketch, explain how the bamboo fibre is able to absorb moisture.		/	3
	<p>Answers that demonstrate an understanding of why the bamboo fibre is able to absorb water should be awarded up to 3 marks based on:</p> <p>Bamboo fibre cross section – sketch which resembles this in some way will be accepted.</p> <p>A cross-section of bamboo fibre reveals various micro-holes, allowing bamboo cloth to have superior absorption. This allows bamboo cloth to absorb and evaporate human sweat rapidly. Bamboo fibre is four times more absorbent than cotton.</p>  <p>Accept any other appropriate response.</p> <p><b>Guidance to markers</b></p> <p>Full marks should <b>not</b> be awarded if there is no simple sketch.</p> <p>No answer or an incorrect answer <b>0 marks</b></p> <p>A basic response with limited understanding of how bamboo fibre is able to absorb moisture. <b>1 mark</b></p> <p>A developed response with a simple sketch which shows good understanding of how the bamboo fibre is able to absorb moisture. <b>2 marks</b></p> <p>A detailed response with a sketch which shows very good understanding of how the bamboo fibre is able to absorb moisture. <b>3 marks</b></p>			



	<b>Question 3</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
(b)	Discuss the advantages of using bamboo fibre. Give examples of its uses in your answer.		/	5
	<p>Answers that demonstrate an understanding of bamboo fibre and it's uses should be awarded up to 5 marks based on:</p> <p>Bamboo fibre is used for a range of clothing, such as shirts, dresses, socks and trousers and because of its antimicrobial properties, is ideal for active wear. Bamboo is often blended with cotton to add structure to garments. Bamboo is also used for sheets and pillowcases.</p> <p>Naturally soft; Bamboo is softer than cotton, and it has a natural sheen like silk or cashmere. Bamboo drapes like silk or satin yet is less expensive and more durable. Allergy reduced; Bamboo's organic and naturally smooth fibre properties are non-irritating to the skin, making it ideal for people with skin sensitivities or other allergies and dermatitis. Thermal regulating; ensuring that you are warm in the winter and cool in the summer. Bamboo clothing's excellent wicking properties also make it ideal for warm summer days.-Absorbs moisture; A cross-section of bamboo fiber reveals various micro-holes, allowing bamboo cloth to have superior absorption. This allows bamboo cloth to absorb and evaporate human sweat rapidly. Bamboo fibre is four times more absorbent than cotton. Breathable; The porous qualities of bamboo fibre account for its breathability; clothing made of bamboo resists clinging during hot weather or exercise. Anti-bacterial; Bamboo fabric contains a naturally occurring anti-microbial agent, kun, that prevents bacteria from cultivating on it, which means it helps keep you odor free. UV protection; Bamboo naturally provides added protection against the sun's harmful UV rays.</p> <p>Note: Marks for absorbency can be awarded but the answers must be discussed and exemplified.</p> <p>Accept any other appropriate responses.</p> <p>Guidance to markers</p> <p>No answer or an incorrect answer <b>0 marks</b></p> <p>Basic understanding of bamboo fibre. <b>1-2 marks</b></p> <p>A few suggestions on the uses of bamboo and shows a basic understanding of bamboo fibre. <b>3-4 marks</b></p> <p>Clear and relevant understanding of bamboo fibre and its uses. <b>5 marks</b></p>			

	<b>Question 4</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	Fibres are blended and mixed together to create new fabrics which have different properties. The socks shown below contain four different fibres.			
	Analyse <b>each</b> of the fibres shown above in relation to the properties that are required for a pair of socks.	/		8
	<p>Answers that demonstrate an understanding of each fibre and its suitability should be awarded up to 8 marks based on:</p> <p><b>Viscose</b> – moisture absorbent, breathable, soft against the skin, comfortable to wear and easily dyed, does not build up static electricity and does not pill, blends easily with other fibres.</p> <p><b>Polyester</b> – fibres are extremely strong and durable, resistant to most chemicals, stretching and shrinking, hydrophobic in nature and quick drying, easily washed and dried.</p> <p><b>Nylon</b> – warm to wear, dries slowly, soft handle, can shrink, durable.</p> <p><b>Elastane</b> - always used in a blend with other fibres. Small percentage is used. It is used to make sportswear, body-hugging clothes. Is durable, crease resistant, stretchy (more comfortable) and is easy care for.</p> <p>Each fibre must be analysed.</p> <p><b>Guidance to markers</b></p> <p>Little or no understanding. <b>0 marks</b></p> <p>Basic understanding of the properties of each of the fibres shown. <b>1-2 marks</b></p> <p>Satisfactory understanding of the suitability of each of the fibres shown in relation to the properties that are required for a pair of socks. <b>3-4 marks</b></p> <p>Good understanding of the suitability of each of the fibres shown in relation to the properties that are required for a pair of socks. <b>5-6 marks</b></p> <p>Detailed understanding of the suitability of each of the fibres shown in relation to the properties that are required for a pair of socks. <b>7-8 marks</b></p>			

