

Design and Technology (Textiles Technology)

General Certificate of Secondary Education

Unit **A572**: Sustainable design

Mark Scheme for January 2013

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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.

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Annotations

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

| Question | | Answer | Marks | Guidance |
|----------|--|---|-----------|--|
| 1 | | (B) Produced in developing countries | 1 | |
| 2 | | (D) Wetsuits | 1 | |
| 3 | | (C) Take it apart | 1 | |
| 4 | | (B) Using less materials | 1 | |
| 5 | | (A) Carbon Footprint | 1 | |
| 6 | | European Eco Label/Eco Label/Eco friendly | 1 | Do not accept 'Eco' |
| 7 | | LCA= Life Cycle Analysis | 1 | All three words must be correct to get a mark |
| 8 | | Primary Secondary or Tertiary | 1 | |
| 9 | | Mobius logo has THREE arrows | 1 | Accept sketch if correct |
| 10 | | Primary research of existing products. Finding out/information about products | 1 | Do not accept 'analysing a product' as it is written in stem |
| 11 | | FALSE | 1 | |
| 12 | | TRUE | 1 | |
| 13 | | FALSE | 1 | |
| 14 | | TRUE | 1 | |
| 15 | | FALSE | 1 | |
| | | Total | 15 | |

| Question | | Answer | Marks | Guidance |
|----------|---------|---|-------|---|
| 16 | (a) (i) | <p>Functional features:</p> <ul style="list-style-type: none"> • Protection of foot from weather • Warmth • Safety issues – injury • Fit – size/width/adjustable straps • Ease of getting on • Durability • Heel – gives height to wearer/better balance/comfort. | 2 | Is it fit/capable for its intended purpose/use? |
| | (ii) | <p>Aesthetic:</p> <ul style="list-style-type: none"> • Style/rips/holes in fabric • Fastenings: buttons/poppers • Fashionable/appealing/unique • Colour • Texture • Decoration/pattern/studs/stitching/straps • Material. | 2 | Its look/appearance related answers. |
| | (b) | <ul style="list-style-type: none"> • Uses reclaimed/re-used materials – minimises fabric wastage • Non use of toxic dyes/chemicals – use of natural dyes • Reduces waste into landfill sites • Disposal – recycled/biodegradable • Gives opportunities for jobs/creating designing individual products • Use of less manufacturing processes in the making – less energy consumption – electricity and water • No built in obsolescence • Care considerations/labelling • Natural resources/materials – sustainable/renewable. | 4 | <p>Marks are for explanation and the quality of the explanation.</p> <p>One word answers or a list max 2 marks.</p> |

| Question | | Answer | Marks | Guidance |
|----------|--|---|-----------|----------|
| (c) | | <ul style="list-style-type: none"> • Raises profile of Fairtrade companies • Supports workers in third world countries: fair wages • Community support for workers: housing/education • Encourages local production of raw materials/natural cotton/farming • Encourages moral buying • Sets a fair price for the product • Highlights awareness of social differences in workers: no sweatshop conditions • No child labour • Trustworthy label. | 3 | |
| (d) | | <ul style="list-style-type: none"> • Use of toxic substances/CFC's • Pollution to the environment – air/soil/water • Harmful substances to humans and animals • High energy consumption • Storage of dangerous chemicals • Working with dangerous chemicals • Allergies from chemicals • Encourages production of global warming • Limits recycling/reuse of products after life. • Use of non-renewable resources for chemical production. | 4 | |
| | | Total | 15 | |

