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## AS

# DESIGN AND TECHNOLOGY: PRODUCT DESIGN (TEXTILES)

Unit 1 Materials, Components and Application

Monday 23 May 2016

Morning

Time allowed: 2 hours

### Materials

For this paper you must have:

- normal writing and drawing instruments
- an insert sheet (enclosed).

### Instructions

- Use black ink or black ball-point pen. Use pencil only for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions in Section A.
- Answer **one** question from Section B, **either** Question 7 **or** Question 8.
- Answer Section C.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

### Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- There are 20 marks for Section A, 20 marks for Section B and 40 marks for Section C.

### Advice

- Illustrate your answers with sketches and/or diagrams wherever you feel it is appropriate.
- You are advised to spend approximately 30 minutes on Section A, 30 minutes on Section B and one hour on Section C.



**Section A**Answer **all** questions in this section.**1 (a)** What is meant by a staple fibre?**[1 mark]**

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**1 (b)** Give an example of a staple fibre.**[1 mark]**

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**2** Twist is important when spinning fibres together to make a yarn. Explain why.**[2 marks]**

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**3 (a)** What is the selvedge on a woven fabric?**[1 mark]**

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**3 (b)** What is meant by the straight grain of a woven fabric?**[1 mark]**

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**2**

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**2**

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**2**

- 4 Complete the table below by putting an item from the following list next to the correct description.

You must not use any item more than once.

[6 marks]

Felt      Chenille      Wool      Tencel      Jersey

Twill      Acrylic      Ramie      Underlining      Proban

A regenerated fibre	
A synthetic fibre	
A fabric finish	
A knitted fabric construction	
A non-woven fabric construction	
A fancy yarn	

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- 5 Colour fastness is important for textile products.

Explain what colour fastness means.

[2 marks]

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Turn over ►



**6** Each item of equipment shown below is used when designing and making textile products in a craft workshop.

Explain how each item is used.

**6 (a)** An overlocker

**[2 marks]**



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**6 (b)** French curves

**[2 marks]**



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6 (c) A rotary cutter

[2 marks]



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Turn over for the next question.

Turn over ►



**Section B**

Answer **either** Question 7 **or** Question 8.

- 7 A fabric technologist tested three different fabrics used to make trousers intended to be worn regularly.

A report on these fabric tests is given in the table below.

	<b>Fabric 1:</b> Plain weave made from 100% polyester	<b>Fabric 2:</b> Corduroy made from 96% cotton and 4% elastane	<b>Fabric 3:</b> Twill weave made from 100% wool
<b>Test</b>	<b>Result</b>		
<b>Abrasion resistance</b>	Very high but fabric pilled quickly	Low resistance. Holes formed quickly and fabric was left with bald patches	Low resistance with holes appearing fairly quickly
<b>Absorbency</b>	Low	High	Very high
<b>Handle</b>	Hard with stiff handle	Soft texture with good drape and flexibility	Smooth texture with good drape
<b>Crease resistance</b>	Good. Creases quickly disappeared	Average. Fabric creased a lot but the creases soon disappeared	Good. Fabric does not crease easily
<b>Ability to keep wearer warm</b>	Low	Medium	High
<b>Electrostatic charge</b>	High	Low	Low
<b>Relative cost</b>	Low	Medium	High
<b>Ease of care</b>	Very easy	Easy	Difficult



**7 (a)** Fabric 1 is made from a plain weave. Describe the plain weave.

You may use a diagram.

**[3 marks]**

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**7 (b) (i)** Explain the difference in electrostatic charge between Fabric 1 and Fabric 2.

**[3 marks]**

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**7 (b) (ii)** How does electrostatic charge affect the comfort of a fabric?

**[1 mark]**

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**Turn over ►**









Do **not** answer this question if you have answered Question 7

- 8 Patchwork is a popular technique used when making cushions like the one shown in **Figure 1** below.

**Figure 1**



- 8 (a) Briefly discuss the benefits of using patchwork.

**[2 marks]**

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**8 (b)** Describe the care that is needed when choosing fabrics for the patchwork front of the cushion.

**[4 marks]**

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**8 (c)** Give **two** functions of the piping used on the cushion shown in **Figure 1**.

**[2 marks]**

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**8 (d)** Give **two** different quality control checks needed when making the patchwork front of the cushion shown in **Figure 1**.

Explain what the checker will be looking for.

