General Certificate of Education
January 2008
Advanced Subsidiary Examination

ASSESSMENT and QUALIFICATIONS ALLIANCE

DESIGN AND TECHNOLOGY: PRODUCT DESIGN (TEXTILES) **PD1T**

Unit 1 Materials and Components

Wednesday 9 January 2008 9.00 am to 10.30 am

For this paper you must have:
- a lined answer book (AB08) which is provided separately
- normal writing and drawing instruments
- a colour Insert Sheet (enclosed).

Time allowed: 1 hour 30 minutes

Instructions
- Use blue or black ink or ball-point pen. Use pencil and coloured pencils only for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is PD1T.
- Answer **three** questions.
  Answer Question 1 and **two** other Questions.
- Use the Insert Sheet included to help you answer **Question 1**.

Information
- The maximum mark for this paper is 100.
  Four of these marks will be awarded for using good English, organising information clearly and using specialist vocabulary where appropriate.
- The marks for questions are shown in brackets.
- There are 40 marks for Question 1 and 28 marks for each of Questions 2 to 4.

Information
- Illustrate your answers with sketches and/or diagrams wherever you feel it is appropriate.

Answer Question 1.

1 Study the photographs of the three scarves (**Figures 1**, **2** and **3**) shown on the Insert Sheet. Each scarf depends on a different technique for its colour and pattern.

(a) This part of the question refers to scarf A (**Figure 1**).

(i) Scarf A has a plain weave construction.
Explain how the striped pattern has been achieved on this scarf.
You may use a diagram. *(4 marks)*

(ii) The fabric is made from 100% viscose.
Evaluate the use of viscose for this scarf. *(6 marks)*

(iii) Briefly describe the technique used to produce the fringed edge on this scarf. *(2 marks)*

(b) This part of the question refers to scarf B (**Figure 2**).

Strips of different fabric and ribbons are stitched on to a net background to make scarf B (**Figure 2**).
Some strips are made from needlecord.
The diagram below shows the construction of needlecord.

(i) Name this method of fabric construction. *(1 mark)*

(ii) With reference to the diagram above, explain how needlecord is produced. *(3 marks)*

(iii) The fabric strips have been overlocked and stitched flat to the net background.
Evaluate this method of finishing the fabric edges for this scarf. *(3 marks)*

(iv) The manufacturer has used velvet ribbon rather than strips of velvet fabric.
Explain the reasons for this. *(3 marks)*

(v) Explain the care that will be needed when sewing the different parts of this scarf together. *(4 marks)*

(vi) Briefly describe the technique used to produce the fringed edge on this scarf. *(2 marks)*

(c) This part of the question refers to scarf C (**Figure 3**).
Scarf C is made from weft knitted acrylic.

(i) Explain the construction of the weft knit.
You may use a diagram. *(3 marks)*

(ii) The scarf is a double layer of fabric yet there is no seam.
Explain why there is no seam. *(2 marks)*

(iii) Justify the choice of acrylic fibre for this scarf. *(5 marks)*

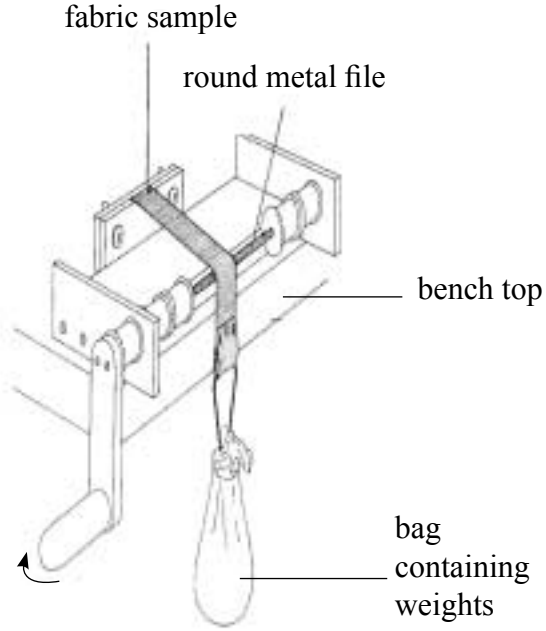
(iv) Briefly describe the technique used to produce the fringed edge on this scarf.
(2 marks)

Turn over for the next question

Answer any **two** questions from 2, 3 and 4.

