GCE AS/A LEVEL

WJEC GCE AS/A Level in

DESIGN AND TECHNOLOGY

APPROVED BY QUALIFICATIONS WALES

SAMPLE ASSESSMENT MATERIALS

Teaching from 2017

This Qualifications Wales regulated qualification is not available to centres in England.

For teaching from 2017
For award from 2018

GCE AS AND A LEVEL DESIGN AND TECHNOLOGY

FASHION AND TEXTILES

SAMPLE ASSESSMENT MATERIALS

Contents

Candidate Name	Centre Number					Candidate Number				
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GCE AS DESIGN AND TECHNOLOGY

UNIT 1

Fashion and Textiles

SAMPLE ASSESSMENT MATERIALS

2 hours

ADDITIONAL MATERIALS

In addition to this examination paper, you will need a calculator.

INSTRUCTIONS FOR CANDIDATES

Answer ALL questions.

Write your name, centre number and candidate number in spaces at the top of this page.

Write your answers in the spaces provided in this booklet.

Use black ink or black ball-point pen.

Do not use pencil or gel pen.

Do not use correction fluid.

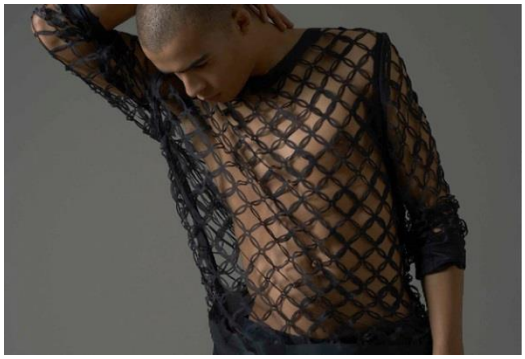
INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part question. You are advised to divide your time accordingly.

The total number of marks available is 80.

You are reminded of the need for good English and orderly, clear presentation in your answers. The quality of your written communication, including appropriate use of punctuation and grammar, will be assessed in your answer to question 5.

Q1. Advances in computer aided design and computer aided manufacturing (CAD/CAM) technology have given rise to alternative methods of designing and manufacturing fashion and textile products. The product shown below has been made using a laser cutter.



(a) Explain one advantage of using a laser cutter when designing and making textile products like the one shown. [2]

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(b) Describe the limitations associated with the use of a laser cutter when making textile products. [2]

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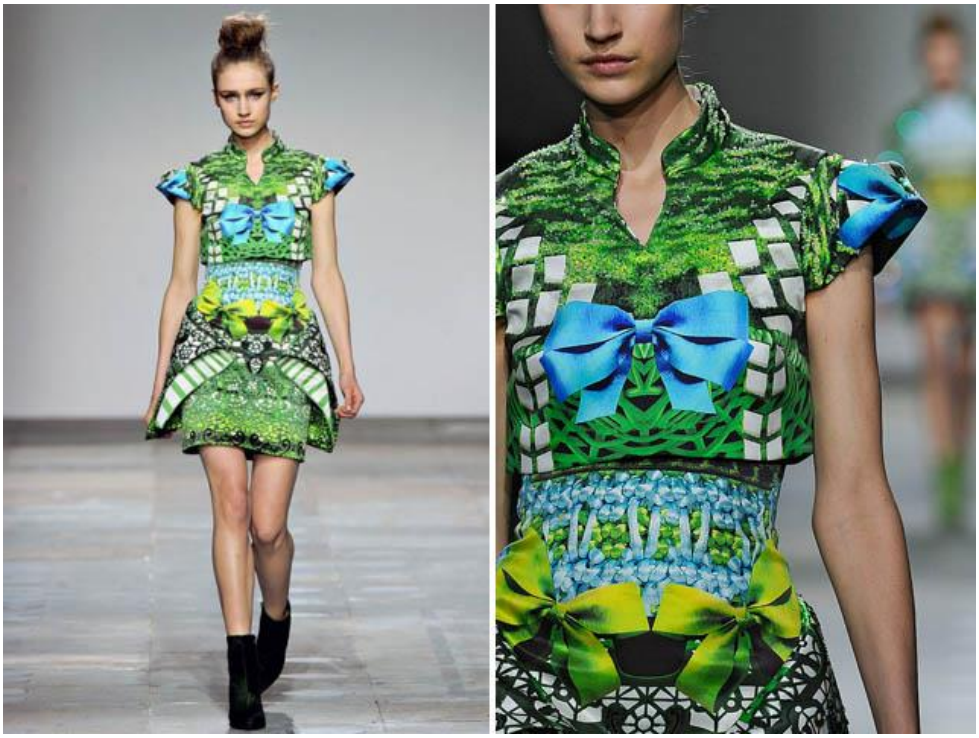
(c) The world of textile printing is rapidly changing. The dress below has been digitally printed.



Discuss the benefits of digital textile printing for the designer. [4]

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Q2. Manufacturers today strive to ensure that their products are safe in order to protect the consumer.

(a) Describe the purpose of a risk assessment that a manufacturer would carry out prior to manufacturing a new product. [2]

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(b) Describe in detail the safety requirements which need to be considered by the designer when designing a teddy bear like the one pictured below. [6]

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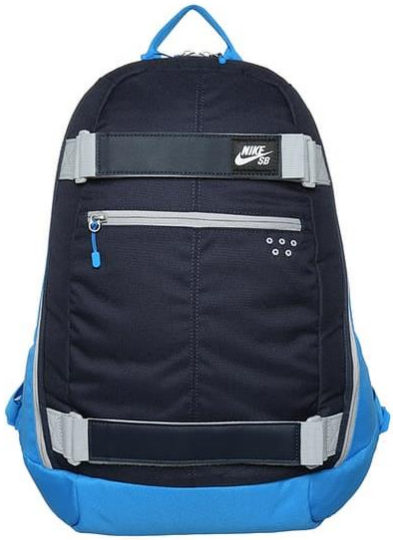
Q3. The rucksack shown below is made from a plain weave fabric using polyamide fibres.



(a) Explain the reasons why the plain weave polyamide fabric is suitable for a rucksack. [4]

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(b) Explain two ways the functionality of the bag could be improved. [4]

Explanation 1: .....

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Explanation 2: .....

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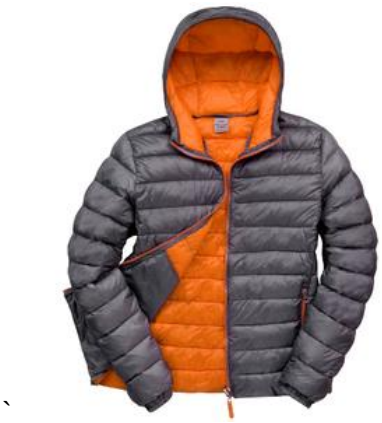
Q4. In the winter months fashion and textile products are designed to keep the wearer warm.

The jacket below is made from a quilted fabric which is a good insulator.



Evaluate how the construction of a quilted fabric contributes to the jacket's effectiveness at reducing heat loss. [8]

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Q5. Describe the work of Issey Miyake including his style and any outside influences that have affected his style of design. [8]

Marks will be awarded for the content of the answer and the quality of written communication.

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Q6. Design Brief.

Young men and women like to follow contemporary fashion trends.

You have been asked to design a winter garment or accessory made from 100% pure new wool for a young man or woman. The garment or accessory must have a suitable method of fastening.

Use the following pages to communicate your design ideas. You will need to illustrate the garment or accessory using exploded sketches of any style and technical details.

(a) Analyse the design brief and write four detailed and justified specification points for the design brief. [8]

Point 1: .....

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Justification: .....

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Point 2: .....

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Justification: .....

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Point 3: .....

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Justification: .....

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Point 4: .....

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Justification: .....

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In the boxes provided on pages 13 and 14, use sketches, labelling and notes to present one design idea.
Marks will be awarded for:

(b) Quality of communication in terms of annotated fashion illustrations, incorporating any technical or style details. [6]

(c) The use of textiles terminology in the design idea. [4]

(d) (i) The creativity and originality of ideas based on your winter garment or accessory. [6]

(ii) Use of notes and diagrams to explain the method of constructing the fastening and one other style detail. [8]

(e) In the box below use notes and diagrams to explain how the properties of the wool fibre make it a suitable fabric for the winter garment or accessory. [8]

For continuation only.

MARK SCHEME

Guidance for examiners

Positive marking

It should be remembered that learners are writing under examination conditions and credit should be given for what the learner writes, rather than adopting the approach of penalising him/her for any omissions. It should be possible for a very good response to achieve full marks and a very poor one to achieve zero marks. Marks should not be deducted for a less than perfect answer if it satisfies the criteria of the mark scheme.

For questions that are objective or points-based the mark scheme should be applied precisely. Marks should be awarded as indicated and no further subdivision made.

Banded mark schemes

For band marked questions mark schemes are in two parts, the indicative content and the assessment grid.

The indicative content suggests the range of issues which may be included in the learner's answers. It can be used to assess the quality of the learner's response. Indicative content is **not** intended to be exhaustive and learners **do not** have to include all the indicative content to reach the highest level of the mark scheme.

In order to reach the highest levels of the mark scheme a learner need not cover all of the points mentioned in the indicative content but must meet the requirements of the highest mark band. Where a response is not creditworthy, that it contains nothing of any significance to the mark scheme, or where no response has been provided, no marks should be awarded.

In Design and Technology, each question addresses one assessment objective: either AO3 or AO4. The assessment grid sub-divides the total mark to allocate for a question. These are shown in bands in the mark scheme. For each question, descriptors will indicate the different skills and qualities at the appropriate level.

Examiners should first read and place a tick in the learner's answer/s to indicate the evidence that is being assessed in that question; the mark scheme can then be applied. This is done as a two stage process.

