

General Certificate of Secondary Education

A572

**Design and Technology:
Textiles Technology**

Unit A572 Sustainable Design

Specimen Paper

Time: 1 hour

Candidates answer on the question paper.

Additional materials:

Candidate
Forename

Candidate
Surname

Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do not write in the bar codes.
- Do not write outside the box bordering each page.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- Your Quality of Written Communication is assessed in questions marked with an asterisk (*).
- The total number of marks for this paper is 60.

FOR EXAMINER'S USE

1		7		13	
2		8		14	
3		9		15	
4		10		16	
5		11		17	
6		12		18	
TOTAL					

This document consists of **9** printed pages and **3** blank pages.

Section A

Answer **all** questions.

1 This symbol stands for:



- (a) School safety policy
- (b) British safety consideration
- (c) British safety institute
- (d) British standards institute

[1]

2 The abbreviation of **COSHH** stands for:

- (a) Centre of social health hygiene
- (b) Central office supporting health hazards
- (c) Control of substances hazardous to health
- (d) Central office substances hazardous to health

[1]

3 Which of the following is **not** a renewable energy resource?

- (a) water
- (b) coal
- (c) wind
- (d) solar power

[1]

4 Biodegradable means that it can:

- (a) grow naturally in the environment
- (b) naturally rot in the environment
- (c) be re usable as a different product
- (d) not grow naturally in the environment

[1]

5 The role of a designer of sustainable products is to:

- (a) create innovative sustainable designs
- (b) modify existing designs
- (c) use traditional designs
- (d) design products that can be bought cheaply

[1]

6 In the space below draw the symbol that would be found on a product that can be recycled.

[1]

7 The term recycling means to a product.

[1]

8 State what is meant by a product being 'Fair trade'

..... [1]

9 What is the term given to the appearance of an object including its shape, colour and texture?

..... [1]

10 What is the name given to the collection of data on human body measurements?

..... [1]

Decide whether each of the following statements is *true* or *false*.

True

False

11 Smart materials are materials whose properties can change due to changes in pressure, force, light or temperature.

[1]

12 A renewable source is one that cannot be renewed within 50 years.

[1]

13 Chemicals that can cause harm to people and animals are called bio products.

[1]

14 Job production is used to make large batches of products.

[1]

15 Ethical trading is a term used to show that the basic rights of the employees are protected.

[1]

Section A Total [15]

Section B

Eco design is about designing a product with the environment in mind and trying to minimise the damage to the environment throughout a products life cycle.

Fig.1 shows a mobile phone case.



Fig.1

16 (a) Explain why the following are important in the design of the mobile phone case.

Product planning:

.....
.....
.....
.....[2]

Development:

.....
.....
.....
.....[2]

Functionality:

.....
.....
.....
.....[2]

Safety:

.....
.....
.....
.....[2]

Aesthetics:

.....
.....
.....
..... [2]

(b) Identify **five** specification points for the mobile phone case.

1 [1]
.....
2 [1]
.....
3 [1]
.....
4 [1]
.....
5 [1]
.....

Total [15]

SPECIMEN

Fig. 2 shows an environmentally friendly fleece pet bed.



Fig. 2

17 (a) Give **two** design requirements for the pet bed.

1 [1]

2 [1]

(b) Describe, using notes and sketches, **two** examples of how environmental issues could have been considered in the design and manufacture of the pet bed.

Example 1

Example 2

[3]

(c) With reference to the 6Rs select and describe **two** ways in which your product could address **two** of these issues. The pet bed is to be manufactured overseas. Give **three** reasons why companies choose to manufacture their products abroad.

- 1 [1]
- 2 [1]
- 3 [1]

(d) With reference to the 6Rs select and describe **two** ways in which the pet bed could address **two** of these issues.

- 1 [2]
- 2 [2]

Total [15]

18(a) Identify a textile product that could be recycled.

.....

Explain why you have chosen this product and how it can be recycled.

.....
.....
.....
.....
.....

[2]

(b) The product is to be used for product analysis.

Why might product disassembly be a good method for analysing products?

.....
.....
.....
.....
.....
.....

[3]

(c) Explain, using notes and diagrams, what is meant by the 'life cycle' of a product.