2 Many textile products are discarded because they are insufficiently durable for their intended purpose.

The diagram below shows apparatus set up to test the durability of fabrics.



The results shown in the chart below were obtained using this equipment.

Fabric	Number of turns of file	Observations
Cotton denim	95	Fabric lost colour then wore into a hole
Polyester satin	23	Fabric snagged but did not wear into a hole
Polyester/viscose suiting	35	Surface of fabric spoiled by pilling
Cotton corduroy	43	Bald patches appeared before a hole developed

(a) (i) Denim and corduroy are both cotton fabrics yet the denim was more resistant to abrasion. Making reference to the test results on the opposite page, explain the reasons for this. *(6 marks)*

(ii) Polyester is a very strong fibre yet the satin fabric did not perform well in the test. Analyse the reasons for this. *(5 marks)*

(iii) After testing, the polyester viscose fabric was spoiled by *pilling*. Explain what is meant by pilling and why it has occurred in this fabric. *(5 marks)*

(b) Many factors affect the durability of a fabric. Giving examples, discuss how each of the following may affect how a garment wears.

(i) The ways in which a garment is used *(6 marks)*

(ii) The ways in which a garment is cared for. *(6 marks)*

3 The manufacture and use of textiles can affect the environment in many ways. Evaluate the environmental impact of each of the following.

(a) Cotton denim jeans *(10 marks)*

(b) The use of fibres such as Tencel® and Lyocell® *(6 marks)*

(c) The use of synthetic fibres such as polyester and nylon *(5 marks)*

(d) The laundering of textile products *(7 marks)*

Turn over for the next question

4 Use your knowledge and understanding of fibres and fabrics, together with the information given in the chart below, to answer the questions which follow.

Fabric type	Typical uses
55% wool/45% polyamide	Socks, sweaters
100% linen	Summer clothing
100% polyester fleece	Blankets/throws, jackets, casual tops, hats
100% silk herringbone weave	Men's formal ties

(a) Analyse the reasons why wool/polyamide blends are popular for the uses given. *(7 marks)*

(b) Evaluate the suitability of 100% linen fabrics for summer clothing. *(7 marks)*

(c) (i) Describe polyester fleece fabric. *(3 marks)*

(ii) Explain its suitability for the uses given in the chart. *(6 marks)*

(d) Evaluate the suitability of the silk fabric for men's ties. *(5 marks)*

END OF QUESTIONS

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Insert

For use with Question 1

Figure 1 Scarf A

Fringed edge of scarf A

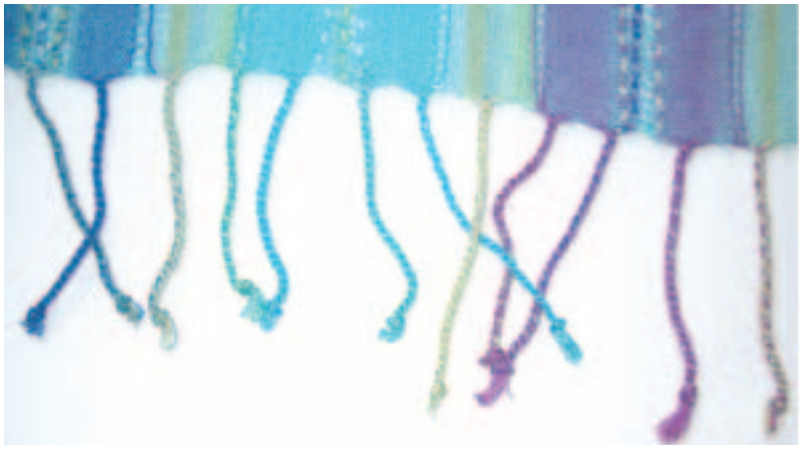

Figure 2 Scarf B

Fringed edge of scarf B

Figure 3 Scarf C

Fringed edge of scarf C

END OF SOURCES

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