Stage 1 – Deciding on the band

Beginning at the lowest band, examiners should look at the learner's answer and check whether it matches the descriptors for that band. If the descriptors at the lowest band are satisfied, examiners should move up to the next band and repeat this process for each band until the descriptors match the answer.

If an answer covers different aspects of different bands within the mark scheme, a 'best fit' approach should be adopted to decide on the band and then the learner's response should be used to decide on the mark within the band. For instance if a response is mainly in band 2 but with a limited amount of band 3 content, the answer would be placed in band 2, but the mark awarded would be close to the top of band 2 as a result of the band 3 content.

Examiners should not seek to mark learners down as a result of small omissions in minor areas of an answer.

Stage 2 – Deciding on the mark

During standardising (marking conference), detailed advice from the Principal Examiner on the qualities of each mark band will be given. Examiners will then receive examples of answers in each mark band that have been awarded a mark by the Principal Examiner. Examiners should mark the examples and compare their marks with those of the Principal Examiner.

When marking, examiners can use these examples to decide whether a learner's response is of a superior, inferior or comparable standard to the example. Examiners are reminded of the need to revisit the answer as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the response provided.

GCE AS Design and Technology (Fashion and Textiles)

MARK SCHEME

Question 1

		AO3	AO4	Mark
Advances in computer aided design and/or computer aided manufacturing (CAD/CAM) technology have given rise to alternative methods of designing and manufacturing fashion and textile products. The product shown below has been made using a laser cutter.				
(a)	Explain one advantage of using a laser cutter when designing and making textile products like the one shown.		✓	2
	*Answers that demonstrate an understanding of laser cutters should be awarded up to **2** marks based on:* Intricate and detailed designs can be cut into garment pieces/textile products which cannot be done by hand, which in turn offers more scope for design; materials can be engraved, a process not really possible before laser cutters; materials cut on the laser cutter do not fray, so edges do not necessarily need to be neatened; component parts such as buttons or bag handles can be engraved/cut to match designs on other parts of the product much more easily. No marks to be awarded for unqualified assertions, e.g. quicker, faster, easier etc. **Guidance to markers** *No answer or an incorrect answer* ***0 marks*** *A simple response for example:* laser cutters offer more opportunities to cut designs out of materials or engrave them which was not possible before**.** ***1 mark*** *A more developed response for example:* laser cutters can cut intricate designs out of materials which will not fray as the laser seals the edges; it can also engrave designs on the material which cannot be done by hand. ***2 Marks***			
(b)	Describe the limitations associated with the use of a laser cutter when making textile products.		✓	2
	*Answers that demonstrate an understanding of the limitations of laser cutters should be awarded up to **2** marks based on:* Only certain types of materials can be cut or engraved – some will burn or melt; shiny metallic materials cannot be used; the laser can leave a black edge on the materials; only flat materials which can be laid flat can be cut; limited to size depending on the size of the machine. **Guidance to markers** *No answer or an incorrect answer* ***0 marks*** *A basic response for example:* there is a limit to the type of materials that can be cut. ***1 mark*** *A developed response for example:* not all materials are suitable for use with the laser cutter as some materials such as PVC can burn or melt under the laser's beam. ***2 marks***			

(c)	Discuss the benefits of digital textile printing for the designer		✓	4

*Answers that demonstrate an understanding of digital textile printing should be awarded up to **4** marks based on:*

One of the biggest benefits digital printing provides is the reduction of downtime. Digital printers do not require lengthy setup /clean up time between patterns and can theoretically print 24 hours a day, 7 days a week, and 365 days per year. In addition to increased efficiency, digital printing also provides the elimination of screen cost in sampling and short run production. Printing without screens eliminates the registration problems and most importantly - allows for mass customization. Designers can make pattern and colour changes immediately and print a sample before engraving screens for the final run. On a digital production machine, the printer can produce as little as one repeat of several patterns using multiple colour ways, all in a few minutes.

Guidance to markers

No answer or an incorrect answer ***0 marks***

A basic response, limited understanding of the benefits of using a digital printer: One of the biggest benefits digital printing provides is the reduction of downtime. ***1 mark***

Some understanding with slightly more detail, a basic understanding of the benefits of using a digital printer: One of the biggest benefits digital printing provides is the reduction of downtime. This is due to the fact that lengthy setup and clean up between patterns is not required. ***2 marks***

A good response: a good understanding of the benefits of using a digital printer: One of the biggest benefits digital printing provides is the reduction of downtime. This is due to the fact that lengthy setup and clean up between patterns is not required. This means that in theory digital patterns can be printed 24 hours a day. ***3 marks***

A full and detailed response: a detailed and full understanding of the benefits of using a digital printer. One of the biggest benefits digital printing provides is the reduction of downtime. This is due to the fact that lengthy setup and clean up between patterns is not required. This means that in theory patterns can be printed 24 hours a day. In addition to increased efficiency, digital printing allows designers to make any pattern and colour changes immediately.

4 marks

	Total	**8**

Question 2

		AO3	AO4	Mark
(a)	Describe the purpose of a risk assessment that a manufacturer would carry out prior to manufacturing a new product.		✓	2
	*Answers that demonstrate an understanding of a risk assessment should be awarded up to **2** marks based on:* A risk assessment is a process assessing the type of hazard, the level of risk, who might be affected by the hazard, and a description of control measures taken to minimise the risk associated with using specific materials and manufacturing processes. **Guidance to markers** *No answer or an incorrect answer* ***0 marks*** *A basic response with limited understanding of the purpose of a risk assessment:* A risk assessment is a process to identify any possible hazards which may occur. ***1 mark*** *A developed response with good understanding of the meaning of a risk assessment.* A risk assessment is a process to identify any possible hazards which may occur and a description of control measures taken to minimise the risk. ***2 marks***			
(b)	Describe in detail the safety requirements which need to be considered by the designer when designing a teddy bear like the one pictured below.		✓	6
	*Answers that demonstrate an understanding of safety requirements considered when designing should be awarded up to **6** marks based on:* That the toy will withstand wear and tear: ***1 mark*** for example, small parts can't become detached and form a choking hazard such as the eyes and limbs of the teddy bear. ***2 marks*** That the toy is flame retardant: ***1 mark.*** The teddy bear needs to be designed from a flame-retardant material so that it would not readily ignite. ***2 marks*** Material choice: **1 mark** the teddy bear needs to be made from a good quality material so that no fibres can be pulled off by the child. ***2 marks*** Construction quality: ***1 mark*** Seams need to be of a high quality so that no stuffing can come out of the teddy bear and cause a choking hazard.***2 marks*** The CE mark: ***1 mark*** The teddy bear needs to carry the CE marking indicating that the teddy bear meets the requirements for Toy Safety. ***2 marks*** Lion mark logo: ***1 mark*** Meets the high safety standards set by the British Toy and Hobby Association (BTHA). ***2 marks*** **Guidance to markers** To obtain 6 marks 3 points need to be provided with good elaboration of each point. *No answer or an incorrect answer* ***0 marks*** *Brief description of a relevant safety point but little or no detail in the explanation of the safety requirements for the teddy bear.* ***1 - 2 marks*** *More detailed description of two safety points with further elaboration in the explanation of the safety requirements for the teddy bear.* ***3 - 4 marks*** *Clear and detailed description of three separate examples of relevant safety points with further elaboration in the explanation of each safety requirement for the teddy bear.* ***5 - 6 marks***			
		Total		**8**

Question 3

		AO3	AO4	Mark
(a)	Explain the reasons why the plain weave polyamide fabric is suitable for a rucksack.		✓	4

Answers that demonstrate an understanding of polyamide fabric should be awarded up to 4 marks based on:

Polyamide is very **strong** and **abrasion resistant** so will resist tearing and wear when subjected to friction. It is **lightweight** so will not make the rucksack heavy in use. It will resist waterborne stains as it is **non-absorbent**. It is non-absorbent so will **dry quickly**. It is **crease resistant** so the bag stays looking smart. It is **easily cleaned**.

The **plain weave** adds to the s**trength** and is **firm** so will hold its shape, preventing stretching when weights are carried in the rucksack.

Guidance to markers

No answer or an incorrect answer ***0 marks***

Little understanding, simplistic statements only, candidate typically concentrates on a narrow area of fibre qualities without reference to structure of the fabric or intended use. ***1 marks***

Some understanding, simplistic statements only, candidate typically concentrates on a narrow area of fibre qualities without reference to structure of the fabric or intended use. The response will tend to be descriptive. ***2 marks***

Candidate shows understanding of the contribution made by the polyamide fibre with some attempt to analyse the impact of the plain weave structure. Points may not relate the properties clearly to the fibre and fabric qualities and will lack detail. There may be minor confusion but most points will be accurate. ***3 marks***

Candidate shows detailed understanding of the contribution made by several aspects of the polyamide fibre content and plain weave structure. Information will be accurate and clearly related to the end use of the fabric. ***4 marks***

		AO3	AO4	Mark
(b)	Explain two ways the functionality of the bag could be improved.		✓	4

Accept any appropriate answers that improve the functionality of the bag.
Answers could be based on:
Strength
Size of the bag
Weight
Carrying handle
Sizes of specific features pockets etc.
The type of open and closing methods - zips Velcro etc.
Accept any appropriate answer that could be about specific items that could be carried / stored for example bottle carrier iPod holder etc.

Guidance to markers

No answer or an incorrect answer ***0 marks***

A basic response with limited understanding of the functions of the bag. ***1 mark***

The strength of the bag could be improved by double stitching all joints.

