

Design and Technology (Textiles Technology)

General Certificate of Secondary Education

Unit **A574**: Technical Aspects of Designing and Making

Mark Scheme for January 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
	Unclear
	Benefit of doubt
	Caret sign to show omission
N/A	Highlight
	Level 1
	Level 2
	Level 3
	Repeat
	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	(a)	<ul style="list-style-type: none"> • Silk – shirt/blouse/ dress/ bedding/duvet / sheets/lingerie / curtains / purse / hat / bag / underwear / evening wear / suit • Linen/flax – tea towel/trousers/blouse/shirt / cushion / hat / throw / trousers / hat / bag / suit • Cotton – t shirt/towel/socks/curtains / pillow / coat / cardigan / leggings / bedding / jean / beanbag / hat/ bag / duvet /suit <p>One mark for fibre, one mark for product Any suitable product made from that fibre. Do not credit repeats</p>	6	<p>Do not accept 'clothing' or 'garments' as an answer, but do accept different items of clothing for each fibre.</p> <p>Not track suit for silk Not T shirt / jeans / socks / underwear for linen pyjamas, underwear or jeans</p> <p>Not Top – too vague</p> <p>Do not accept 'table linen' – product must be specified, eg table cloth, napkin – part of answer comes from the question - linen</p> <p>Accept any suitable product made from the fibre the symbol represents, not the candidates answer.</p> <p>Accept suitable product even if fibre incorrect and vice versa as long as one is correct for the symbol.</p>

Question		Answer	Marks	Guidance	
				Content	Levels of response
	(b)	<p>Reference could also be made to be made to:</p> <p>Performance characteristics needed for the product, linked to the PCs of the fibre and fabric construction methods chosen.</p> <p>Finishes to fabrics – crease resistance/mould or mildew resistance/anti-pilling/waterproof/stain resistance/etc</p> <p>Sustainability – natural fibres as opposed to synthetic/renewable</p> <p>Cost – must not price out of target</p> <p>Disposal – biodegradable/recyclable / fabric can be re-used</p> <p>Aesthetic qualities – appeal to target market/texture/look season / fashion</p> <p>Length of life – strong & hardwearing</p> <p>Ethical considerations – 3rd world countries, sweatshops, fair trade etc.</p> <p>Organic fibres – reduce use of pesticides and chemicals</p> <p>Aftercare considerations, energy used in washing, drying and ironing textile products.</p>	6	<p>Environmentally friendly needs to be qualified</p> <p>If list max 2 marks.</p> <p>Not production methods – construction methods, batch, seams etc.</p> <p>Not quality checks on fabric unless linked to re-using / recycling fabric</p> <p>Need to look at the number of different factors they consider and then the examples / explanations they give</p>	<p>Level 1 (0–2 marks) Explanation shows a limited understanding of reasons for choice of fabrics. There will be little or no use of specialist terms. Answers may be vague and disorganised. Errors of grammar, punctuation and spelling may be intrusive. Answer may take the form of a list.</p> <p>Level 2 (3–4 Marks) Explanation shows some understanding of a range of factors to consider eg; performance characteristics, aesthetics, 6Rs, although these may not always be correct. There may be occasional errors in spelling, punctuation and grammar.</p> <p>Level 3 (5–6 Marks) Explanation shows a thorough understanding of the performance characteristics of fibres and fabrics as well as their aesthetic qualities. Factors such as sustainability and cost, disposal of the product at the end of its life will also be mentioned. Specialist terms will be used appropriately and correctly and the information will be presented in a structured format. The candidate will demonstrate accurate use of spelling, punctuation and grammar.</p>

Question			Answer	Marks	Guidance
2	(a)	(i)	Taking a finished pattern and modifying to make different sizes/making it bigger or smaller to fit standard sizes/altering it to fit different sizes	1	Key words to look for – changing size Not ‘make the right size’
2	(a)	(ii)	How the pattern pieces are arranged on the fabric/economical arrangement of pattern pieces on the fabric / arranging pieces or patterns to avoid waste Placing the pattern onto the fabric Some pattern lays are generated on paper which is then clamped onto many layers of fabric and cut out using a band saw. A mark if they mention ‘fabric’ and arranging / laying the pattern on it	1	Key words - arranging pattern pieces on fabric / save fabric / avoid waste Do not allow ‘designing pattern’ or reference to how the pattern will fit together. The pattern needs to relate to the tissue paper shapes not a decorative design. Not where the pattern / design will be printed
2	(b)		Any two answers, one mark each <ul style="list-style-type: none"> • Scissors • Pins • Needle • Tailors chalk/pen/pencil • Tape measure/ruler • Unpicker • Iron/ironing board 	2	Do not accept thimble or alternative types of sewing machine such as overlocker or embroidery machine Not components such as thread, cotton or zip Credit two correct answers on the same line. Not knitting needles Not sublimation printer
2	(c)		Any two points, one mark each: <ul style="list-style-type: none"> • Shaped like a body form/garment placed over it • Inflated with steam and air • Removes creases / take out creases / pressing / ironing • Shapes garment • To achieve a professional look 	2	Do not credit to clean it, remove bacteria or germs Not reference to fixing a print or design or neatening

