

Design and Technology (Textiles Technology)

General Certificate of Secondary Education

Unit **A572**: Sustainable design

Mark Scheme for January 2011

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Question	Expected Answer	Mark	Rationale/Additional Guidance
1	Which of the following fibres are not from a sustainable resource? (C)	[1]	
2	Which of the following reduces wastage of materials (B)	[1]	
3	Smart labelling refers to (A)	[1]	
4	LCA stands for: (C)	[1]	
5	Improving the design of a textile item refers to: (B)	[1]	
6	The symbol shown stands for Kite Mark, BSI, British Standards/ Institution	[1]	Accept any combination
7	Name one natural fibre eg: cotton, wool, linen, jute, coir, hemp, silk, bamboo, alpaca, angora, ramie.	[1]	Credit any correct natural fibre
8	Name one of the three main types of recycling Primary, Secondary or physical, Tertiary or chemical	[1]	
9	Name one recyclable textile material Denim, wool, cotton, silk, linen, corduroy.	[1]	Accept any type of textile material that could be recycled. Not leather
10	Fill in the missing word Hazardous, toxic, harmful, irritant, dangerous.	[1]	
11	All fabrics are manufactured False	[1]	

Question		Expected Answer	Mark	Rationale/Additional Guidance
12		COSHH is a legal requirement for manufacture True	[1]	
13		Yarn can be made from a sustainable resource True	[1]	
14		Eco friendly & organic fibres are the same False	[1]	
15		Acrylic fibres are made from renewable resources False	[1]	
16	(a)	Give four environmentally friendly reasons for using 100% wool. <ul style="list-style-type: none"> • Sustainable/renewable resource • Cost effective/transport, feed, maintenance • Hand made/machine made • Can be made & sold locally • Can be recycled • Biodegradable/decompose • Natural fibre/no chemicals/no dyes • Low cost to replace/to environment • Life cycle process – low CO2/pollution • Keeps traditional crafts alive 	[4]	4x1 marks
	(b)	Identify two disadvantages of using 100% wool <ul style="list-style-type: none"> • Hand wash only or care cold wash on a machine • Wears out quickly • Can irritate skin • Can be expensive to purchase • Shrinks if hot wash • Cannot be tumble dried • Pilling and bobbling • Goes out of shape/stretching 	[2]	2x1

Question	Expected Answer	Mark	Rationale/Additional Guidance
(c)	Identify three ways in which smart materials could be used to ensure the sock is high-tech <ul style="list-style-type: none"> • Use nanotechnology - silver – odour/fungus • Anti bacterial – smell/anti allergy • Chemical finishes- stain/water repellent • Micro-encapsulation of comfort providing chemicals • Electronics - heat pads • Moisture control/wicking • Chromatic/luminescent - glow in the dark/ heat reactive 	[3]	3x1 To be added to in light of candidate responses
(d)*	Explain how changes in society can affect the design of textiles product. <ul style="list-style-type: none"> • Attitudes to fashion/eco-friendly • Use of vintage/recycled clothing • Need for a product/lifestyle choice • Political attitudes • Animal welfare issues • Changes in trends- music/fashion/culture • Attitudes to health/fitness/disability • Leisure time pursuits • Economic - climate/costs/availability of resources • Global economic issues- war/recession • Immigration/age issues 	[6]	6x1 Level 1 (0-2 marks) Basic explanation, showing some understanding of the way political, economic and social issues can lead and influence the design of a textile product. Can provide a description of some of the areas of possible influence. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised or 'list like'. Errors of grammar, punctuation and spelling may be intrusive. Level 2 (3-4 marks) Adequate explanation, showing an understanding of the way political, economic and social issues can lead and influence the design of a textile product. 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