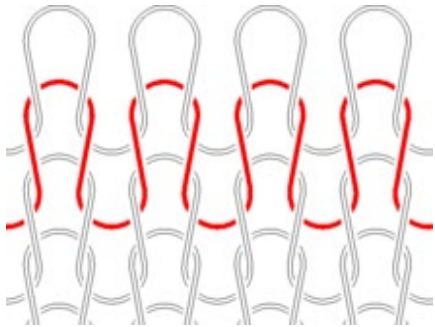
	Question 5	AO3	AO4	Mark
	Julien Macdonald is a Welsh fashion designer.			
	Describe the work of Julien Macdonald including his style and any outside influences that have affected his style of design. Give examples from a variety of his fashion collections in your answer.  <i>Marks will be awarded for the content of the answer and the quality of written communication.</i>		/	8
	<p>Answers that demonstrate an understanding of the work of Julien Macdonald and are able to give examples of collections should be awarded up to 8 marks based on:</p> <p><b>Style of Macdonalds work:</b> Julien Macdonald is best known for his elegant evening gowns. His style of gown has altered through the years and has included sequins, fringing, asymmetrical necklines, colourful prints and leg splits. He has most recently been known for his barely there gowns inspired by his love of dancing.</p> <p><b>Outside influences:</b> Julien’s first encounter with fabric was in his home town of Merthyr where he was taught knitting by his mother and this was his first encounter in design and the study of textiles, he would knit his family jumpers and rework his school uniform. Julien Macdonald loves to dance and trained as a tap dancer, this is reflected in his work and he appeared on Strictly Come Dancing himself as a contestant in 2013.</p> <p><b>Examples of fashion collections:</b> SS2017 showcased his usual love for sequins, intricate beading and cutaway designs which appeared to have ball-room influences. Thigh high dresses decorated with beaded fringing would not look out of place on the dance floor. Julien Macdonald attracted much criticism for his extensive use of fur in his collections. In February 2007, Macdonald was again criticised for the prominent use of fur in his autumn collection.</p> <p>Accept any other appropriate responses</p>			

	<b>Question 5</b>	<b>A03</b>	<b>A04</b>	<b>Mark</b>
	<p><b>Guidance to markers</b></p> <p>Answers must describe the designer's style and the elements that have influenced his design thinking.</p> <p>All parts of the question must be answered for full marks.</p> <p>No answer or incorrect, no evidence of understanding. <b>0 marks</b></p> <p><b>Level 1 1-2 marks</b></p> <ul style="list-style-type: none"> <li>• Candidate has a simplistic knowledge of the issues associated with the question.</li> <li>• Limited use of terminology and technical language.</li> <li>• The candidate has limited knowledge in relation to the designer.</li> <li>• The candidate has expressed basic ideas clearly, if not always fluently. Answers may deviate from the question or not be relevant.</li> <li>• Grammar, punctuation and spelling may be weak impacting on effective communication.</li> </ul> <p><b>Level 2 3-4 marks</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic understanding of the issues associated with the question.</li> <li>• Satisfactory use of terminology and technical language.</li> <li>• The candidate has some general knowledge of the designer and his work.</li> <li>• The candidate has expressed straightforward ideas clearly, if not always fluently.</li> <li>• Answers may deviate from the question or be weakly presented.</li> <li>• There may be some errors of grammar, punctuation and spelling but is still able to communicate the issues.</li> </ul> <p><b>Level 3 5-6 marks</b></p> <ul style="list-style-type: none"> <li>• The candidate demonstrates a clear understanding of the issues associated with the question.</li> <li>• Good use of terminology and technical language.</li> <li>• The candidate has demonstrated knowledge of the designer and his work.</li> <li>• The candidate has express moderately complex ideas clearly and fluently, through well linked sentences and paragraphs. Answers are generally relevant and structured.</li> <li>• There may be occasional errors of grammar, punctuation and spelling.</li> </ul> <p><b>Level 4 7-8 marks</b></p> <ul style="list-style-type: none"> <li>• The candidate demonstrates a specific ability to analyse the question, takes into account a wide range of factors and has a clear understanding of the designer and his work.</li> <li>• Very good use of terminology and technical language.</li> <li>• The candidate has developed a detailed knowledge of designer and his work.</li> <li>• The candidate has express complex ideas extremely fluently. Sentences and paragraphs will follow on from each other smoothly and logically. Answers are consistently relevant and structured.</li> <li>• There will be few, if any, errors of grammar, punctuation and spelling.</li> </ul>			

