

Design and Technology (Textiles Technology)

General Certificate of Secondary Education

Unit **A572**: Sustainable design

Mark Scheme for June 2012

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

OCR will not enter into any discussion or correspondence in connection with this mark scheme.






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Annotations

Annotation	Meaning
	Level 1
	Level 2
	Level 3
	Noted but no credit given
	Tick

Subject-specific Marking Instructions

Marking crossed out and duplicated answers

OCR currently provides examiners with 'rules' for marking crossed out answers (which may be partially or wholly correct) and duplicated answers. Duplicated answers refer to two (or more) alternative responses to the same question, or responses to more optional questions than required within the paper rubric.

The rules are as follows:

Crossed out answers

- where a candidate crosses out an answer and provides an alternative response the crossed out response is not marked and gains no marks
- Where a candidate crosses out an answer to a whole question, but makes no second attempt and the inclusion of the answer would not cause a rubric infringement, the assessor should attempt to mark the crossed out response and award marks appropriately.

Duplicated answers

- normally all responses are marked and the highest mark given
- where alternate answers are provided to a multiple choice question, no mark should be awarded (for example: following a request to tick one box, the candidate ticks two or more boxes)
- where the candidate provides contradictory responses, no mark should be awarded (for example: the candidate writes a statement such as 'water freezes at 0°C this means it is a liquid at -10°C'). The candidate, here, does not seem to understand the context of the 'question'
- where the candidate has adopted a 'scattergun' approach by providing multiple answers to a single response question, no mark should be awarded.

Question		Answer	Marks	Guidance
1		D British Standards Institute	1	
2		A Rejects	1	
3		B A moral Issue	1	
4		C Taking photographs	1	
5		A Oil	1	
6		Fire resistant / fire proof / will not catch fire / flame resistant / non flammable	1	
7		Size / measurements of product / how it has been designed for ease of use / how it fits	1	Do not accept shape
8		Products that have a limited life span/ made to develop faults	1	
9		Toxic	1	Do not accept chemical as it is in the question / stem
10		Ethical Trade Initiative / Ethical Trading Initiative	1	1 mark = all three words must be correct.
11		True	1	
12		True	1	
13		False	1	
14		True	1	
15		False	1	
SECTION A TOTAL			15	

Question			Answer	Marks	Guidance
			SECTION B		
16	(a)	(i)	<ul style="list-style-type: none"> • Credit any relevant product. • Innovative ideas could be car seatbelt covers, power kites, advertising banners, ties... 	1	1x1 mark Do not credit reference to fibres it must be a named product. Eg do not accept 'wool' but you could accept a wool scarf as you would be marking the product not the fibre.
		(ii)	<ul style="list-style-type: none"> • Cheaper / free / costs less • Individuality / uniqueness • Reduce unwanted wastage / less waste / pollution / CO2 • A range of colours / styles- less predictable • Uses unwanted materials / components • Social / moral issues • No new resources used • Not going into landfill. • Better for the environment must be qualified 	2	2x1 Do not credit repeats Do not credit reuse as it is in the question / stem

Question	Answer	Marks	Guidance
(b)	<p>FUNCTIONAL</p> <ul style="list-style-type: none"> • Is it fit for its intended purpose / use / carrying things • Works efficiently. • Meets customer requirements / needs -is saleable. • Components used- fastenings / handle • Strap adjustability • Pockets inside for specific purpose / items eg mobile phone • Ease of care / cleaning • Security • Strength/durability of fabric. • Size <p>AESTHETIC</p> <ul style="list-style-type: none"> • The look / appearance. • Style of product. • Decorative components used • Decorative techniques used • Pattern / texture • Logo / motif • Enhance users / wearers image. • Fashion / trends / street style / unique • Customer appeal • Colour 	8	<p>4x1 for Functional 4x1 for Aesthetic</p>

Question		Answer	Marks	Guidance
	(c)	<ul style="list-style-type: none"> • Fair trade • Ensures product has been made by workers with fair working conditions • Ensures fair / minimum wages are set • Encourages social / moral standards / issues • Encourages ethical principles • Provides schools and health care in third world countries • Funds community projects • Prevents the exploitation of workers • Reduced poverty • Provides secure sustainable livelihoods • Helps give jobs to keep traditional crafts alive 	4	4 x1
QUESTION 16 TOTAL			15	
17	(a)	<ul style="list-style-type: none"> • Zip • Toggle • Drawstring / pull cord / elastic • Ribbon • Popper • Button • Pocket • Collar • OCR - logo 	2	2x1 Do not accept thread / string as a component