Question		Expected Answer	Mark	Rationale/Additional Guidance
				<p>Level 3 (5-6 marks) Thorough explanation, showing clear understanding of the way political, economic and social issues can lead and influence the design of a textile product. There will be three or more clearly identified and explained points. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate will demonstrate the accurate use of spelling, punctuation and grammar.</p>
17	(a)	Give four reasons why a designer chooses to use recycled fabrics and textile components. <ul style="list-style-type: none"> • Cost • Individuality/uniqueness/fashion statement • Ease of manufacture • Less impact on the environment- waste • Reference to: reuse, reduce, refuse, rethink, repair 	[4]	4x1 Reasons will need to be explained - details of what materials could be used, plastic bottles, old components etc. Do not accept one word answers or general statements eg: 'environmentally friendly' or 'help environment'.
	(b)	Produce an annotated sketch to show a design for a piece of textile jewellery that would appeal to a teenager and address the recycling of materials and components. <ul style="list-style-type: none"> • Colour shown or labelled • Fashionable/new innovative • Low cost/cheap • Component other than zip • Recycled fabric- named or named product • Decorative technique 	[3]	3x1 No marks if not a textile jewellery product. Must refer to textiles – fabrics and components. Marks can be awarded for drawing and/or annotation Do not credit 'appeal to teenagers' as it is in the question stem.

Question		Expected Answer	Mark	Rationale/Additional Guidance
	(c)	<p>Explain two problems of using recycled fabric and textile components to make new products.</p> <ul style="list-style-type: none"> • Irregular supplies – lack of consistency eg: colour • Limited supply • Cost/time of disassembly to get usable materials • Materials not suitable • Fabric too worn/dirty • Components weak/broken/poor quality 	[4]	2x2 List equal maximum of two marks
	(d)	<p>Name the term used to describe this</p> <ul style="list-style-type: none"> • Built in Obsolescence 	[1]	1x1 Accept obsolete or obsolescence on its own
	(e)	<p>Give three environmental issues related to the manufacture of throw away products.</p> <ul style="list-style-type: none"> • Wastage • Biodegradability • Chemicals/pollution • Transport issues • Landfill issues/ disposal- burning • Primary recycling • Resources – energy usage/costs • Manufacturing costs • Packaging implications 	[3]	3x1
18	(a) (i)	<p>Name one technique of dyeing fabric by hand</p> <ul style="list-style-type: none"> • Tie-dye • Batik • Dip dye • Spray diffusing/hand painting • Cold water/machine/microwave 	[1]	1x1

Question			Expected Answer	Mark	Rationale/Additional Guidance
18	(a)	(ii)	Name one method of industrial dyeing <ul style="list-style-type: none"> • Batch dyeing • Continuous dyeing • Discharge printing • Resist printing • Sublimation printing 	[1]	1x1 Do not accept 'printing'
	(b)		Describe what is meant by natural dyes <ul style="list-style-type: none"> • dyes from pigments from plants • animals • vegetables • made without chemicals 	[2]	2x1 or two marks for one answer well explained
	(c)		Describe one problem associated with using natural dyes <ul style="list-style-type: none"> • Limited number of colours • Colour fading • Difficult to achieve exact same colour • The mordant used can effect the colour of the dye • Lack of natural resources • Less vibrant colours achieved • Mordants can be harmful 	[2]	2x1 or two marks for one answer well explained
	(d)		Name two of the care symbols shown on the label <ul style="list-style-type: none"> • Hand wash/wash at 30^o/hand wash setting on machine • Do not dry clean • Low iron/can be ironed/cool iron/iron • No bleach 	[2]	2x1 Answers must relate to symbols shown

Question		Expected Answer	Mark	Rationale/Additional Guidance
	(e)	<p>Identify four health & safety points to be followed when working with dyes.</p> <ul style="list-style-type: none"> • Emergency procedures clearly labelled/identified/advertised • Training of workers/ permission to work with dyes • Ventilation • Protective clothing- goggles/gloves/aprons/footwear • Working conditions/clean, dry, safe work area • Accident procedure/spilling of dyes • Labelling of dyes • Storage of dyes • Safe disposal of dyes • Risk assessment including COSHH 	[4]	<p>4x1</p> <p>Only one mark for protective clothing</p>
	(f)	<p>Discuss the issues associated with the transportation of the t shirt to the UK.</p> <ul style="list-style-type: none"> • Jobs in third world countries- incomes in poor areas/exploitation of cheap labour • Fuel used - road/air/sea-costs/energy • Carbon footprint/ fumes/CNC gases • Cultural links • Quality checks • Pollution/ health related problems 	[3]	3X1
		Total	[60]	

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