

General Certificate of Education  
June 2008  
Advanced Subsidiary Examination



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

**Unit 1 Materials and Components**

Tuesday 20 May 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 black ink or black 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 any **two** of Questions 2 to 4.
- 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.
- 40 marks are allocated to Question 1 and 28 to each of Questions 2 to 4.
- The marks for questions are shown in brackets.

**Advice**

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

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 Answer Question 1.
 

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1 Study the photographs of the two pairs of overalls (**Figure 1** and **2**) shown on the Insert Sheet. The overalls are intended for wearing when carrying out DIY jobs in the home and garden.

(a) The blue overalls (**Figure 1**) are made from 100% cotton twill weave fabric.

(i) Describe the structure of a twill weave.  
You may use a diagram.

*(3 marks)*

(ii) Explain the properties of this cotton fabric which make it particularly suitable for these overalls.

*(7 marks)*

(iii) The care label attached to the blue overalls is shown below.



Explain in detail why this care programme is recommended.

*(4 marks)*

(b) The white overalls (**Figure 2**) are made from 100% polyester non-woven fabric.

(i) The fabric is produced from a thermally bonded web of fibres.  
Briefly explain this process of producing a fabric.  
You may use a diagram.

*(3 marks)*

(ii) With reference to these overalls explain why polyester fibres are suitable to use in this bonded fabric.

*(6 marks)*

(c) The blue overalls (**Figure 1**) have a button and buttonhole fastening and the white overalls (**Figure 2**) are fastened with a zip.

(i) Evaluate the suitability of these fastenings for the overalls.

*(4 marks)*

(ii) Discuss the usefulness of the other style features shown on the two pairs of overalls.

*(5 marks)*

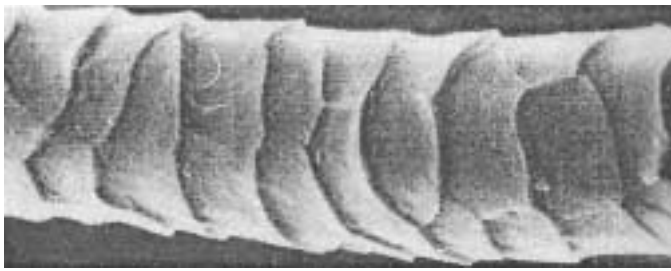

(d) The white overalls (**Figure 2**) are sold as a disposable product whilst it is intended that the blue overalls (**Figure 1**) will be used over a long period of time.

Discuss the environmental issues associated with the manufacture and use of these two pairs of overalls.

*(8 marks)*

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

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

Characteristics	Properties	Aftercare
Wool: is a staple fibre is a protein fibre has a natural crimp	Highly absorbent High levels of stretch and elasticity Hydrophobic – it can repel raindrops Thermally insulating Non-static	Wash in cool water (40 °C) Dry flat Do not tumble dry Do not use biological detergents
Magnified wool fibre showing overlapping scales		Woolmark
		

- (a) (i) Wool is a *staple fibre*.  
What is meant by staple fibre? (1 mark)
- (ii) What is meant by *crimp*?  
You may use a diagram. (1 mark)
- (iii) Explain the qualities given to woollen fabrics by these **two** characteristics of the wool fibre. (6 marks)
- (b) (i) How can wool be *hydrophobic* despite its high absorbency? (2 marks)
- (ii) What are the implications of this for the comfort qualities of woollen garments? (4 marks)
- (c) (i) Explain in detail why great care needs to be taken when washing and drying woollen fabrics. (8 marks)
- (ii) Describe how the overlapping scales on the wool fibre can be put to use in the manufacture of a fabric. (3 marks)
- (d) The ‘Woolmark’ is often seen on woollen fabrics.  
Explain the purpose of this symbol. (3 marks)

Turn over ►

**3** Colour and pattern are put on to fabrics in a variety of ways. Describe each of the following methods, and evaluate their suitability for commercially produced fabrics.

- (a) Tie and dye *(4 marks)*
- (b) Screen printing *(8 marks)*
- (c) Quilting *(8 marks)*
- (d) Embroidery *(8 marks)*

**4** The choice of components can have an important effect on the success of a product.

Giving examples, discuss each of the following.

