

A-level

**Design and Technology: Fashion  
and Textiles**

7562/1 Paper 1

Report on the Examination

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## General Comments

Paper 1 focuses on the Technical Principles of the specification, and is a combination of short answer and extended response questions. The overall performance this series was very good although there was a lack of basic information in many responses - it is important that students have an in-depth knowledge of the specification content.

Some points to note when preparing students for the examination:

- Students would benefit from focusing on sections 3.1.1 Classification of materials, and 3.1.2 Performance characteristics of fibres and fabrics of the specification.
- Where the command words are ‘analyse and evaluate’ or ‘compare and contrast’ both positive and negative points are required in responses, especially to reach the top mark band.
- When students are asked to ‘explain’ or ‘describe’ examiners are looking for detailed and relevant points within the response, especially for questions where there is a requirement for examples, or when responding to a specific set of criteria.
- Students who plan their answers, particularly for higher tariff questions, generally gain more marks. It may be useful to also highlight key words in the question as a prompt tool.
- Some students were unsure how to calculate answers for the maths questions, but by showing their working out credit could be awarded for the correct method, even if the final answer was incorrect.

## Comments on Individual Questions

### Question 1

Complete the table by inserting the correct textile term from the list next to its description.

This question was a straightforward introduction to the paper, requiring students to complete the table by matching the textile terms to their correct descriptions. A few students managed to score highly on this question, with 4 as the average mark. Organdie, sateen and corduroy were the most frequently correct. The terms given on the question paper were basic textile terms, as outlined in the first section of the specification under ‘performance characteristics of yarns and fabrics’.

### Question 2

Give **three** reasons for using linings in fashion garments.

Answered very well, with most responses gaining 3 marks. Students were able to correctly give a range of different reasons for using linings in fashion garments.

**Question 3**

Explain the differences between **plain woven silk** and **polyester satin** fabrics and reasons why they are used for garment linings.

Overall, a poorly answered question; it was clear that there was a lack of knowledge and understanding of fibre properties, especially when made into a fabric. The average mark was below 3, with the marks generally awarded from the lowest mark band for basic descriptions.

Students were able to explain the individual fibre or fabric properties but were often unable to access the middle or top mark band due to a lack of knowledge about the combination of fibre and weave structure when made into a fabric. Often the wording of the question was disregarded, as examiners were looking for the *differences* between the two fabrics; the indicative content is set out in a way that should assist this understanding.

Many students are still confused about the properties of polyester, incorrectly stating that it is a breathable and absorbent fibre. Many knew that polyester fibres are strong but did not recognise that when used for a satin weave, the floating yarns can snag, making it a much weaker fabric.

**Question 4**

Complete the graph using the data given in Table 2.

The first maths question on the paper, designed to assess the skill of interpreting data. This was answered very confidently, with most students gaining the 3 full marks.

**Question 5**

Outline the specific **fabric properties** required in clothing for a coffee shop worker and a racing car driver.

The question was answered fairly well although the average was 3 out of 6 possible marks. Reasonable answers were given for the coffee shop worker but students were more confident when responding to the requirements for a racing car driver. Some incorrectly gave *heat resistant*, *fireproof* and *absorbent* as examples for a coffee shop worker. Absorbency as a property to keep the wearer cool in a warm environment was an acceptable point; absorbency to mop up stains and spills was not credited – it is important for students to consider the fabric requirements in terms of the context. For the racing car driver most students correctly identified that *fire retardant*, *strong*, *abrasion resistant*, *breathable* and *stretchy* properties were required for this job.

**Question 6**

Analyse and evaluate how guidance and requirements for manufacturers ensure that products are safe for consumers. Refer to: consumer legislation, role of the BSI and labelling advice.

This question focused on consumer safety in terms of the three key aspects in the question:

**Consumer legislation.** This was answered reasonably well; many students noted the Consumer Rights Act and outlined that consumers could return faulty products for a refund or replacement.

**Role of the BSI.** Many students knew that products approved by the BSI are awarded a Kitemark to ensure consumer safety. However, there is still much confusion about the role of the BSI – they are not a government body, they do not set laws, they do not check or ensure the quality of the manufacturing of products. Generally speaking, the British Standards Institute set *guidelines* for manufacturers to follow, these are *voluntary* and *not a legal requirement*; if products don't comply with the standards, they may be unfit for purpose, and put consumers' safety at risk. Some guidelines have been adopted into law, for example, the Nightwear Safety Regulations and the Furnishings Regulations.

**Labelling advice.** Many students noted the requirement to label products with care instructions, country of origin, fibre content and the Lion Mark for children's toys.

In terms of marks, 5% of all responses gained credit from the 7-9 mark band, 30% from the 4-6 mark band and more than 60% from the 1-3 mark band. It is important to note the command words for this question: analyse and evaluate. Some students presented an evaluation but generally, most responses focused on positive points with very few, if any, negative comments.

### Question 7.1

Use the data in the table to calculate the cost of all materials to make one hoodie.

The first of five parts, focusing on maths calculations in reference to an illustrated hoodie. Over 80% of responses gained 1 mark for this part question.