	A developed response with good understanding of the functions of the bag. ***2 marks*** The strength of the bag could be improved by double stitching all joints to ensure the bag will not split when fully loaded.	
	Total	**8**

Question 4

		AO3	AO4	Mark
	Evaluate how the construction of a quilted fabric contributes to the jacket's effectiveness at reducing heat loss.	✓		8
	Candidates are required to appraise and/or make judgements about how the quilted fabric helps the jacket reduce heat loss. Basic construction 2 layers of fabric. With a layer of wadding between them. There needs to be a thin layer of fabric next to the skin that pulls away moisture to keep the body dry [1]. This is usually wool, polyester or polypropylene [1]. The next layer is intended for warmth [1], and choosing some kind of down is the best way to insulate [1]. The down will trap pockets of warm air helping the insulation qualities and of course keeping the user warm [1]. The last layer is for wind proofing made of Gore-Tex or any other suitable breathable/waterproof material [1]. The outer layer performs two tasks retains the warmth under the jacket [1] and will act as a non-permeable layer stopping water from penetrating [1] The Gore-Tex or similar material will keep the user warm by retaining the person body temperature whilst allowing for moisture to pass through the material from the inside but not allowing water to penetrate from the outside. [1] **Guidance to markers** • *Little or no understanding* ***0 marks*** • *Basic appraisal and/or judgements of how quilted fabrics helps the jacket reduce heat loss-* ***1-2 marks*** • *Satisfactory appraisal and/or judgements of how quilted fabrics helps the jacket reduce heat loss-* ***3-4 marks*** • *Good appraisal and/or judgements of how quilted fabrics helps the jacket reduce heat loss-* ***5-6 marks*** • *Very good appraisal and/or judgements of how quilted fabrics helps the jacket reduce heat loss-* ***7-8 marks***			
		Total		**8**

Question 5		**AO3**	**AO4**	**Mark**
Describe the work of Issey Miyake describing his style including any outside influences that have affected his style of design.			✓	**8**

*Answers that demonstrate an understanding of the style of Issey Miyake should be awarded up to **8** marks based on:*

Issey Miyake

- Miyake's first encounter with design was in his home town of Hiroshima in Japan. The Japanese culture has had a huge influence on his design thinking.
- Miyake has travelled a great deal and this has influenced his work. He witnessed the Paris riots, an event that inspired a determination to create clothing for a wider range of people.
- Miyake's creative process has been based upon the concept of “one piece of cloth”. He explores the fundamental relationship between the body and the cloth that covers it. The work of Miyake is deeply rooted in and develops from his original belief that a garment starts from a piece of cloth by which to wrap the body. A-POC.
- He has been responsible for bringing traditional methods and techniques back to life, such as dyeing and weaving.
- He uses computers to incorporate a variety of jacquard patterns and textures into his work.
- In 1981 he launched the brand plantation which offered beautifully designed practical modern solutions without losing the essence of handicrafts. The brand which uses mostly natural materials features simple and comfortably loose designs and remains popular today.
- Miyake believes in creating clothing that addresses the demands of the times by combining traditional techniques from Japan and elsewhere with cutting edge technologies.
- Experimentation with pleats. This was inspired by the ballet. He created pleated clothing that would move using a new lightweight knitted material and introducing a technique called “garment pleating”.
- He used an oversized piece of cloth which was cut and sewn in the shape of the desired garment and then sandwiched between two layers of washi paper and fed into a heat press. The pleats remained in the fabric's memory and never had to be re-pleated.
- Such experimentation brought about “Pleats Please”.
- “Pleats please” offered clothing that was easy to wear, care for and to travel with.
- Ten different garments make up the 132 5 collection; the clothes lay flat and deflated, folded into beautiful patterns and stamped with metallic foils. If you tug at the corner of one of the shapes, the garment unfolds, reveals itself, and you can see how it takes on the outline of a skirt. There is no correlation between the flat shape and its 3D incarnation – it's like pulling something from a magician's hat. The name, 132 5, is apparently a play on this. It is derived from the process of one piece of cloth being given a 3D form, then being folded into a 2D plane, then being cut and transformed into a new piece of clothing.
- Making things that have never been made before and making new realities. Miyake continues to adopt this principal in his creation of newer ever more advanced designs for the 21st Century.

Guidance to markers
Answers must describe his style and the elements that have influenced his design thinking.
Both parts of the question must be answered for full marks.

No answer or incorrect, no evidence of understanding. ***0 marks***

Level 1 ***1-2 marks***
- Candidate has a simplistic knowledge of the issues associated with the question.
- Limited use of terminology and technical language.
- The candidate has limited knowledge in relation to styling and /or outside influences.
- The candidate will express basic ideas clearly, if not always fluently. Answers may deviate from the question or not be relevant.
- Grammar, punctuation and spelling may be weak impacting on effective communication.

Level 2 ***3-4 marks***
- The candidate has a basic understanding of the issues associated with the question.
- Satisfactory use of terminology and technical language.
- The candidate has some general knowledge of the style including any outside influences.
- The candidate will express straightforward ideas clearly, if not always fluently. Answers may deviate from the question or be weakly presented.
- There may be some errors of grammar, punctuation and spelling but is still able to communicate the issues.

Level 3 ***5-6 marks***
- The candidate demonstrates a clear understanding of the issues associated with the question.
- Good use of terminology and technical language.
- The candidate has demonstrated knowledge of the style including any outside influences.
- The candidate will express moderately complex ideas clearly and fluently, through well linked sentences and paragraphs. Answers will be generally relevant and structured.
- There may be occasional errors of grammar, punctuation and spelling.

Level 4 ***7-8 marks***
- 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 associated issues.
- Very good use of terminology and technical language.
- The candidate has developed a detailed knowledge of the style including any outside influences.
- The candidate will express complex ideas extremely fluently. Sentences and paragraphs will follow on from each other smoothly and logically. Answers will be consistently relevant and structured.
- There will be few, if any, errors of grammar, punctuation and spelling.

Total	**8**

Question 6

		AO3	AO4	Mark
(a)	Analyse the design brief and write four detailed and justified specification points for the design brief.	✓		8
	• Be suitable for a young man or woman that reflects contemporary fashion trends. • Be suitable for the winter season changes in weather condition should be mentioned. • Be inspired by the theme and colours of winter. • Include specific named style details such as collars, cuffs etc. • Made from 100% pure new wool. • Be creative and original and reflect the styles suitable for a young man or woman. **Guidance to markers** *No answer or an incorrect answer* ***0 marks*** **1 mark for each relevant specification point and 1 mark for justification** *(Accept any relevant specification point that is not listed above)*			
(b)	Quality of communication in terms of annotated fashion illustrations, incorporating any technical or style details.		✓	6
	Candidates need to illustrate all aspects of their design idea. They will need to zoom in on style and technical details. Details need to be labelled clearly with annotation. **Guidance to markers** No answer or the answer cannot be understood, no annotation**.** ***0 mark*** Graphic skills are adequate, understandable, limited annotation of important style details**.** An attempt to show some details with some reasonable ideas for the overall style. ***1 - 2 marks*** Good graphic details and image, appropriate styling, understandable, good annotation of important style details**.** A good attempt to show real details and views of their idea; some good ideas for the overall style using exploded sketches. ***3 - 4 marks*** Excellent graphic details and image, highly appropriate styling, with correct annotation of important style details. Excellent sketches of their chosen idea; good ideas for the overall style; shows highly imaginative styling with clear use of exploded sketches. ***5 - 6 marks***			

(c)	The use of textiles terminology in the design idea.		✓	4
	Guidance to markers *No answer or an incorrect answer* ***0 marks*** Limited use of textiles terminology in the design idea. ***1 mark*** Some appropriate use of textiles terminology to support their design idea. ***2 marks*** Good and appropriate use of terminology to support their design idea. ***3 marks*** Excellent and appropriate terminology to support their design idea. ***4 marks***			
(d)	(i) The creativity and originality of ideas based on your winter garment or accessory.		✓	6
	The following should be considered: Contemporary, creative, original and imaginative design for an item of fashionable clothing, balanced composition/effective use of space, effective proportions. Design features include the use of appropriate style details. Appropriate for intended use. Will the design work? **Guidance to markers** *No answer or an incorrect answer* ***0 marks*** Unimaginative simple design with some thought given to intended use though lack of detail. Relates to some areas of design brief/specification but may not be clear, overall balance weak. May be no style details. ***1 mark*** Simple design related to many aspects of design brief with some detail about the item of fashionable clothing. Design might lack imagination. There may be some lack of clarity about style details, little detail shown. An existing design may have been replicated. ***2 marks*** Fairly good design that relates to most aspects of design brief/specification with some detail and thoughtful or imaginative use of two or more style details which are appropriate for an item of fashionable clothing. Little evidence that an existing design has been replicated. ***3 marks*** Good design that clearly relates to nearly all aspects of design brief/specification with clear detail and exciting use of two or more style details. Techniques are appropriate and add interest to the item of fashionable clothing. Little evidence that an existing design has been replicated with one or two creative individual ideas evident. ***4 marks*** Imaginative design and creative detailed item of fashionable clothing with a variety of effective style details that addresses both the brief and specification. Unique ideas that could prove to be a popular design. ***5 marks*** Very original, innovative, imaginative and highly creative detailed item of fashionable clothing with a variety of effective style details which addresses both the brief and specification. The idea is very unique and could prove to be a popular design. ***6 marks***			