	<b>Question 6. Design brief</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	Over the last 10 years, there has been an increase of popularity in wearable technology in sports clothing. Examples of wearable technology in sports clothing are shown below.			
(a)	Evaluate the advantages and disadvantages of wearable technology in sports clothing to the consumer.	/		8
	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>• Consumers of all abilities and interests in sports can track/improve heart rate, respiration, movement etc. with the aid of wearable technology - good for over-all health.</li> <li>• There are many products at different price ranges on the market to appeal to most/a range of consumers. Some electronic devices are inbuilt into sportswear and other products can be inserted/used with current sportswear. Easily accessible these days, can be ordered online or purchased on the highstreet.</li> <li>• Clothing offers a more accurate reading than other technology as its worn close to the skin.</li> <li>• More expensive (specialist) electronic products will not interfere with the athlete as the electronics are in-built/concealed within the clothing and so are not seen or felt by the consumer.</li> <li>• Consumers are able to collect/compare/analyse data to track their progress – this improving overall fitness.</li> <li>• Small, compact electronic products are easily carried around when not in use.</li> </ul> <p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>• Some products can be expensive to purchase when compared to sportswear without wearable technology.</li> <li>• Electronic products will need charging, battery life maybe short so could be inconvenient to the consumer when they need to use it.</li> <li>• Some wearable technology in clothing does not look sleek, wires need to be embedded within the garment.</li> <li>• May not be able to machine wash without taking out the technology so quite inconvenient to the wearer.</li> <li>• How long will the wearable technology last? Might need replacing in a year, adding to cost.</li> <li>• Sensors which are stitched into the garment permanently need to be replaces after approximately 70 washes.</li> </ul>			

	<b>Question 6. Design brief</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
	<p><b>Guidance to markers</b></p> <p>Advantages and disadvantages must be evaluated.</p> <p>No answer or an incorrect answer. <b>0 marks</b></p> <p>Brief description of relevant advantages and disadvantages of wearable technology in sports clothing to the consumer. <b>1-2 marks</b></p> <p>More detailed description of relevant advantages and disadvantages of wearable technology in sports clothing to the consumer. <b>3-4 marks</b></p> <p>Clear and detailed description of relevant advantages and disadvantages of wearable technology in sports clothing to the consumer. <b>5-6 marks</b></p> <p>Detailed evaluation and understanding of relevant advantages and disadvantages of wearable technology in sports clothing to the consumer. <b>7-8 marks</b></p> <p>Accept any other appropriate responses</p>			

	<b>Question 6. Design brief</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
(b)	<p>A sportswear company wants to include wearable technology in a new product range.</p> <p>You have been asked to design a creative and original piece of sportswear for a young adult that includes wearable technology.</p>		/	16
	<p><b>Guidance to markers</b></p> <p>(i) a presentation drawing of the front and back views of the piece of sportswear clothing; [4]</p> <p><i>Simple line drawing of the front or back view – 1 mark</i></p> <p><i>Front and back views shown in a simplistic way – 2 marks</i></p> <p><i>Front and back view drawn to a good quality which includes detail – 3 marks</i></p> <p><i>Front and back views drawn to a high standard which includes all details – 4 marks</i></p> <p>(ii) the creativity and originality of your idea; [4]</p> <p><i>The design shows some originality – 1 mark</i></p> <p><i>The design shows some creativity – 2 marks</i></p> <p><i>The design shows some creativity and originality – 3 marks</i></p> <p><i>The design is both creative and original – 4 marks</i></p> <p>(iii) detailed notes and sketches that indicate how you have incorporated wearable technology into the design; [4]</p> <p><i>Some annotation/communication of how the product will track performance – 1 mark</i></p> <p><i>The candidate has annotated/communicated how the product will track performance – 2 marks</i></p> <p><i>The candidate has annotated/communicated how the product will track performance in detail – 3 marks</i></p> <p><i>The candidate has annotated and communicated how the product will track performance in detail – 4 marks</i></p> <p>(iv) the quality of communication. [4]</p> <p><i>Marks will be awarded to the candidate for good sketching and/or annotation to communication the ideas. Both sketching and annotation needs to be of a high quality to award the full 4 marks.</i></p>			