**[2 x 2 marks]**

Quality Control Check 1 \_\_\_\_\_

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Quality Control Check 2 \_\_\_\_\_

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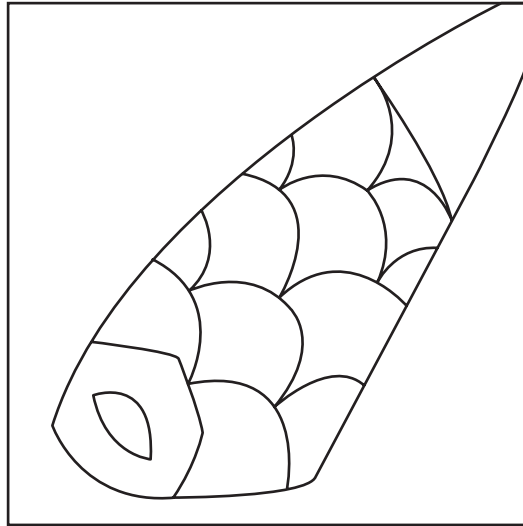


**8 (e)** Quilting is also a popular technique used on the front of cushions.

Describe how to quilt the design shown below.

You may use diagrams in your answer.

**[3 marks]**



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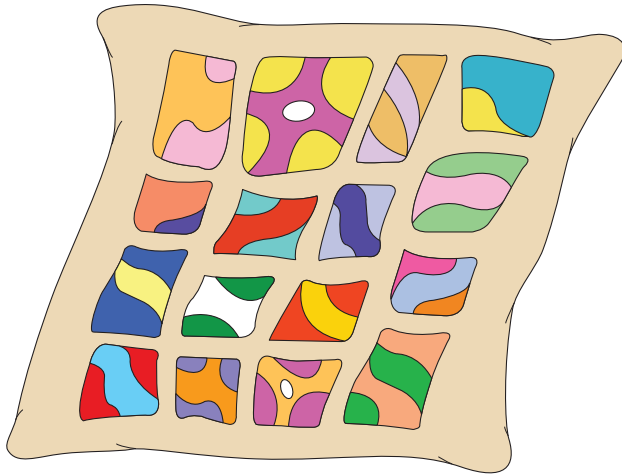
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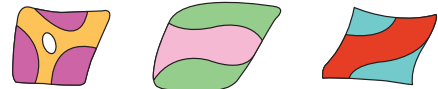
8 (f) Use notes and/or diagrams to describe the steps needed to appliqué the design shown below on to the front of the cushion.

In your answer you should explain why a thin viscose machine embroidery thread is used to stitch the appliqué to the fabric.

[5 marks]



Some of the different shapes used in the design are shown below.



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**Section C**

Answer this question

**9** Designers often use inspiration from other cultures when designing new products.

**9 (a)** A manufacturer requires a new range of women's dresses to be designed.

Describe **three** different ways the designer can use inspiration from the garments shown in **Figure 2** on the Insert Sheet.

**[3 marks]**

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**9 (b)** Designers need to be able to communicate with their clients.

Explain how each of the following might be used.

**9 (b) (i)** Feedback from market research

**[2 marks]**

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**9 (b) (ii)** A presentation board

**[2 marks]**

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**9 (b) (iii)** A toile

**[2 marks]**

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**9 (c)** Explain how the development of new materials has had an impact on modern garments. **[6 marks]**

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**9 (d)** Inspiration from the garments shown in **Figure 2** is going to be used for a new design of the basic fashion top shown in **Figure 3** on the Insert Sheet.

Show your idea for a new design for the top. Include style details and a fastening.

**[6 marks]**





9 (e) The fashion top will be part of a limited edition collection for a popular chain store.

9 (e) (i) Explain the reasons why many retailers have developed limited edition collections.

**[3 marks]**

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9 (e) (ii) Explain how the fashion garments sold in a limited edition collection will be different from the standard range.

**[3 marks]**

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**9 (f)** The manufacturer will use a sub-assembly system when making the tops.

Explain the reasons why sub-assembly systems are used in commercial manufacture.

**[4 marks]**

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**9 (g)** Explain why quality control is important during the high volume manufacture of fashion tops.

**[4 marks]**

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9 (h)

Explain how new technologies can be used to ensure that manufacturers and retailers are able to respond quickly to changing demand for fashion products.

**[5 marks]**

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**END OF QUESTIONS**



**There are no questions printed on this page**

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