(d)	(ii) Use of notes and diagrams to explain the method of constructing the fastening and one other style detail.		✓	8
	Candidates should provide notes and diagrams for the chosen method of fastening the coat and one other style detail. **Example of a fastening: Button and buttonhole.** • Set the stitch selector on the sewing machine to buttonhole stitch or satin stitch. • Put a buttonhole foot onto the machine if it has one. • Place the button into the foot, push the holder closed on the buttonhole foot. This will tell the machine the size of the button and how long to make the buttonhole. • Measure the size of the button and mark the fabric with tailors chalk if the machine does not have the above facility. • Mark the placement of the buttonhole with tailors chalk. • Place the buttonhole / pressure foot at the end of the buttonhole marking and start sewing. • Use a seam ripper or sharp scissor to open the area between the sewn edges of the buttonhole. • Mark the position of the button on the fabric and sew in place by hand. **Guidance to markers** The answer must include: Constructing the fastening. ***4 marks*** One other style detail. ***4 marks*** For each appropriate answer, marks will be awarded for: (i) 1 mark for at least three appropriate comments/notes written. 2 marks for at least four or more appropriate comments/notes written. (ii) *0 marks for an inappropriate or no diagram.* *1 mark for a clear diagram.* *2 marks for a detailed diagram.*			
(e)	Use notes and diagrams to explain how the properties of the wool fibre make it a suitable fabric for the winter garment or accessory.			**8**
	Candidates should demonstrate knowledge and understanding and are awarded up to 8 marks based on: The surface of the wool fibre is water repellent; the natural grease on the wool fibre repels surface water, this makes it suitable for a coat as it will not absorb water (rain) and the wearer remains dry. Some water vapour is allowed to pass through. When the temperature raises the scales on the surface of the wool fibre (diagrams could be used to exemplify) can move apart and absorb some moisture. When the fibre dries and cools down the scales reform. This makes wool fibre more elastic and gives it a smooth appearance as it has reshaping qualities. The natural crimp in wool fibre (curvy shape) along with the scales trap air which makes wool a good insulator. The length of the staple fibres twisted together also affects the insulating qualities of the wool.			

	Guidance to markers No answer or incorrect, no evidence of understanding. ***0 marks*** A simple response: very limited level of understanding, no reasoning evident. ***1 mark*** A basic understanding, basic attempt at explaining the properties of wool. ***2 marks*** A reasonable understanding: some knowledge of properties, an attempt at reasoning. ***3 marks*** A clear understanding of the properties of wool with good reasoning. ***4 marks*** A clear understanding and clear rationale of the properties of wool, diagrams have been used to illustrate answer. ***5 marks*** **Diagrams** Diagrams of the wool fibre need to be drawn by the candidate to obtain higher marks. No diagrams. ***0 marks*** Diagram of the wool fibre evident but lacks any real detail to support the answer. ***1 mark*** Diagrams of the wool fibre evident but some details are missing to support understanding of the properties. ***2 marks*** Diagrams show clear and detailed understanding of the properties of wool. ***3 marks***	
	Total	**40**

Candidate Name	Centre Number					Candidate Number				
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GCE A LEVEL DESIGN AND TECHNOLOGY

UNIT 3

Fashion and Textiles

SAMPLE ASSESSMENT MATERIALS

2 hours 30 minutes

ADDITIONAL MATERIALS

In addition to this examination paper, you will need a calculator.

INSTRUCTIONS FOR CANDIDATES

Answer ALL questions.

Write your name, centre number and candidate number in spaces at the top of this page.

Write your answers in the spaces provided in this booklet.

Use black ink or black ball-point pen.

Do not use pencil or gel pen.

Do not use correction fluid.

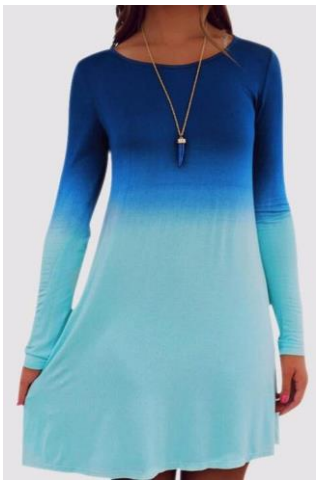
INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part question. You are advised to divide your time accordingly.

The total number of marks available is 100.

You are reminded of the need for good English and orderly, clear presentation in your answers. The quality of your written communication, including appropriate use of punctuation and grammar, will be assessed in your answer to question 10.

Q1. The dress shown below has been dip dyed by a student in a textiles classroom.



(a) Describe two potential hazards that the student could face when dyeing textile materials. [2]

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(b) Describe the safety precautions a textile student could use to avoid some of the potential hazards when dyeing textile materials. [2]

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(c) Fashion and textile manufacturers are required by law to regularly carry out a risk assessment of the work place.

Explain what this means and how it protects the workforce. [4]

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Q2. The registered trademark shown below belongs to an internationally renowned textile accessories manufacturer and is seen in different formats on all its products.

(a) Explain why manufacturers use registered trademarks on their products. [2]

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(b) A fashion designer has applied for a patent.

Explain what this means and how it will benefit the fashion designer. [6]

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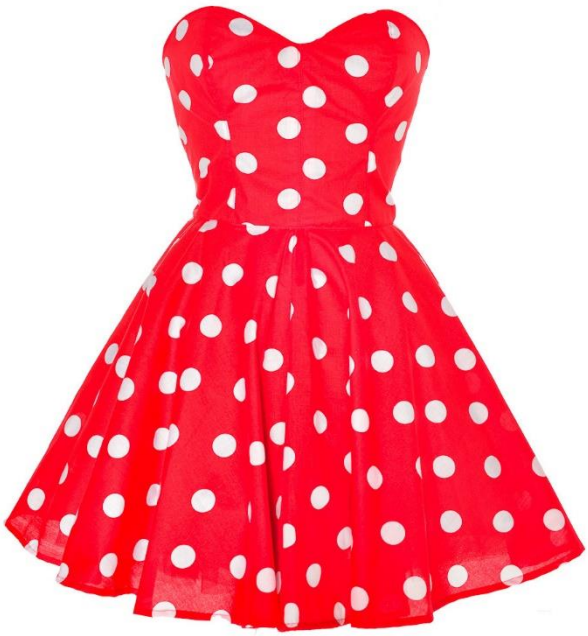
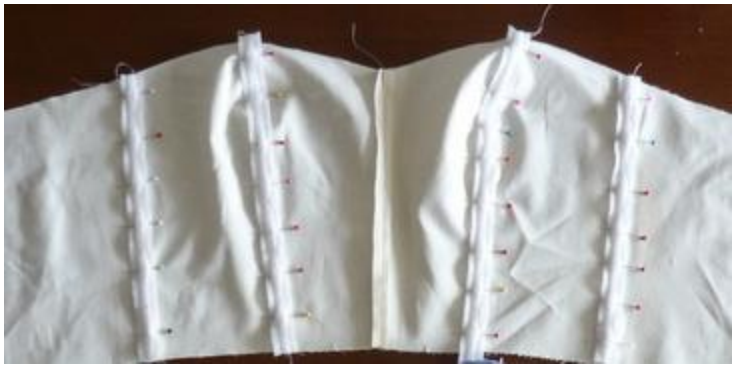
Q3. The picture below shows a 1950s inspired strapless party dress.



(a) As the party dress is strapless it is essential that the bodice is supported and fitted to the body. The method of doing this is shown in the picture below.



Describe how the components and method of construction used in this process will ensure that the dress functions as intended. [4]

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(b) Describe a method of strengthening the red spotty material used on the bodice of the dress. [2]

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(c) The party dress was inspired by the styles of the 1950s.

Explain how historical influences play a major role in the development of contemporary fashion. [6]

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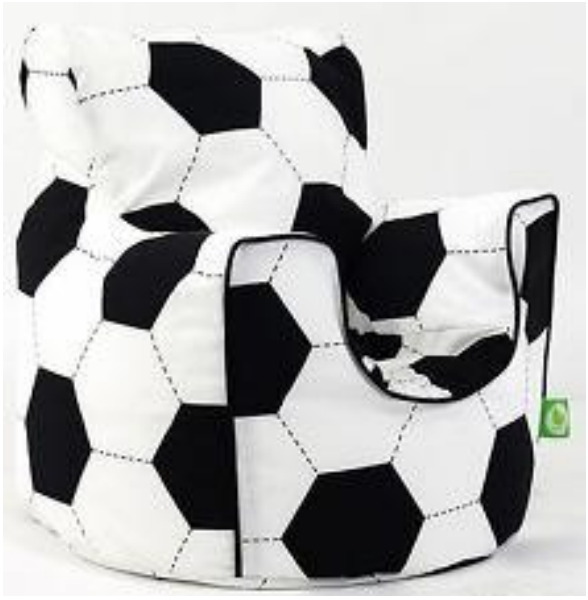
Q4. The bean bag armchair shown below has removable covers with a zip fastener at the base. The inner bag is filled with polystyrene beads.



(a) State the name of a regulation the bean bag arm chair must comply with, and describe how it must comply with that regulation. [2]

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(b) Describe a method of comparing flammability rates of different textile materials that could be used for the bean bag armchair. [4]

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(c) The bean bag armchair is mass produced.

Describe the quality control checks it would go through before going on sale.
[6]

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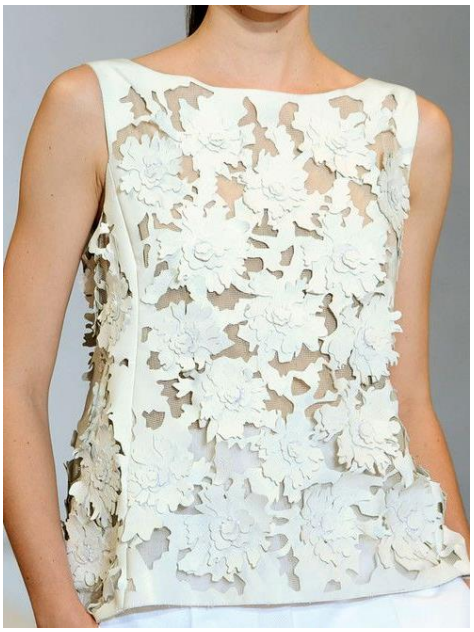
Q5. Advances in computer aided design / computer aided manufacture (CAD/CAM) has given fashion designers opportunities to explore alternative methods of designing and manufacturing fashion and textile products.