Question	Answer	Marks	Guidance
(b)	<ul style="list-style-type: none"> • Origin of fibres- natural / recycled / sustainable / organic • Materials - recycled / reused / repair / waste – can it be? / has it used? • Energy efficient / renewable energy • Carbon footprint / CO2 • Techniques / methods identified. • Dyeing methods / natural dyes • No chemicals • Fabrics / fastenings / components • Manufacturing methods / made locally • Finishing / care considerations • Biodegradable 	4	4x1
(c)	<ul style="list-style-type: none"> • Products are broken down and reformulated • Fibres are re spun and re-used • Fabric such as fleece can be made from plastic bottles • Wool remnants can be used for stuffing / wadding / insulation • Use of chemicals to break down • Mechanical breakdown of fibres and fabrics. 	3	3x1 Accept three separate points or the explanation

Question		Answer	Marks	Guidance	
				Content	Levels of response
	(d)	<p>Marks to be awarded for points relating to:</p> <ul style="list-style-type: none"> • The stages a product goes through from initial concept to eventual disposal or decomposition • Product LCA life cycle assessment – assessing the effect a product has on the people or the environment • Investigating every aspect of the product • Design • Manufacture • Use • Disposal • The impact a product might have. • Raw materials & components used • Energy used during manufacture • Manufacturing processes • Product safety & use • Product disposal • Product recycling / decomposition • ‘Cradle to cradle’ / ‘circular economy’ 	6	<p>‘Cradle to cradle’ / ‘circular economy’ - products designed to be taken apart and made into another product of the same or better quality, or safely composted back into the earth.</p>	<p>Level 3 (5-6 marks) Thorough explanation, showing clear understanding of what the term product life cycle means. There will be three of 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> <p>Level 2 (3-4 marks) Adequate explanation, showing an understanding of what the term product life cycle means. 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 1 (1-2 marks) Basic explanation, showing some understanding of what the term product life cycle means. 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.</p> <p>0=no response worthy of credit</p>
QUESTION 17 TOTAL			15		

Question			Answer	Marks	Guidance
18	(a)	(i)	<ul style="list-style-type: none"> Regenerated fibres 	1	1x1
		(ii)	<ul style="list-style-type: none"> Fully recyclable Biodegradable Uses a closed loop process - waste used during manufacture can be reused during the production process. Modern fibres made from wood pulp cellulose Raw materials are natural or form fibres naturally Made from eucalyptus / pine trees / bamboo / cotton linters Renewable / sustainable 	2	2x1 Accept natural fibres
		(iii)	<ul style="list-style-type: none"> Soft / smooth / comfortable Strong / durable / hardwearing Cool or warm Absorbent High wet strength Biodegradable Minimal shrinkage Antibacterial properties for sensitive skin Inhibits bacterial growth Easy care / washable Lightweight 	2	2x1
	(b)		<ul style="list-style-type: none"> Sun / solar Wind Wave / tidal / ocean / water / hydro Geothermal Biomass Bio fuels Ethanol fuel (sugar cane) 	2	2x1 Do not accept light

Question	Answer	Marks	Guidance
(c)	<ul style="list-style-type: none">• Less damage to our environment• Less depletion of non-renewable sources• Less fumes and pollution• More sustainable and eco friendly methods• Creation of jobs and research posts• Better waste management - social and moral issues• Planning for the future and future generations• Harvesting of natural existing resources without damage• Connecting with other countries and sharing resources	4	2x2 Answers must be an explanation

Question	Answer	Marks	Guidance
(d)	<ul style="list-style-type: none"> • Antiseptic encapsulated / aromatic / soothing / vitamins • UV radiation protection • Anti allergy • Heat control / change colour • Microencapsulation • Moisture absorption • Anti bacterial • Silver atoms to fight bacteria • Nanotechnology • Modern materials – Lycra, Polartec • Neoprene for joint supports • Biotex – bio sensor • Interactive / electronic textiles • Anti static • Bandages • Under garments for eczema • Socks for fungal infections • Dressings • Medical stitches • Hospital garments • Pillows and mattresses / memory foam • Artificial arteries / ligaments 	4	4x1 No marks for just products
	QUESTION 18 TOTAL	15	
	PAPER TOTAL	60	

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