Question		Answer	Marks	Guidance
2	(d)	<p>Any six points in a logical order</p> <ul style="list-style-type: none"> • Programme machine/input data/choose design or stitch/transfer design onto computer/scan/size design/connect machine to computer/ transfer from computer • Thread machine/set up machine/choose thread/choose colour / change foot • Reinforce fabric/use interfacing/strengthening material/stitch and tear / plastic film on top • Use ring/frame / clamp in place / attach to machine • Mark position of motif/fabric RS up/position correctly on machine(– just moved the order) / put under the machine/ line up • Start machine stitching/stitch design/machine stitch / press 'go / start' / press peddle • Change colour of threads as necessary • Monitor progress • Remove from machine/cut threads/remove reinforcement • Press • Quality check/final inspection 	6	<p>Credit information given in diagram form.</p> <p>Do not credit reference to creating the design.</p> <p>Watch for reference to transfer printing – but do credit points that relate to embroidery</p> <p>Credit more than one point per box if appropriate.</p> <p>Do not credit reference to speed.</p> <p>Not 'tell' the machine which design</p>

Question		Answer	Marks	Guidance
3	(a)	<p>One mark for correct answer</p> <ul style="list-style-type: none"> • Graphics programme – designing/checking colourways/easy editing / make or create a design / what it will look like / create a pattern or net / see 3D image / what it will look like / edit photos • Word processing programme – questionnaires/ evaluations/presenting text or information – any writing activity / check spelling / write instructions / evaluations / product analysis / write specification • Database – to store and organise information/research/model costs and production processes/interpret, calculate and presenting information / how much is needed / expenses / how many selling / sizing / analyse data 	3	<p>Question is how used, not why, so not reference to quality</p> <p>Graphics – any form of designing / logo / image, including examples. Not to add photos. Not just pictures</p> <p>Word Processing – anything to do with writing / writing progress or spider diagrams / write progress / add labels/name tag</p> <p>Data – storing data / hours worked/ calculations / performance characteristic of fibres or fabrics etc. Prices / amount to be made / analysis of numbers to be made / prices / track surveys or market research measurements</p> <p>Not – recording designs or how it is going to be made.</p>
3	(b)	<p>Any two one mark each</p> <ul style="list-style-type: none"> • Internal hard drive • External hard drive • Floppy disk • Pen drive/memory stick/flash drive/ USB pen / pen drive • Digital vault • CD/DVD • Memory card/ SDHC card 	2	<p>No reference to passwords or encrypted files</p> <p>Just 'Hard drive' can be credited once – must specify internal or external to gain two marks.</p> <p>Not just files on the computer / in a folder on the computer / on a computer</p> <p>Not types of programme</p> <p>Not chips</p> <p>Not computer memory</p>

Question		Answer	Marks	Guidance
3	(c)	<p>Any one for a mark:</p> <ul style="list-style-type: none"> • Take regular breaks/max 40 mins in an hour don't look at screen too long/look at something else • Suitable lighting • Comfortable/adjustable seating/ correct height/straight back • Correct distance from the screen/not too close • Wrist support to prevent RSI • Foot support • No food or drink/ liquid near it • Electrical safety checks/no cut or frayed wires/no loose plugs/check for green sticker • Correct temperature and ventilation • No trailing wires/wires out of the way/tube to hold wires • Reference to hygiene/washing hands • Epilepsy/use of mesh screen 	1	<p>Not just 'safe to use' – must be qualified</p> <p>Not 'check up correctly – specifics needed</p> <p>Not 'be careful of electricity'</p>