(a) Explain how the application of CAM has impacted on the manufacturing industry for mass produced fashionable clothing. [4]



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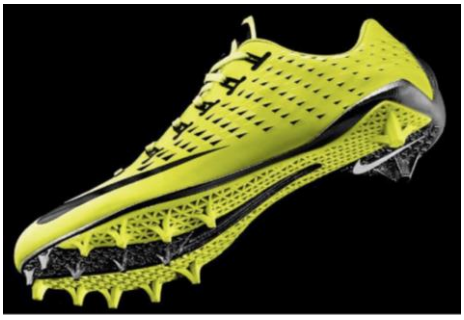
(b) Rapid prototyping (3D Printing) and performance modelling are increasingly used in the development of fashion and textiles products.

The sports shoe shown below has been 3D printed.



Explain how 3D printing brings additional benefits to the fashion designer when developing new products. [4]

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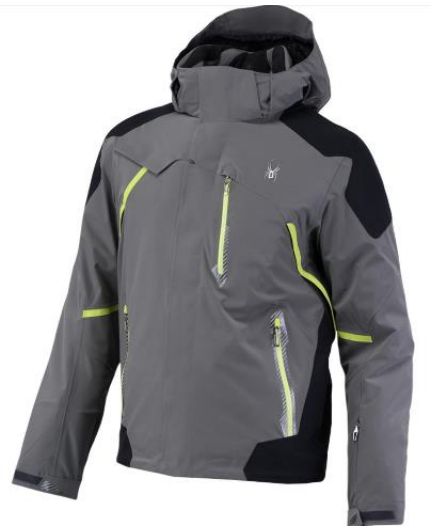
Q6. The Gore-Tex material used to make the ski jacket shown below includes a hydrophilic membrane.



(a) Evaluate the benefits of incorporating a hydrophilic membrane in the ski jacket. [4]

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(b) The ski jacket has an integrated global positioning system (GPS).

Evaluate the benefits of incorporating a GPS in the ski jacket. [4]

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Q7. Textile fibres can be grouped according to their origin. All fibres are made up of groups of molecules called polymers.

(a) Explain the differences between natural polymers and synthetic polymers. [4]

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(b) Name one aramid fibre and describe its main properties. [3]

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(c) Cotton clothing is considered cool to wear in hot weather because of the structure and properties of the raw cotton fibre.

Using notes and diagrams, explain how the structure and properties of the raw cotton fibre makes cotton clothing cool to wear. [5]

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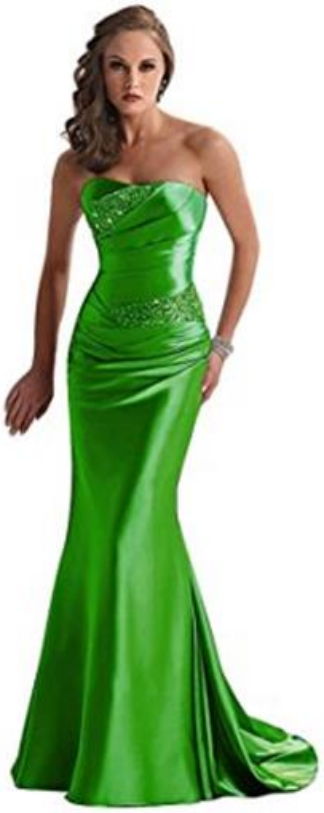
Q8. The designer evening dress shown below has been made from a satin weave polyester material which has been cut out on the bias.



(a) Explain what is meant by cutting the material on the 'bias' and give the reason why a fashion designer would choose to do this. [4]

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(b) Discuss the use of a satin weave polyester material for the dress shown above. [8]

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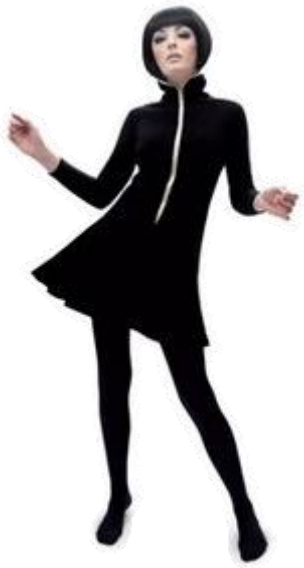
Q9. The mini dress shown below, known as the banana split dress, was designed by Mary Quant in the 1960s and is considered an iconic design.



Discuss how iconic designs in fashion have a lasting impact on contemporary fashion. Include examples in your answer. [8]

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Q10. Analyse the impact that the development of a 'green' consciousness from consumers is having on the choices and decisions fashion designers make when developing new clothing ranges. [12]

Marks will be awarded for the content of the answer and the quality of written communication.

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For continuation only.

MARK SCHEME

Guidance for examiners

Positive marking

It should be remembered that learners are writing under examination conditions and credit should be given for what the learner writes, rather than adopting the approach of penalising him/her for any omissions. It should be possible for a very good response to achieve full marks and a very poor one to achieve zero marks. Marks should not be deducted for a less than perfect answer if it satisfies the criteria of the mark scheme.

For questions that are objective or points-based the mark scheme should be applied precisely. Marks should be awarded as indicated and no further subdivision made.

Banded mark schemes

For band marked questions mark schemes are in two parts, the indicative content and the assessment grid.

The indicative content suggests the range of issues which may be included in the learner's answers. It can be used to assess the quality of the learner's response. Indicative content is **not** intended to be exhaustive and learners **do not** have to include all the indicative content to reach the highest level of the mark scheme.

In order to reach the highest levels of the mark scheme a learner need not cover all of the points mentioned in the indicative content but must meet the requirements of the highest mark band. Where a response is not creditworthy, that it contains nothing of any significance to the mark scheme, or where no response has been provided, no marks should be awarded.

In Design and Technology, each question addresses one assessment objective: either AO3 or AO4. The assessment grid sub-divides the total mark to allocate for a question. These are shown in bands in the mark scheme. For each question, descriptors will indicate the different skills and qualities at the appropriate level.

Examiners should first read and place a tick in the learner's answer/s to indicate the evidence that is being assessed in that question; the mark scheme can then be applied. This is done as a two stage process.

Stage 1 – Deciding on the band

Beginning at the lowest band, examiners should look at the learner's answer and check whether it matches the descriptors for that band. If the descriptors at the lowest band are satisfied, examiners should move up to the next band and repeat this process for each band until the descriptors match the answer.

If an answer covers different aspects of different bands within the mark scheme, a 'best fit' approach should be adopted to decide on the band and then the learner's response should be used to decide on the mark within the band. For instance if a response is mainly in band 2 but with a limited amount of band 3 content, the answer would be placed in band 2, but the mark awarded would be close to the top of band 2 as a result of the band 3 content.

Examiners should not seek to mark learners down as a result of small omissions in minor areas of an answer.

Stage 2 – Deciding on the mark

During standardising (marking conference), detailed advice from the Principal Examiner on the qualities of each mark band will be given. Examiners will then receive examples of answers in each mark band that have been awarded a mark by the Principal Examiner. Examiners should mark the examples and compare their marks with those of the Principal Examiner.

When marking, examiners can use these examples to decide whether a learner's response is of a superior, inferior or comparable standard to the example. Examiners are reminded of the need to revisit the answer as they apply the mark scheme in order to confirm that the band and the mark allocated is appropriate to the response provided.

GCE A Level Design and Technology (Fashion & Textiles)

MARK SCHEME

Question 1

		AO3	AO4	Mark
(a)	Describe two potential hazards that the student could face when dyeing textile materials.		✓	2
	*Answers that demonstrate an understanding of the hazards of dyeing materials should be awarded up to **2** marks based on:* Use of chemicals; harmful to health - allergic reactions; uncontrolled exposure to hazardous dyestuffs; inhalation of chemicals in powder dyes; splashing of dye solution – protection of eyes; liquids in dye bath – spillages. **Guidance to markers** *Incorrect / no answer* ***0 marks*** *Brief description of a hazard for example:* Chemical dyes can cause skin reactions or breathing difficulties. ***1 mark*** *More detailed explanation of two potential hazards for example:* Chemical dyes can cause skin reactions in some people if your skin is exposed or breathing difficulties if fumes are inhaled. ***2 marks***			
(b)	Describe the safety precautions a textile student could use to avoid some of the potential hazards when dyeing textile materials.		✓	2
	*Answers that demonstrate an understanding related to safety when dyeing materials should be awarded up to **2** marks based on:* Use of protective clothing including goggles, aprons, and gloves to eliminate some risks; use of natural dyes; storage of dye solution in a safe environment – not left exposed; control over mixing dyes – follow instructions. **Guidance to markers** *Incorrect/no answer* ***0 marks*** *Brief description with some understanding of safety issues for example*: Wear safety goggles to protect your eyes from splashes. ***1 mark*** *A more detailed description, with clear understanding of safety issues for example:* Protective clothing should be used such as wearing gloves to protect skin/hands and goggles to protect the eyes from chemical splashes. ***2 marks***			

(c)	Fashion and textile manufacturers are required by law to regularly carry out a risk assessment of the work place. Explain what this means and how it protects the workforce.		✓	4

*Answers that demonstrate an understanding of risk assessments should be awarded up to **4** marks based on:*

Under the Health and Safety at Work Act 1974 it is a legal requirement for all manufacturers to carry out a risk assessment as part of the Quality Management System. It is the manufacturer's responsibility to carry out an assessment of all the potential risks/hazards within a factory and on the production line – layout of work place, environment of the workplace, use and storage of tools and equipment, use of machinery, use and storage of chemicals. Once potential hazards have been identified controls (systems and procedures) need to be put in place to eliminate, reduce and control the risk and ultimately to protect the workforce. A hazard could be a source of potential harm/danger or a situation with potential for harm/danger. The consequences of a hazard must be identified i.e. the potential accident. This ensures the well-being of the workforce; assurance and peace of mind for the workforce.