### Question 7.2

Calculate the amount of profit a retailer makes on a batch of different hoodies. Give your answer to **two** decimal places.

Over half of all responses gained the full 4 marks. Many students also gained marks for using the correct method/working, even if they arrived at the incorrect answer. Generally, responses which were more organised in the space allocated in the answer booklet were more successful. Some students had used the incorrect figures when working out the answer leading to some confusion.

### Question 7.3

A retailer orders a batch of 1420 hoodies. The hoodies are either blue, white or grey in the ratio 5:1:4. How many grey hoodies are in the batch?

Over 85% of all answers were credited with the full 2 marks. A reasonably straightforward ratio question, which was answered very well.

### Question 7.4

In a sale, a discount of 25% is offered on a hoodie priced at £37.99. On the last day of the sale, a further 10% is taken off the discount price. Calculate the cost of one hoodie to the **nearest penny** after all discounts.

Again, a confidently answered question with 65% of responses gaining 2 marks, and nearly 20% gaining 1 mark. Some students had incorrectly calculated an overall discount of 35%, without taking into account the two sets of discounts that needed to be applied.

**Question 7.5**

Calculate the length of ribbing needed to make the pocket. (of the hoodie)

This was answered fairly well, with one third of all students gaining 3 full marks, but 40% failing to score any marks. The questions are designed to become increasingly more challenging, which is noted in these results. Some answers showed confusion when working out the length of ribbing for the two pockets – the correct method to arrive at the amount for one pocket was  $\frac{1}{4} \pi 32$ , some using the 16cm from the measurement on the drawing, with a variation of different calculations and success to work out the answer. Credit for the final answer was not awarded if the student had rounded up or was outside of the accepted range.

**Question 8**

Explain why double jersey fabric is used for hoodies.

Many students failed to recognise that double jersey is a weft knitted fabric made with two sets of needles to create a firm structure. Some stated that it was a ‘*double*’ fabric so stronger, without showing an understanding of the fabric itself; these responses drew little, if any, credit. Incorrect or irrelevant references were often made to easy care, easy to work with, cheap and very stretchy. Some students also referenced the *design* of a hoodie in explaining that it doesn’t need components to put on over the head and others writing about ribbing on sleeves and hemlines. Although there were many good and detailed answers, the average mark was 2 out of a possible 6, matching with the ‘basic’ descriptor in the mark scheme.

**Question 9**

Give **three** different types of mechanical finishes.

A fairly well answered question, with 54% of students able to correctly name three different types of mechanical finishes. Some had not factored in the *mechanical* aspect of the question, and instead gave examples of *chemical* finishes.

**Question 10**

Outline the differences between the manufacture of **felt** and **needle felt**.

A very mixed response - it was clear that many students did not have the knowledge to answer this question. The question asked for the *differences between* two methods of manufacturing felted fabrics; most students gave an account of each method separately, and did not make a comparison between the two.

Technical knowledge was often lacking, with many incorrectly stating that felt is made by adhesive or by fusing fibres through heat setting. Equally, many had picked up on the ‘*needle*’ in needle felt but could not give more detail than ‘a needle is used to matt the fibres together’. Higher scoring responses compared the use of wool fibres for felting with synthetic fibres for needle felting, the scales on wool fibres to the barbs on the needles, and that felted fabrics are made by hand while needle felted fabrics are made through mechanical action.

**Question 11**

State what is meant by the term colour fast.

Most students, 70%, gained 1 mark for a correct definition of the term colour fast. However, some responses incorrectly stated that it was how 'quickly colour is *lost or fades*' from a fabric, these types of responses were not given credit.

**Question 12**

Describe an industrial test to measure and compare colour fastness in fabrics when exposed to light.

This question focused more on the science aspect of the specification, and many students did not pick up on this. Some did not pick up on '*industrial test*' in the question and instead often described a classroom-based test, with too many inappropriately stating that fabric samples were to be left in sunlight for a lengthy period to notice a change. Few included a control sample for comparison, and some referred to photographing the control or test sample which would not give rise to an accurate test result. The most successful answers were presented in a methodical way, following the testing process from start to end result.

**Question 13**

Calculate the area of the centre square of the quilted pattern shown.

A simple but seemingly challenging maths question. Students confident in maths arrived at the correct answer quickly, while those less confident attempted to calculate the answer in a number of different ways with varying rates of success. In its essence, the square at the centre was similar in area to all four shaded triangles of the quilted shape. Students who recognised this were more able to arrive at the correct answer. Credit is awarded for correct working out; it is advisable that students show their working out to gain method marks, even if the final answer is incorrect.

**Question 14.1**

Give **one** example of a laminated fabric.

A high number of answers correctly gave an example of a laminated fabric; most naming Gore-tex®, much fewer giving Sympatex® or pvc. Nearly 5% of all students did not attempt to answer this question.

**Question 14.2**

Explain what is meant by a laminated fabric.