- (a) The choice and use of interfacings in garment manufacture *(10 marks)*
- (b) The choice and use of linings in clothing and household products *(10 marks)*
- (c) The choice of trimmings for formal evening wear *(8 marks)*

**END OF QUESTIONS**

**Design and Technology: Product Design  
(Textiles)  
Unit 1 Materials and Components**

**Insert**

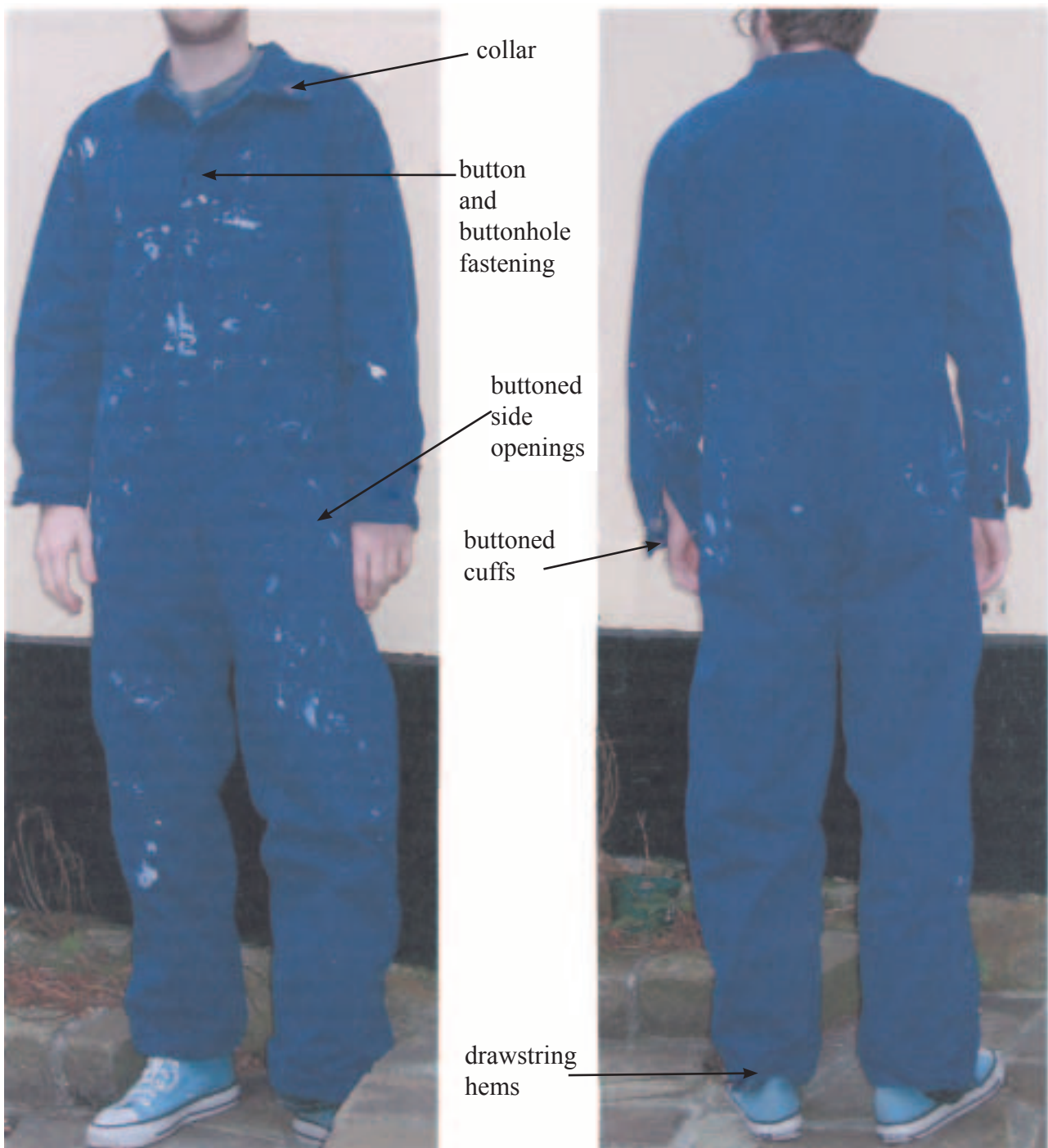
The photographs on this sheet are for use in answering Question 1

**Figure 1**

**Blue overalls**

Front View

Back View



**Turn over ▶**

**Figure 2**

**White overalls**

Front View

Back View