Guidance to markers

Incorrect/no answer ***0 marks***

Brief description, very little understanding for example:

Manufacturers have to identify any risks associated with their factory or new production lines. ***1 mark***

Some detail with some understanding of risk assessment and how it protects the workforce for example:

When setting up a production line manufacturers have a responsibility to the workforce to identify any risks associated with their factory that could cause harm to the workers. ***2 marks***

A more detailed explanation with clear understanding of risk assessment and how it protects the workforce for example:

When setting up a new factory or production line manufacturers have a responsibility to their workforce to identify any risks associated with their factory that could cause harm to the workers. Once a risk is identified controls need to be put in place. ***3 marks***

Fully detailed explanation with clear understanding of risk assessment and how it protects the workforce for example:

When setting up a new factory or production line manufacturers have a responsibility to their workforce to identify any risks associated with their factory that could cause harm to the workers. Once a risk is identified controls need to be put in place to ensure that the potential for accident/harm to workers is avoided. The workforce is reassured. ***4 marks***

	Total	**8**

Question 2

		AO3	AO4	Mark
(a)	Explain why manufacturers use registered trademarks on their products.		✓	2
	*Answers that demonstrate an understanding of trade marks should be awarded up to **2** marks based on:* Trademarks distinguish one manufacturers products from other traders; trademarks can be used for marketing purposes so that products are instantly recognisable; it's a valuable asset for marketing goods; manufacturers can take legal action against those who use their trademark illegally; it protects your products. **Guidance to markers** *Incorrect / no answer* ***0 marks*** *Brief description, a simple fact for example*: Trademarks are used so that customers can easily recognise certain products. ***1 mark*** *More detailed description with understanding for example:* Trademarks are used by manufacturers so that their goods are easily recognised by potential customers; this in effect helps with marketing their merchandise/products. ***2 marks***			
(b)	A fashion designer has applied for a patent. Explain what this means and how it will benefit the fashion designer.		✓	6
	*Answers that demonstrate an understanding of patents should be awarded up to **6** marks based on:* When a designer develops a new or inventive process or product a patent can be applied for provided the 'new' process or product has not been publically revealed previously in any format (it must be kept a secret until the patent is granted); patents make it unlawful for someone else to use the 'invention' without your permission but this only applies in the country the patent has been granted. The designer who holds the patent has exclusive rights over its use but can sell or licence it out. If the rights are held in the UK then protection is only guaranteed in the UK. Further applications are needed in other countries to protect your rights in those countries. Patents are used to protect the designer's ideas and inventions. **Guidance to markers** *Incorrect/no answer* ***0 marks*** *Brief description of term with a basic understanding of the benefits to designers.* ***1 - 2 marks*** *More detailed description of term, with some detail related to the benefits to designers.* ***3 - 4 marks*** *Detailed understanding of the term, fully explained and elaborated with benefits to the designer fully explained.* ***5 - 6 marks***			
		Total		**8**

Question 3

		AO3	AO4	Mark
(a)	Describe how the components and method of construction used in this process will ensure that the dress functions as intended.		✓	4

*Answers that demonstrate an understanding of the structure in a boned bodice should be awarded up to **4** marks based on:*

- Seams, usually princess line form the foundation for the process. The seam will be close to the body to provide shape.
- Bias binding (accept other trims) are stitched over the seams to form a channel – maintaining the curved shapes.
- Boning – either metal/plastic – cut to length – is inserted into the bias binding channel – this will give structure.
- Boning needs to be inserted correctly to mould with the body's natural curves.
- This forms the structure and provided the 'fit' on the bodice is quite tight the bodice will stay upright and function as intended.

Guidance to markers

Incorrect / no answer ***0 marks***

Brief description, very little understanding for example:
Boning is inserted under the seams of the bodice. ***1 mark***

Some detail with some understanding of the process and how it functions for example:
Bias binding is stitched along the inside seams and boning inserted under the binding to hold the shape of the dress. ***2 marks***

A more detailed explanation with clear understanding of the process and how it functions for example:
Bias binding is stitched along the inside princess line seams, following the curves; this forms a channel into which the boning is inserted. This holds the shape and gives structure to the bodice. ***3 marks***

Fully detailed explanation with clear understanding of the process and how it functions, clear understanding for example:
Bias binding is stitched along the inner curves of the princess line seams; this forms a channel into which the boning is inserted. The boning is cut to size and has to be inserted correctly to follow the natural curves of the female body shape. This holds the shape of the dress and gives structure to the bodice ensuring it functions as intended. ***4 marks***

(b)	Describe a method of strengthening the red spotty material used on the bodice of the dress.		✓	2

*Answers that demonstrate an understanding of strengthening materials in garment construction should be awarded up to **2** marks based on:*
Reinforcing the red spot material with an interlining (interfacing); interlining can be ironed on to the back of the material to strengthen provided a firm weight is used; interlining can be cut to the template shapes and stitched onto the individual pieces to give support.

Guidance to markers

Incorrect/no answer ***0 marks***

A basic method, lacks detail for example:
Use a fusible interfacing on the material. ***1 mark***

A fully explained method, with detail for example:
Reinforce the material by using a strong fusible interfacing which can be ironed onto the back of the material which will add strength. ***2 marks***

(c)	The party dress was inspired by the styles of the 1950s. Explain how historical influences play a major role in the development of contemporary fashion.		✓	6

*Answers that demonstrate an understanding of how historical influences play a role in the development of contemporary fashion ideas should be awarded up to **6** marks based on*

Designers tend to refer to historical fashion trends for various reasons which impact on contemporary trends:

- To source ideas and gain inspiration.
- Ideas could come from shape and style of garments/style details.
- Pattern cutting techniques.
- Details of embellishments on clothing.
- Prints and pattern on textiles – styles associated with particular designers linked to art movements or specific periods in history. Classic 60s mini dress based on Mondrian painting.
- Popular movements in fashion history – reinvention of ideas.
- Materials used historically and why.
- The concept that nothing is new in the fashion industry it is a reinvention with a modern twist.
- Fashions in the 50s, 60s and 70s continue to influence contemporary clothing for example: recent reinvention of the maxi dress; ponchos made a comeback in recent years originally 60s early 70s.

Candidates might exemplify their commentary for example:

- Reproduction of period printed materials for textile products for example William Morris style prints; small flowery Liberty type prints used by Cath Kidston; Orla Kiely influenced by 60s style prints.
- Reinvention of classic garments for example, Vivienne Westwood famously reinvented the corset, this influence seen in the red spotty dress.
- Other designers also studied tailoring methods for example Alexander McQueen but giving a modern twist.
- The silhouette of the 1950s is as popular today as originally – accentuates a 'nipped in' slim waistline.

Accept other reasonable, factually correct suggestions offered by candidates.

Guidance to markers

Incorrect/no answer ***0 marks***

Brief description of historical influences with limited knowledge of its relationship to contemporary fashion. ***1 - 2 marks***

More detailed description of historical influences with more detailed knowledge of its relationship to contemporary fashion ***3 - 4 marks***

Detailed understanding of the historical influences with very detailed knowledge of its relationship to contemporary fashion ***5 - 6 marks***

Total	**12**

Question 4

		AO3	AO4	Mark
(a)	State the name of a regulation the bean bag arm chair must comply with, and describe how it must comply with that regulation.		✓	2
	Answers that demonstrate an understanding of fire safety regulations related to soft furnishings should be awarded up to 2 marks based on: Act: The Furniture and Furnishings (Fire Safety) Regulations 1988; States: that all fabrics and padding used to make for example pillows, settees, cushions, padding materials, and loose furnishings such as those on bean bag arm chairs must meet certain conditions. **Guidance to markers** *Brief description, very little detail for example*: The Furniture and Furnishings (Fire Safety) Regulations 1988. ***1 mark*** The materials must be resistant to smouldering from cigarette ignition. ***1 mark***			

(b)	Describe a method of comparing flammability rates of different textile materials that could be used for the bean bag armchair.		✓	4

Answers that demonstrate an understanding of comparing flammability rates should be awarded up to 4 marks based on

- Cut equal sized pieces of materials to be tested;
- Erect equipment for testing – clamp stand, fireproof base, taper
- Clamp each piece to be tested to stand, use lit taper and expose material to flame - same amount of time for each test;
- Observe reaction, timing is critical; ensure identical environment for all materials tests;
- Compare results.

Guidance to markers

Incorrect / no answer ***0 marks***

Brief description, limited understanding for example:
Set fire to the samples of material to be tested. ***1 mark***

Some detail with some understanding of the testing process for example:
Time how long each piece of material takes to burn and compare the results. ***2 marks***

A more detailed explanation with clear understanding of the testing process for example:
Cut samples of materials all the same size, clamp each piece to a stand and set alight. Time how long each piece takes to catch fire. ***3 marks***

Fully detailed explanation with clear understanding of the testing process and equipment needed with clear understanding for example:
Cut samples of materials all the same size, clamp each piece to a stand and set alight. Time how long each piece takes to catch fire or resist the flame. Identical conditions needed for each piece of materials for an accurate comparison. ***4 marks***

(c)	The bean bag armchair is mass produced. Describe the quality control checks it would go through before going on sale.		✓	6

*Answers that demonstrate an understanding of quality control checks in manufacturing should be awarded up to **6** marks based on:*

- Quality of materials/components to be used;
- Materials tested for suitability – strength, durability, flammability, stain resistance
- Accuracy in the cutting process – all pieces fit for purpose;
- Machinery set up correctly;
- Process used as per manufacturing specification- seam tolerances, construction processes, thread type etc.;
- Seam quality – straight , no puckered seams;
- Labelling is accurate – care label, safety labelling;
- Accuracy of processes throughout manufacture;
- Final dimensions are all within tolerances;
- Zipper inserted correctly and in good working order;
- Polystyrene beads in inner sack contained as required;
- Final inspection.