Slightly more challenging, this question proved difficult for a high number of students. Only 23% gained the full 2 marks, with many not understanding that laminate fabrics are made up of two or more layers, which are held together by adhesive or the heat setting properties of the fabrics. Some responses incorrectly explained the coating process, and others explained that it is when fabrics are trapped between plastic.

### Question 15

Compare and contrast the environmental impact of applying colour to **cotton** and **synthetic** fibres. Refer to fabric preparation, dyeing methods.

In general, this question proved challenging to many. In terms of marks; 5% of all responses gained credit from the 7-9 mark band, 15% from the 4-6 mark band and more than 60% from the 1–3 mark band. It was clear that this was challenging to answer given that the majority of responses matched up to the ‘basic’ descriptor in the mark scheme.

Some students were very knowledgeable and were able to give detailed or good comparisons. Weaker responses focused on the vast amounts of water needed for cleaning and dyeing the fibres, to the discharge of waste dyes into waterways, damaging eco systems. Many went on to compare the number of processes that cotton fibres need to go through for even uptake of colour, while synthetic fibres are arguably more environmentally friendly as the dye is added at the spinning stage.

### Question 16

Explain how advice given to consumers can encourage more sustainable care and maintenance of textile products. Refer to washing, drying and storage.

This question was answered reasonably well, however, the majority of responses, 45%, were in the low mark band. 35% of responses were placed in the middle mark band, and only 6% of students able to reach the top mark band.

In terms of indicative content, many correctly explained that washing at low temperatures or handwashing encourages more sustainable care but few went beyond these more obvious points. Many suggested that drying outdoors, on a flat surface or not using a tumble dryer conserves energy for sustainability.

Slightly less information was given with regard to storage. Some explained that moths may attack fibres, but often incorrectly named cotton and not wool fibres, or referred to storing products in plastic bags, in an organised way, with little or no explanation of the points made.

Some students misunderstood the question. Rather than explaining existing advice to consumers - in terms of washing, drying and storage of products to ensure sustainable care and maintenance of textile products, some explained how manufacturers or retailers should give advice to consumers through care labels with symbols, swing tickets and QR codes.

### Question 17

Describe specific thread types and how they can be used to create decorative effects.

The average mark for this question was just over 2 out of a possible 6 marks, indicating that most responses were bordering on the basic to good mark descriptors. The question asked for specific thread types along with describing how they can create decorative effects. Most common examples were metallic threads for lustre, glow in the dark threads for safety and embroidery threads, as they are stranded and can be used with various thicknesses. Overall, there was a lack of breadth in the number of examples students provided, and a lack of detail and in-depth knowledge in terms of their decorative

effects. Many responses incorrectly gave examples of yarns, such as bouclé, chenille and slub, in place of threads.

### Question 18

Work out the coordinates of **point B** (of the embroidered motif).

A fairly challenging maths question for many students. Nearly a quarter of all students achieved the full 2 marks for this question, with a further 10% achieving one mark by correctly identifying one correct coordinate.

### Question 19

Analyse and evaluate different modern manufacturing systems used in garment production to increase efficiency and reduce textile waste.

This question was a good differentiator, with students gaining credit across all twelve marks. There were many responses that showed a detailed analysis and evaluation of a wide range of manufacturing systems. Many of the manufacturing systems outlined on the indicative content were cited in responses, yet these often lacked detail and simply described the system without analysing how they can reduce waste and increase efficiency. Few students evaluated the systems, which was a requirement of all mark band descriptors.

### Question 20

Give **two** reasons why carbon and ceramic fibre are often used in the production of nano-fibres.

Most students answered with confidence with approx. 45% gaining 2 marks and a further 35% gaining 1 mark. Strong, durable and lightweight were the most common responses; some students used the term 'small' as an incorrect way of describing 'fine', which was not given credit.

### Question 21

Explain how **modern** and **smart** materials benefit the wearer of clothing and accessories designed for walking and hiking.

Although responses gained credit across all mark descriptors, the majority were on the border of the basic and good descriptors, with an average of 3 out of a possible 9 marks for this question. Students very often took time, as an introduction, to explain the differences between modern and smart materials. This was not credited with any marks as it was not a requirement of the question.

The most frequently specified materials were Gore-tex, photochromic, thermochromic and microencapsulated fabrics. Students were very confident when explaining the benefits of Gore-tex, highlighting its breathability, water and wind repellent properties and ability to keep the wearer dry when walking or hiking.

Descriptions of photochromic and thermochromic fabrics were generally less detailed; students understood that both materials can alert the wearer to atmospheric changes but fewer knew that photochromic fabrics have a printed design on the surface which changes colour in response to strong UV rays, and that thermochromic dyes, impregnated into the fabric, change colour only in response to

extreme heat. Many responses stated incorrectly that thermochromic fabric alerts the wearer to cold conditions.

Microencapsulated fabrics were reasonably well explained, though with some not understanding that particles within the material need to be activated by friction in order to release any benefits, such as moisturiser, for the wearer.

For a high mark tariff question, examiners were looking for a wide range of specific materials, with an in-depth knowledge and understanding of modern and smart materials.

### **Mark Ranges and Award of Grades**

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