| Question | | Answer | Marks | Guidance |
|----------|---------|--|-------|---------------------------------|
| 17 | (a) | <ul style="list-style-type: none"> • Mask • Goggles/glasses • Protective clothing – overalls/apron/coat etc • Protective Footwear/wellington boots • Gloves • Hat/cap. | 3 | |
| | (b) | <ul style="list-style-type: none"> • Plants • Flowers • Vegetables • Fruit • Insects. | 1 | |
| | (c) (i) | <p>Secondary recycling: the process of turning the product into something else.</p> <ul style="list-style-type: none"> • Child's apron/decorating shirt • Fancy dress/costume outfits • Creating a new product from the old product • Leaving the product to biodegrade and then regenerate it into something else • Using fabric to embellish/patchwork/appliqu  into another product. • Altering the product in some way. | 2 | |
| | (ii) | <p>Marks to be awarded for:</p> <ul style="list-style-type: none"> • Drawing of product or garment/cushion etc • Use of colour: shown or named • Pattern • Fastenings • Pockets/cuffs/collars/sleeves/waistband/strap • Identification of patchwork or appliqu  • Reference to size or scale • Reference to target market • Reference to unisex • Named fabric and components. | 3 | Credit either drawing or notes. |

| Question | | Answer | Marks | Guidance | |
|----------|------|---|-------|---|--------------------|
| | | | | Content | Levels of response |
| | (d)* | <ul style="list-style-type: none"> • Buy second-hand clothing and textiles where possible • Buy fewer garments and textile products • When buying new products, choose those made with least energy and least toxic emissions • Made by workers paid a credible living wage with reasonable employment rights and conditions • Lease/hire/resell clothes that would otherwise not be worn to the end of their natural life • Wash clothes less often, at lower temperatures and using eco-detergents, hang-dry them and avoid ironing where possible • Extend the life of clothing and textile products through repair • Buying organic sourced materials • Buying locally made and sourced products: reduces transport issues/fuel/pollution • Dispose of used clothing and textiles through recycling businesses extract and recycle the yarn or fibres • Built in fashion Obsolescence. | 6 | <p>Level 3 (5–6 marks) Thorough discussion, showing clear understanding of how consumers can reduce their impact. 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> <p>Level 2 (3–4 marks) Adequate discussion, showing an understanding of how consumers can reduce their impact. 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 discussion, showing some understanding of how consumers can reduce their impact. 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 | | Answer | Marks | Guidance |
|----------|---------|--|-------|----------|
| 18 | (a) | <ul style="list-style-type: none"> • Warmth • Lightweight • Dry cleanable • Comfortable/soft next to skin • Naturally odour resistant • Shower proof/water resistant • Does not ravel or fray • Flame resistant • Is chemical resistant • Retains shape • Durable/hardwearing • Crease resistant • Resistant to build up of static electricity. | 3 | |
| | (b) (i) | <p>Sustainable</p> <ul style="list-style-type: none"> • Renewable • Uses renewable energy in manufacturing • Uses natural materials/dyes/resources • Little or no harm to the environment through production • Will not run out/will regrow again/be replanted • Can be collected without harm to the animal/earth. | 3 | |
| | (ii) | <p>Biodegradable</p> <ul style="list-style-type: none"> • Natural fibres/materials • Decomposition/rot/breakdown • No harmful chemicals involved so will be environmentally friendly • Life cycle process. | 3 | |

| Question | | Answer | Marks | Guidance |
|----------|-------|---|-----------|--|
| | (iii) | <p>Tertiary Recycling</p> <ul style="list-style-type: none"> • Products can be broken down and reformulated • Fibres are re-spun and re-used • Fleece fabric from plastic bottles • Wool remnants used for wadding/stuffing/insulation • Fastenings used again. | 3 | |
| | (c) | <ul style="list-style-type: none"> • Encourages high volume production of clothes-sweatshop factories – poor working conditions • Produces high consumption of energy fuels • Contributes to higher output of green house gases/CO₂ emissions • Encourages cheap imports – not Fairtrade • Encourages high volume purchases • Less use of second hand market • Consumer greed • Encourages more waste/throwaway society • Uses up resources • Encourages landfill waste • Uses cheap/poor quality materials • Less durability • Built in obsolescence – limited availability. | 3 | <p>Marks are for three different disadvantages.</p> <p>Do not credit repeats.</p> |
| | | Total | 15 | |

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