Question		Answer	Marks	Guidance	
				Content	Levels of response
3	(d)	<p>The following points may be included in the answer:</p> <ul style="list-style-type: none"> • Flexible and easily changed to meet the demands of the target market • Batches can be repeated as many times as required • Production costs are relatively inexpensive / cheaper • A variety of textile items can be manufactured although some time can be lost during the re-setting of machinery for each new product • Workers can specialise in a process in the production run – speeds up and improves quality, but can become repetitive and boring • Workers with different level of skills can be employed. • Workers have access to more flexible working conditions • Stock may need to be stored before dispatch which can lead to wastage if products do not sell • All products will be the same • Quicker – increasing production and profit • Can make more than one type of product at a time • Can bulk buy reducing costs • Reduces waste, therefore cost 	6	<p>Remember this is a banded question so vague statements such as quicker, good quality will put the candidate into the lower band. If they are explained they will move up to a higher level</p> <p>Not to do with selling more or people buying more.</p> <p>Not more sold</p> <p>Not reference to JIT – this is another production system.</p> <p>Not make products in order customers want</p>	<p>Level 1 (0–2 marks) Explanation shows a limited understanding of batch production. There will be little or no use of specialist terms. Answers may be vague and disorganised. Errors of grammar, punctuation and spelling may be intrusive. Answer may take the form of a list.</p> <p>Level 2 (3–4 Marks) Explanation shows some understanding of batch production, although these may not always be correct. There may be occasional errors in spelling, punctuation and grammar.</p> <p>Level 3 (5–6 Marks) Explanation shows a thorough understanding of batch production. Specialist terms will be used appropriately and correctly and the information will be presented in a structured format. The candidate will demonstrate accurate use of spelling, punctuation and grammar.</p>

Question	Answer	Marks	Guidance
4 (a)	<p>A maximum of 6 marks to be allocated as detailed below:</p> <p>1 mark for meeting each specification point A further 1 mark if the link to the specification is identified or explained</p> <p>Maximum of 6 marks</p> <ul style="list-style-type: none"> • Appeal – colour/colourful/ any colour labelled or shown / logo / decoration / pockets • Easy to fasten – zip, Velcro, button, poppers/press studs, toggles Not hook & eye, or anything to tie • Adaptable – zip on/off/ removable sections, inner fleece, hood, gloves <p>Further marks available if 6 not achieved above, up to the 6 maximum.</p> <p>1 mark for each construction detail given in annotation.</p> <ul style="list-style-type: none"> • Measurements or sizes given – construction (1) • Fabrics suggested (not fibres) – construction (1) • Construction details given, seams, hems, finishing methods (up to 2 marks) • Decorative techniques given, appliqué, screen printing, machine stitching etc.(up to 2 marks) <p>Can be marked in either section but not both – consider marks already awarded.</p>	6	<p>Points need to be annotated to be awarded a mark (no annotation no marks)</p> <p>Do not credit reference to the use of ‘Smart or Modern’ materials in the design as these will be awarded in part (b).</p> <p>Do not credit information shown in the design unless annotated.</p> <p>Some points could be marked in the specification point section or the construction depending on what the candidate has written/marks already awarded.</p> <p>Not reference to drawstring for hood / flap over zip</p>

Question	Answer	Marks	Guidance
4 (b)	<p>One mark for naming the Smart or Modern material or a description of what it does, one mark for the use/ benefit to the wearer.</p> <ul style="list-style-type: none"> • Kevlar – strength, protection if fall over, stab protection • Neoprene – gloves, waterproof keeping wearer dry • Elastaine – tear resistant, durable and easy to care for – easy movement • Polartec – lightweight fleece, warm but comfortable to wear as allow moisture to escape • Breathable fabrics such as Gortex or Sympatex – waterproof but allow body moisture to escape. • Photochromic dyes – change colour with light – can identify if person has been exposed to too much sun to maintain correct temperature/avoid UV exposure / fun / appeal • Thermochromic dyes – change colour with heat – can identify if person is too hot or cold to maintain correct temperature / fun / appeal • Ultraviolet detection – will indicate over exposure and add to safety • Reflective inks – minute glass balls embedded in ink printed on reflect light back – easy to see/safety • Phosphorescent materials – glow in the dark – easy to see/safety • Interactive materials – electronic technology and computers combined with fabrics, allows wearer to listen to music or phone call, tracking children via camera GPS, entertainment for wearer and safety / LED lights • Nanotechnology – manipulates individual atoms to achieve desired structure – resists spills and stains, wicks away moisture whilst retaining comfort. • Silver threads – antibacterial qualities (not to prevent colds) 	4	<p>Not Nomex – inappropriate</p> <p>No need to explain how applied, just what it does</p> <p>Not micro-encapsulation – not appropriate</p> <p>Waterproof is not enough to describe Gortex or Sympatex – it must be breathable as some fabrics are waterproof but not Smart or Modern. The description for these fabrics must include reference to breathable.</p> <p>Teflon is a finish not a modern material.</p> <p>Not aesthetic points</p> <p>Must name or describe a Smart or Modern material to gain marks for the benefit</p>

Question		Answer	Marks	Guidance
4	(c)	<p>Any two, one mark each:</p> <ul style="list-style-type: none"> • Check fabric for faults before cutting • Check manufactured items are fault free and a standard size / zips work / correctly inserted / buttons fit buttonholes • Check accuracy of dimensions and all tolerances • Check manufactured items are securely attached / no loose components / loose bits • Check manufacturing processes – seams are correct width/seam allowance • Check quality of stitching/size of stitch/tension/thread / no loose threads (at the end of seams or hems) • Check no holes in seams / seams secure • Check hem level • Check hem securely stitched • No pins / sharp objects 	2	<p>Not fabric testing or qualities</p> <p>Must be manufacturing</p> <p>Not 'dye will not run' or irritate child's skin</p> <p>Any reference to stitching must be qualified – not just 'all stitching correct'</p> <p>'Holes' needs to be qualified – in fabric or seams.</p> <p>Not just 'do all the features work'</p> <p>Not 'no sharp edges'</p>