Accept technically correct quality checks that are not listed above. Change of print and colour keeps product 'fresh'.

Guidance to markers

• Incorrect/no answer	0
• Candidate has simplistic knowledge. • Limited use of terminology and technical language. • Brief description of a few basic quality control checks – limited understanding.	1-2
• The candidate has some understanding of the issues associated with the question. • Good use of terminology and technical language. • More detailed description of some appropriate quality control checks; reasonably understanding.	3-4
• The candidate demonstrates a clear understanding of the issues associated with the question. • Very good use of terminology and technical language. • Detailed and clear understanding of a range of appropriate quality control checks.	5-6

Total	**12**

Question 5

		AO3	AO4	Mark
(a)	Explain how the application of CAM has impacted on the manufacturing industry for mass produced fashionable clothing.		✓	4

*Answers that demonstrate an understanding of CAM should be awarded up to **4** marks based on:*

- Multi head embroidery machines (CAM) are used in high volume fashion garment production which prior to CAM was not possible on a large scale production.
- Laser cutters (CAM) can cut or engrave textile material; this process/technique cannot be done in any other format as the laser cutter seals the edges of the material to prevent fraying; it opens up opportunities to fashion designers to create innovative designs; intricate patterns can be cut on clothing even on a large scale production run, not possible without a laser cutter.
- Templates for garment construction can be digitised for lay planning for automated fabric cutting machines (CAM); multiple layers can be cut at one time, previously labour intensive and time consuming.
- CAM is a more cost effective system particularly in high volume production - less labour intensive, eliminates human error.
- Utilising CAM as opposed to manual manufacturing of components/parts allows for large production output/quantities where QC is of a consistently high quality even in mass produced clothing.
- CAM allows repeatability, so produces identical fashion products/part products again and again even on a large production scale run.
- CAM systems also enable the manufacturer to respond more easily to changes in demand, easier to make modifications to products.
- Automated systems can run 24/7.

Candidates need to demonstrate knowledge and understanding of the automated processes associated with CAM and the impact on the industry as opposed to manual processes or traditional methods of manufacture used previously or as an alternative.

Do not accept unqualified assertions such as easier, quicker or faster.

Guidance to markers

Incorrect / no answer ***0 marks***

Brief description, very little detail for example:
Computer controlled machinery is more reliable than the human workforce. ***1 mark***

Some detail with some understanding related to CAM for example:
Computer controlled machinery is more reliable and can run continuously without the need for manpower, reducing labour costs. ***2 marks***

A more detailed level of understanding related to CAM for example:
Computer controlled machinery is more reliable and can run continuously without the need for manpower, reducing labour costs. CAM allows repeatability, which is useful on a large production run. ***3 marks***

Full and detailed knowledge and explanation related to CAM for example:

	Computer controlled machinery is more reliable and can run continuously without the need for manpower, reducing labour costs. As it runs continuously manufacturers are able to meet demand for new fashion products more easily and be confident that there will be a consistent quality in the products made by machinery. ***4 marks***	

(b)	Explain how 3D printing brings additional benefits to the fashion designer when developing new products.		✓	4
	*Answers that demonstrate an understanding of regenerated fibres should be awarded up to **4** marks based on:* Rapid prototyping is a process used to quickly fabricate a scale model of a physical part or assembly using three-dimensional computer aided design (CAD) data (*demonstration of knowledge of 3D printing).* The main benefits are that designers can see very quickly working models; models can be tested and amended as necessary; ability to see ideas in two and three dimensions; ability to test product performance (mechanisms, materials). Products can be formed in one piece; unusual shapes (shoes); can be made from recycled plastic (environmental, limits waste). **Guidance to markers** *Incorrect/no answer* ***0 marks*** *Brief description, very little detail for example*: They can see what the end product will look like. ***1 mark*** *Some detail with some understanding related of 3D prototyping with a simple benefit for example:* As they can see what the end product looks like, if it isn't quite right it can be changed before making more***.*** ***2 marks*** *A more detailed level of understanding related of 3D prototyping with benefits for example:* As they can see immediately what the end product looks like, if it isn't quite right it can be changed before a full production line is set up or it saves making a prototype by hand. ***3 marks*** *Full and detailed knowledge and explanation related of 3D prototyping with clear benefits for example:* As they can see immediately what the end product looks like, it can be thoroughly tested, trialled and evaluated e.g. for views on form and styling and changed if necessary before going into further production. It also saves time making a prototype by hand. ***4 marks***			
		Total		**8**

Question 6

		AO3	AO4	Mark
(a)	Evaluate the benefits of incorporating a hydrophilic membrane in the ski jacket.	✓		4

Candidates are required to appraise and/or make judgements about the benefits of incorporating a hydrophilic membrane in the jacket.

- Hydrophilic membrane helps maintain the body temperature [1]. In an activity such as skiing the user would get hot [1]. Moisture from perspiration can escape through the membrane which allows the wearer to keep cool or at a constant body temperature [1].
- Cold wind or moisture from snow or rain cannot penetrate through the membrane, as it repels these elements [1]. It enables the skier to stay dry and not feel cold [1].

- **Guidance to markers**

Little or no understanding ***0 marks***
Basic appraisal and/or judgements of incorporating a hydrophilic membrane in the ski jacket. ***1 mark***
Satisfactory appraisal and/or judgements of incorporating a hydrophilic membrane in the ski jacket. ***2 marks***
Good appraisal and/or judgements of incorporating a hydrophilic membrane in the ski jacket. ***3 marks***
Very good appraisal and/or judgements of incorporating a hydrophilic membrane in the ski jacket. ***4 marks***

(b)	Evaluate the benefits of incorporating a GPS in the ski jacket.	✓		4

Candidates are required to appraise and/or make judgements about the benefits of incorporating GPS in the jacket.

<u>Integrated GPS:</u> Is a small discreet device can be included somewhere within the construction of the ski jacket and is now seen as an essential safety feature for those skiers that go off to areas that are seen as dangerous or suitable for only the most able of skiers [1].
<u>Benefits to the wearer</u>: can easily be tracked wherever they are on the ski slopes but more so if injured at any time [1]. It allows them to be found / rescued quickly and the GPS system is able to locate the exact position on the slopes. It also allows tracking of people who are caught in an avalanche and buried in snow [1]. The GPS is integrated into the jacket it cannot become detached and lost unlike a tracking device that is worn (like a wrist watch) which could become detached and fall off/lost [1].

- **Guidance to markers**

Little or no understanding ***0 marks***
Basic appraisal and/or judgements of the benefits of incorporating a GPS in the ski jacket. ***1 mark***
Satisfactory appraisal and/or judgements of the benefits of incorporating a GPS in the ski jacket. ***2 marks***
Good appraisal and/or judgements of the benefits of incorporating a GPS in the ski jacket. ***3 marks***
Very good appraisal and/or judgements of the benefits of incorporating GPS in the ski jacket. ***4 marks***

	Total	**8**

Question 7

		AO3	AO4	Mark
(a)	Explain the differences between natural polymers and synthetic polymers.		✓	4

*Answers that demonstrate an understanding of natural and manmade polymers should be awarded up to **4** marks based on:*

Natural polymers: plant - cellulosic or animal – (wool or hair) protein polymer - keratin; natural fibres are short, need to be combed, lined up and twisted to make longer useable lengths.

Synthetic polymers: manufactured from petrochemicals; using process of polymerisation, long chains of simple monomer units linked together.

Candidates may also refer to:

- Natural fibres are sustainable, infinite and will decompose.
- Synthetic fibres not sustainable, finite, will not decompose.

Guidance to markers

Incorrect/no answer ***0 marks***

Brief description of polymers, little detail for example:

Natural polymers come from plants and animals, synthetic from oil. ***1 mark***

Some detail with some understanding of both types of polymer for example:

Natural polymers from plants and animals are short staple lengths whereas synthetic fibres from oil have long continuous filaments. ***2 marks***

A more detailed level of understanding of some differences between both types of polymers for example:

Natural polymers can be cellulosic from plants or protein polymers from keratin found in wool from animals, both types consist of short staple lengths whereas synthetic fibres from oil have long continuous filaments. ***3 marks***

Full and detailed understanding of the differences between natural and manmade polymers for example:

Natural polymers can be cellulosic from plants or protein polymers from keratin found in wool from animals, both natural polymers consist of short staple lengths which need to be combed and twisted together to make useable lengths whereas synthetic fibres from petrochemicals have long continuous filaments. ***4 marks***

(b)	Name one aramid fibre and describe its main properties.		✓	3

*Answers that demonstrate an understanding of regenerated fibres should be awarded up to **3** marks based on:*

Acceptable named aramid fibres: Kevlar, Nomex. **1 mark**

Characteristics include:

- High tech aramid fibres can be engineered to exacting technical standards and specifications.
- Strong and resistant to abrasion, durable.
- Resistant to organic and chemical solvents.
- Heat and flame resistant with no melting point.
- Aramid fibres are five times stronger than nylon.
- Non-conductive.