.....
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[3]

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SPECIMEN

Section A		
Question Number	Answer	Max Mark
1	This symbol stands for: D	[1]
2	The abbreviation of COSHH stands for: C	[1]
3	Which of the following is not a renewable energy resource? B	[1]
4	Biodegradable means that it can: B	[1]
5	The role of a designer of sustainable products is to: A	[1]
6	In the space below draw the symbol that would be found on a product that can be recycled.  Accept variations of this symbol – e.g. without the shading	[1]
7	The term recycling means to a product. re-use	[1]
8	State what is meant by a product being 'Fair trade' fair wages for the workers in less economically developed countries (LEDC's)	[1]
9	What is the term given to the appearance of an object including its shape, colour and texture? aesthetics	[1]
10	What is the name given to the collection of data on human body measurements? anthropometrics	[1]

Section A		
Question Number	Answer	Max Mark
11	<p>Smart materials are materials whose properties can change due to changes in pressure, force, light or temperature.</p> <p>true</p>	[1]
12	<p>A renewable source is one that cannot be renewed within 50 years.</p> <p>false</p>	[1]
13	<p>Chemicals that can cause harm to people and animals are called bio products.</p> <p>false</p>	[1]
14	<p>Job production is used to make large batches of products.</p> <p>false</p>	[1]
15	<p>Ethical trading is a term used to show that the basic rights of the employees are protected.</p> <p>true</p>	[1]
Section A Total		[15]

Section B		
Question Number	Answer	Max Mark
16(a)	<p>Eco design is about designing a product with the environment in mind and trying to minimise the damage to the environment throughout a products life cycle.</p> <p>A designer must think about the impact on the environment.</p> <p>Explain why the following are important in the design of the mobile phone case.</p> <p>Two marks for each section.</p> <p>Product Planning: 2x1 [2]</p> <ul style="list-style-type: none"> • Research, analysis of existing products. • Technical data of product. • Disassembly of existing products. • Properties required by product. • Choosing right materials & components. • Method of manufacture. • Tools & equipment needed. <p>Development: 2x1 [2]</p> <ul style="list-style-type: none"> • Changing an aspect or all of the design; fabric, fastenings, colour, size etc. • Enhancing a product with decoration. • Adding extra details – pockets, top stitching, etc. • Range of ideas. <p>Functionality: 2x1 [2]</p> <ul style="list-style-type: none"> • Is it fit /capable for its intended purpose/ use? • Ease of manufacture. • Works efficiently. • Looks good & is saleable. • Enhance users/ wearers image. <p>Safety: 2x1 [2]</p> <ul style="list-style-type: none"> • Safe use & disposal of textile product. • Legal requirements & legislation. • Safety standards- labelling BSI etc. • Safety in the workplace & safety of workers when making. • Safety of user. 	

Section B		
Question Number	Answer	Max Mark
16(b)	<p>Aesthetics: 2x1 [2]</p> <ul style="list-style-type: none"> • The look / appearance of the product. • Style of product. • Properties of product- drape, colour, texture etc. 	[10]
	<p>Identify <u>five</u> specification points for the mobile phone case. One mark for each specification point. Max five 1x5 [5] Generic design points e.g. 'cheap', 'durable', 'light' etc NOT acceptable</p> <ul style="list-style-type: none"> • Age/ target market/ user. • Size range, ergonomic/ anthropometrics. • Fibre/ fabric properties. • Style • Care considerations/ maintenance/ comfort. • Fabric techniques/ finishes. • Components required. • Production/ manufacturing methods. 	[5]
	Total	[15]
17(a)	<p>Give two design requirements for the pet bed. 2x1 [2]</p> <ul style="list-style-type: none"> • easy to store / carry • fabric properties/ hardwearing/strong/durable • Appropriate size(reference to a specific animal) • Care requirements/ considerations • Comfort/ softness/ texture 	[2]
17(b)	<p>Describe using notes and sketches, two examples how environmental issues could have been considered in the design and manufacture of the pet bed. 2x 3 [6] Maximun six marks. Design idea with no notes/ annotation. One idea with labelling. More than one idea with notes. A range of design solutions & annotation. A range of design solutions, annotation and colour. A very well drawn & creative range with annotation</p>	[6]