Question		Answer	Marks	Guidance
5	(a)	<p>Any five points.</p> <ul style="list-style-type: none"> • Make up dye bath/water with pigment and mordant / mix dye • Follow formula/recipe to make up the dye bath/instructions/weigh ingredients/measure water/use computer/laboratory/no lumps • Correct temperature • Use correct dye for fibre/fabric • Wash fabric/clean/remove impurities/stains • Damp fabric • Weigh fabric/amount of fabric to be dyed must be known/correct size of container/not too much fabric • Ensure all fabric comes into contact with the dye/mix/agitate/stir/no creases or folds • Rollers are used – (jigger system) to pass the flat fabric through the dye and also the fabric is squeezed between two rubber coated rollers to distribute dye evenly • Jigger system/winch system/jet system / continuous dyeing – credit if named • Specification of time in dyebath / or for the specified time (not 'just for a while) / leave for a few hours / overnight / • Allow to dry • Wash / rinse • Fix colour/heat/set/fixing agent/salt 	5	<p>Information can be in notes or diagrams, but do not credit the same information twice.</p> <p>This is an industrial method – not a classroom method. Dye is not 'put in a tub' or 'dip in the dye'</p> <p>Not reference to H&S as in later question</p> <p>Not reference to use of a machine or adding dye.</p> <p>Do credit diagram of one of the methods. If the diagram is well drawn and it is clear what the process involves it can be credited without annotation.</p>

Question		Answer	Marks	Guidance
5	(b)	<p>Any one, one mark</p> <ul style="list-style-type: none"> • More vibrant colours / bright / bold / more colourful stronger / brighter • Colour can be reproduced accurately / right colour every time • wider range of colours available / more variety • more effective on manufactured fibres • Easier to use 	1	<p>Not prettier</p> <p>Not good for the environment unless qualified</p> <p>Not does not fade as much / colour stays longer / more colourful / does not run / fade/ not just 'better colour'</p> <p>Not 'less toxins'</p> <p>Not quicker</p>
5	(c)	<p>Any one advantage</p> <ul style="list-style-type: none"> • dry faster • reduces need for ironing / less creasing / crumpling • saves energy – low temperature wash • good for the environment as saves energy <p>Any one disadvantage</p> <ul style="list-style-type: none"> • strength of the fabric reduced / weakens the fabric (Not damages) • abrasion resistance reduced • increases cost of the product 	2	<p>Do not accept – 'makes it easier to care for' or 'easier to wash'</p> <p>Not 'does not last as long'</p> <p>Not stain resistant</p> <p>Not reduces the need for washing</p> <p>Not colour may fade</p> <p>Not has to be hand washed</p> <p>Not 'bad for the environment'</p> <p>Not another process means more co2 – benefits of reduced temperature washing, drying and ironing.</p> <p>Not 'may wash off'</p> <p>Not 'wash at medium temperature'</p> <p>Not increases / improves the quality</p>
5	(d)	<p>Any one answer for one mark</p> <ul style="list-style-type: none"> • Buttons and button holes/loops – accept just buttons • Zip • Press studs/poppers/ginger snaps • Velcro • Ties/laces/ribbon 	1	<p>Do not credit hook and eye, toggles, parachute clips</p>

Question		Answer	Marks	Guidance
5	(e)	<p>Any three answers, one mark each</p> <ul style="list-style-type: none"> • Take to charity shop/car boot/flea market • Cut up and make into something new/re-model but must name product eg curtains/toile/clothing/garments/cushions • Re-use components for something else • Use for appliqué/patchwork/rug rug/stuffing other products • Use for cleaning cloths/rags/scraps • Use as a picnic blanket/dust cloth/bike cover/throw • Re-dye/bleach/add decoration • Give/sell to a friend/family member/someone else • Take to clothes bank or bin/ recycling company or centre • Break fabric down and make into a new fabric / another fabric / shredded and treated to make a new fabric • Select decorative area and re-use as a picture 	3	<p>Must be three different ways of recycling or using the bedding</p> <p>Do not accept re-use without explanation</p> <p>Do not accept use it for something else / another product unless item specified</p> <p>Do not credit two examples of what it could be made into</p> <p>Candidates may link answers to primary / secondary / tertiary recycling</p> <p>Do not credit reference to repairing and continuing to use for the same purpose.</p>

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