	<b>Question 6. Design brief</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
(c)	Using notes and diagrams explain in detail how the construction of a knitted material makes it suitable for sportswear.			8
	<p>Knitted fabrics consist of yarns looped together in various ways. There are two main types of knitted fabrics – warp and weft. The interlocking yarns allow for flexibility, movement and stretch within the fabric. Sportswear needs to be comfortable during exercise, have good stretch ability for ease of movement, and form fitting to contour to the body's outline. The construction of knitted fabrics allow for this. Knitted fabrics trap air and are good insulators in still air. However, moving air is able to get through the gaps in the fabric therefore making it cool to wear when moving.</p> <p>Diagram shows an example of knitted yarns to demonstrate how the yarns are looped together to form stretch and movement. The diagram also shows how air can be trapped to provide good insulation and flow through the gaps to make the fabric cool to wear.</p>  <p><b>Guidance to markers</b>  No answer or an incorrect answer. <b>0 marks</b></p> <p>The candidate has showed basic understanding of how the construction of a knitted material makes it suitable for sportswear. <b>1-2 marks</b></p> <p>The candidate has showed understanding of how the construction of a knitted material makes it suitable for sportswear. <b>3-4 marks</b></p> <p>The candidate has used both notes and a diagram to explain how the construction of a knitted material makes it suitable for sportswear. <b>5-6 marks</b></p> <p>The candidate has used both notes and a diagram to explain in detail how the construction of a knitted material makes it suitable for sportswear. <b>7-8 marks</b></p> <p>Accept any other appropriate responses</p>			



	<b>Question 6. Design brief</b>	<b>AO3</b>	<b>AO4</b>	<b>Mark</b>
(d)	<p>The sports jacket shown below is made out of Gore-Tex.</p> <p>Explain how Gore-Tex in terms its characteristics and properties is suitable for the sports jacket above.</p>		/	8
	<p>The candidate must demonstrate their knowledge of Gore-Tex</p> <p><b>Main properties of Gore-Tex</b></p> <p>A waterproof, breathable fabric membrane. Gore-Tex is able to repel liquid water while allowing water vapour to pass through, and is designed to be a lightweight, waterproof fabric for all-weather use. It is composed of stretched polytetrafluoroethylene (PTFE), which is more commonly known by the generic trademark Teflon.</p> <div> </div> <p>Please accept a diagram of Gore – Tex with an explanation.</p> <p><b>Suitability for a sports jacket</b></p> <p>The Gore–Tex membrane allows sweat from the wearer to evaporate through the jacket allowing the wearer to keep cool and dry. The jacket is lightweight so that it does not prevent or hinder the wearer in anyway. The jacket can be worn in all weathers, keeping the wearer warm and dry as Gore-Tex is waterproof.</p> <p><b>Guidance to markers</b></p> <p>No answer or incorrect, no evidence of understanding. <b>0 marks</b></p> <p>The candidate has a simplistic knowledge of the properties of Gore-Tex. <b>1-2 marks</b></p> <p>The candidate has good knowledge of the properties of Gore-Tex. <b>3-4 marks</b></p> <p>The candidate shows that they have an understanding of Gore-Tex and why it is a suitable fabric for a sports jacket. <b>5-6 marks</b></p> <p>The candidate shows that they have clear knowledge of why Gore-Tex would be a suitable fabric for a sports jacket in relation to its characteristics and properties. <b>7-8 marks</b></p> <p>Accept any other appropriate responses</p>			