Incorrect/ no answer ***0 marks***

One basic property, limited description. ***1 mark***

Kevlar is very strong – bullet proof.

A more detailed level of understanding of one property fully explained or two appropriate properties for example:

Kevlar is very strong and durable and be engineered to suit specific situations as in bullet proof vests. ***2 marks***

Or

Kevlar is five times stronger than nylon and is also heat/flame resistant. ***2 marks***

(c)	Cotton clothing is considered cool to wear in hot weather because of the structure and properties of the raw cotton fibre. Using notes and diagrams, explain how the structure and properties of the raw cotton fibre makes cotton clothing cool to wear		✓	5

*Answers that demonstrate an understanding of structure and properties of the raw cotton fibre should be awarded up to **5** marks based on:*

Structure of cotton fibre:

- Newly picked fibre is round but collapses into a kidney shape when it dries.
- The centre of the cotton fibre is hollow – has a cavity.
- The fibre structure allows water to penetrate, which is stored in the internal cavity or hollow part.
- This structure *soaks up moisture* – perspiration – takes away moisture – *absorbent* - keeping the wearer of cotton clothing cool.
- The cavity within the fibre is key to cotton being considered cool to wear.

Guidance to markers

• Incorrect/no answer	0
• Candidate has a simplistic knowledge. • Basic use of terminology and technical language. • Simple diagram, very little detail or explanation.	1
• Candidate has some basic understanding of the issues associated with the question. • Limited of terminology and technical language. • Some detail in diagram(s) with some understanding of properties in explanation.	2
• The candidate has some understanding of the issues associated with the question. • Satisfactory use of terminology and technical language is reasonably accurate. • More detailed level of understanding shown in diagrams with some understanding of properties.	3
• The candidate demonstrates a clear understanding of the issues associated with the question. • Good use of terminology and technical language. • Detailed explanation and understanding evident in diagrams with clear knowledge of properties.	4
• The candidate demonstrates a very clear understanding of the issues associated with the question. • Very good use of terminology and technical language. • Full and detailed knowledge and understanding evident in diagrams which fully explain properties.	5

Total	**12**

Question 8

		AO3	AO4	Mark
(a)	Explain what is meant by cutting the material on the 'bias' and give the reason why a fashion designer would choose to do this.		✓	4
	*Answers that demonstrate an understanding of bias cutting should be awarded up to **4** marks based on:* BIAS: the diagonal line between two selvedge edges; templates have to be laid out according to the straight of grain of the material but bias cutting templates are laid diagonally across the material. REASON: gives the material a little bit of stretch; this allows the pieces when joined to be fitted very closely to the body; in larger pieces such as a skirt, the material drapes significantly better; it gives more fluidity to the material when bias cut; it's considered a more glamourous feminine look that accentuates the female form. **Guidance to markers** *Incorrect / no answer* ***0 marks*** *Brief description of cutting on bias, little additional detail for example:* The material is cut diagonally. ***1 mark*** *Some detail with some understanding of cutting on the bias, some additional detail for example:* The material is cut diagonally which helps the material drape better. ***2 marks*** *A more detailed level of understanding of cutting on the bias with detailed reasoning for example:* Bias cutting is when the templates are laid out and cut diagonally across the material. This allows the material some stretch and will help the material drape better. ***3 marks*** *Full and detailed understanding of cutting on the bias with fully detailed reasoning for example:* Bias cutting is when the templates are laid out and cut diagonally across the material. This allows the material some stretch and will help fit the material more closely to the body. It will also allow the material to drape better giving a more glamourous style. ***4 marks***			
(b)	Discuss the use of a satin weave polyester material for the dress shown above.		✓	8
	Answers that have fully discussed the use of a polyester satin weave material which demonstrates an understanding of the <u>polyester fibre</u> as well as the <u>structure of the weave</u> and <u>its application</u> should be awarded up to **8** marks based on: <u>Polyester Fibre</u>: versatile fibre; wide range of uses; very strong; hard wearing; crease resistant. Properties should be fully justified for use on the evening dress. <u>Satin Weave</u>*:* the warp yarn floats over four or more weft yarns and under one; adjacent warp yarns have floats arranged randomly so no visible line is seen; as its warp faced it is a strong weave that drapes well; it has a smooth shiny surface; the weft yarns are only visible on the underside of the material which is matt.			

	Guidance to markers Incorrect/no answer ***0 marks*** Brief description with little detail in the response: brief knowledge of polyester and/or the structure of the weave. Basic level of understanding. ***1 - 2 marks*** Basic description with some detail in the response: some knowledge of polyester evident; some knowledge relating to the structure of a satin weave and its suitability for the product shown. Some evidence of knowledge and understanding ***3 - 4 marks*** More detailed description, with clear evidence of knowledge and understanding in the response: knowledge of the properties relating to the polyester fibre; clear understanding of the satin weave and how its structure makes it suitable for the product shown. Almost all important points analysed in some detail. ***5 - 6 marks*** Full and detailed description, with clear and detailed evidence of knowledge and understanding in the response: clear knowledge of the properties relating to the polyester fibre; full and detailed understanding of the satin weave and how its structure makes it suitable for the product shown. All important points considered and analysed in detail. ***7 - 8 marks***	
	Total	**12**

Question 9

		AO3	AO4	Mark
(a)	Discuss how iconic designs in fashion have a lasting impact on contemporary fashion. Include examples in your answer.		✓	8

*Answers that demonstrate an understanding of how style icons have a lasting impact on contemporary fashion should be awarded up to **8** marks based on:*

- An iconic design is often followed by or it inspires other designers and manufacturers.
- It is often a benchmark for other designs of a similar type.
- It could be considered timeless, versatile and doesn't 'date' unlike other designs.
- It could be simple classic styling that remains popular amongst certain target markets.
- If a new design is based on an iconic design, then contemporary designers can feel confident their new design will be successful.

<u>Iconic Designs in fashion</u>: Burberry - trench coat; Coco Chanel – little black dress; Chanel 2.55 handbag; Louboutin- red sole shoes; Hermes Birkin handbag; YSL smoking jacket; DVF – classic wrap dress; The Chanel Suit; Calvin Klein – little slip dress; Dior – ballet skirt.
Do not credit Mary Quant mini skirt as it appears in previous question.

Guidance to markers
Incorrect/no answer ***0 marks***
Brief description of the impact style icons have on contemporary fashion; little understanding evident; basic or no example. ***1 - 2 marks***
More detailed description of the impact of style icons on contemporary fashion with more detailed knowledge and understanding evident; appropriate examples included. ***3 - 5 marks***
Full and detailed description and understanding of how design icons impact on contemporary fashion with full and detailed explanation with highly relevant exemplars included. ***6 – 8 marks***

Total	**8**

Question 10

		AO3	AO4	Mark
	Analyse the impact that the development of a 'green' consciousness from the consumers is having on the choices and decisions fashion designers make when developing new clothing range.	✓		12
	Candidates should demonstrate knowledge and understanding and apply it to *designing and making principles* to be awarded up to **12** marks based on: • Source of materials/components, finite resources, recycled materials, locally sourced, reduction of carbon footprint • Durability of materials and finished products • Ease of repair of textile products • Simplify designs, less processes in manufacture – aim to reduce energy needed to manufacture in future • Upcycling possibilities of unwanted products • Impact on final disposal of products • Ease of recycling – reprocessing of materials at a future point • Use of organically produced material for example: cotton • Natural versus manmade materials – ethical issues • No fur or leather – ethical issues • Use of renewable energy to power own designer stores, sustainable packaging on products - less pollution • May reference working practice of top designers e.g. Stella McCartney excellent ambassador for maintaining luxury styling with an eco-friendly label • Work with manufacturers on cleaner processes to manufacture materials - water conservation, reduction in harmful chemicals, dyes that pollute waterways • Economical use of materials in lay plans – reduction of waste • Fait trade directives *Accept other viable and factually correct suggestions.* Candidates need to fully elaborate on and justify all of the points they put forward that a designer may consider in order to develop 'greener' products.			

	Guidance to markers	
	Incorrect / no answer ***0 marks***	
	Limited understanding and application of knowledge and understanding of the impact a 'green' consciousness from consumers affects the work of fashion designers. Limited understanding and application of knowledge and understanding of designing and making principles to fashion design /manufacturing industry. There is limited evidence of relevant examples. Quality of Written Communication is limited, presenting material with limited coherence, many errors of grammar, punctuation and spelling. ***1 - 3 marks***	
	Generally good understanding and application of knowledge and understanding of the impact a 'green' consciousness from consumers affects the work of fashion designers. Generally good understanding and application of knowledge and understanding of designing and making principles to the fashion design/manufacturing. There is a line of reasoning which is generally coherent and relevant. Quality of Written Communication is basic, presenting occasional appropriate material with some coherence, some errors of grammar, punctuation and spelling. ***4 - 6 marks***	
	Very good understanding and application of knowledge and understanding the impact of a 'green' consciousness from consumers affects the work of fashion designers. Very good understanding and application of knowledge and understanding of fashion designing and making principles to fashion design/manufacturing. There is a sustained line of reasoning which is generally coherent, relevant and substantiated. Quality of Written Communication is good, presenting mainly appropriate material in a coherent manner, few errors of grammar, punctuation and spelling. ***7 - 9 marks***	
	Excellent understanding and application of knowledge and understanding of the impact of a 'green' consciousness from consumers affects the work of fashion designers. Excellent understanding and application of knowledge and understanding of designing and making principles to fashion design/ manufacturing. There is a sustained line of reasoning which is coherent, relevant and substantiated. Quality of Written Communication is excellent, presenting wholly appropriate material in a coherent and logical manner, hardly any errors of grammar, punctuation and spelling. ***10 - 12 marks***	
	Total	**12**