Section B		
Question Number	Answer	Max Mark
	<p>Points to consider: Front & back views Techniques/ methods identified Colours identified or shown Sizes/ measurements Materials, fastenings, components Finishing Care considerations Costing Recycled materials/ eco friendly</p>	[3]
17(c)	<p>The pet bed is to be manufactured overseas. Give three reasons why companies choose to manufacture their products abroad. 3x1 [3]</p> <ul style="list-style-type: none"> • Cheaper raw materials/ components • Availability of workforce • Cheaper labour costs • Lower capital costs- loans by financial providers • Lower overheads- rent, insurance, marketing • Specialist skills in workforce available 	
17(d)	<p>With reference to the 6Rs select and describe <u>two</u> ways in which the pet bed could address <u>two</u> of these issues. Credit any reference to any two of the 6Rs. 2x2 [4]</p> <ul style="list-style-type: none"> • Recycle - material, product, disassembly. • Re-use - pass on. (friend, family), charity shop, third world country. • Reduce - production process, costs, emissions, wastage materials, dyes, transport, life cycle. • Refuse - use of sustainable materials, biodegradable. Materials we should refuse to use. • Re-think - materials & components used, purpose of product. • Repair - mending, sewing, fixing products. 	[4]
	Total	[15]
18(a)	<p>Identify a textile product that could be recycled. Explain why you have chosen this product and how it could be recycled.</p>	

Section B		
Question Number	Answer	Max Mark
	<ul style="list-style-type: none"> • Charity shops • Giving it to a friend or relative • Sending it abroad • Reusing the fibres • Reusing the material to make another product • Fancy dress 	[2]
18(b)	<p>The product is to be used for product analysis</p> <p>Why might disassembly be a good method for analysing products?</p> <p>1x3 [3]</p> <p>Credit three separate points or three marks for a detailed answer</p> <ul style="list-style-type: none"> • Taking it apart/ unpicking it allows you to see the original shapes of the garment pieces • Pattern layout • See what pre manufactured components have been used • Identify the fabrics used/ linings and inter facing • Identify techniques used 	[3]
18(c)	<p>Explain, using notes and diagrams, what is meant by the 'life cycle' of a product.</p> <p>Three marks for explanation of the 'life cycle' of a product in correct order.</p> <p>3x1 [3]</p> <p>List = max 2 marks.</p> <ul style="list-style-type: none"> • From design to disposal • Raw materials- where they came from harvested/ made • Production process- how the product is made • Transport and distribution- best method • Uses- intended function • Recycling • Care and maintenance • Disposal – recycled/ biodegradable. 	[3]
18(d)	<p>Products become 'obsolete' after a few years.</p> <p>Discuss the difference between fashion and planned obsolescence.</p> <p>Planned</p> <p>Continually changing designs.</p> <p>Specific life span/ time limit.</p> <p>To persuade users to up grade/ replace.</p> <p>Product fails after a specified time by manufacturer.</p> <p>Becomes obsolete/ non functional.</p> <p>To generate long term sales volume by reducing time between repeat purchases.</p>	

Section B		
Question Number	Answer	Max Mark
	<p>Fashion In style and out of style within a planned season. Continually changing designs. Minor 'feature' changes/ re styling. 'Feeling' out of date. Allows for 'self expression' Cheaper Replaceable.</p> <p>Level 1 (0-2 marks) Basic discussion, showing some understanding of the meaning of 'obsolete' in the context of textile products. Can provide a description of some of the conflicts that exist between fashion and planned obsolescence. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised. Errors of grammar, punctuation and spelling may be intrusive.</p> <p>Level 2 (3-5 marks) Adequate discussion, showing an understanding of the meaning of 'obsolete' in the context of textile products. Can provide a description of the conflicts that exist between fashion and planned obsolescence. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation</p> <p>Level 3 (6-7 marks) Thorough discussion showing a clear understanding of the meaning of 'obsolete' in the context of textile products. Can provide a clear description of the conflicts that exist between fashion and planned obsolescence. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate can demonstrate the accurate use of spelling, punctuation and grammar.</p> <p style="text-align: right;">Total</p>	<p>[7]</p> <p>[15]</p>
Section B Total		[45]
Paper Total		[60]

Assessment Objectives Grid (includes QWC)

Question	AO1	AO2	AO3	Total
1	1			1
2	1			1
3			1	1
4	1			1
5	1			1
6		1		1
7	1			1
8	1			1
9			1	1
10	1			1
11			1	1
12			1	1
13			1	1
14			1	1
15			1	1
16	10	5		15
17		11	4	15
18	12	3		15
TOTAL	29	20	11	60