

Design and Technology (Textiles Technology)

General Certificate of Secondary Education

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

Mark Scheme for January 2011

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Question	Answer	Marks	Additional Guidance
1 (a)	<p>One mark for a correct answer for each tool. Mark is for the use, not the name:</p> <ul style="list-style-type: none"> • Tailors pencil – drawing on fabric/marking fabric/markings stitching line • Pins – to temporarily hold fabric together/to pin fabric/to hold fabric ready for stitching/to hold fabric ready for machining/to hold fabric on a manikin • Tape measure – to measure fabric/to measure • Unpicker – to unpick stitching/to undo mistakes/to cut button holes/undo stitching 	[4]	<p>Do not accept 'unstitching', or 'untacking' for use of unpicker.</p> <p>Do not accept 'to tack' for pins.</p>
(b)	<p>Any four points, one mark each:</p> <ul style="list-style-type: none"> • Right or left handed • Suitable blade length – long or short must be qualified • Suitable weight • Guarantee • Suitable price/value for money/cost • Comfortable handles/right size handles/fit round fingers/size of handles • Stainless steel blades • Bevelled/serrated blades/pinking sheers • Sharpness/sharp/can be sharpened • Not damaged/blunt/loose screw/not faulty • Suitable for job – qualified – cutting fabric/thread/paper/fabric cutting scissors/pointed for embroidery/curved blade • Smooth action/easy to open and close/not stiff • Good brand name/good make • Measuring marks on blades. 	[4]	<p>Do not accept:</p> <ul style="list-style-type: none"> Big handles patterned blades flat blades in line blades kite mark or reference to safety easy to use clean strong too big or too small unless linked to use type of material <p>One word answers are acceptable.</p> <p>'Cut fabric' is only acceptable as qualification for 'suitable for use'.</p>

Question		Answer	Marks	Additional Guidance
	(c)	<p>Any two answers, one mark each:</p> <ul style="list-style-type: none"> • Removing wax from batik • Attaching iron–on interfacing/melt one fabric onto another/fuse fibres • Applying bondaweb/wondaweb • Attaching (appliqué) motif/iron on name tags/stick on decoration • Pressing open seams • Pressing fabric in place rather than pinning/iron crease you are going to sew • Fixing dye/printing inks. • Transfer drawings/images/design onto fabric • Make folded fabric flat/press pleats • Press hems • Press a crease in trousers • Iron fabric dry • Shape felt 	[2]	<p>Do not accept: Pressing fabric Making fabric flat/straight Neat and tidy</p>
	(d) (i)	<p>Any answer, one mark:</p> <ul style="list-style-type: none"> • The European/Europe safety standard symbol • Guarantees quality procedures have been applied • Manufacturer's declaration • Complies with European Health and safety requirements • Complies with European environmental protection legislation • Indicates that the product can be sold in a European country • Ensures free movement of the product within Europe – 28 countries • If found to be used incorrectly, product can be withdrawn from the market. 	[1]	<p>Key words to look for are in bold</p>

Question		Answer	Marks	Additional Guidance
	(ii)	Any answer, one mark: <ul style="list-style-type: none">• Any clothing products that claim to protect the wearer – work or leisure clothing• A toy – named or not	[1]	If a garment is used as an example it must be named and be an item of protective clothing.
		Total	[12]	

Question	Answer	Marks	Additional Guidance
2 (a)	<p>Any one, one mark:</p> <ul style="list-style-type: none"> • Straight stitch/running stitch/back stitch • Chain stitch/lazy daisy stitch • Herringbone • Blanket stitch/buttonhole stitch • French knot/bullion • Couching • Stem stitch • Cross stitch. • Satin stitch • Feather stitch • Fly stitch <p>Do not allow zig-zag.</p>	[1]	
(b)	<p>Any two, one mark each:</p> <ul style="list-style-type: none"> • Beads • Sequins • Shisha mirrors • Ribbon • Braid • Ric rack • Lace • Buttons • Fringing • Googley eyes/plastic eyes/plastic nose/claws • Bells/squeaker • (appliqué) motif – accept just motif • Diamante 	[2]	Do not accept a zip as a decorative component

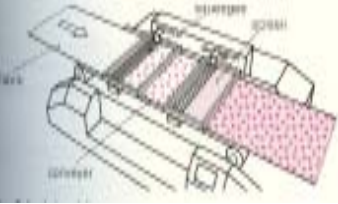
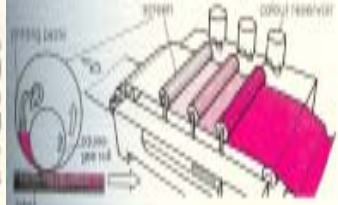
Question	Answer	Marks	Additional Guidance
(c)	Any one, one mark: <ul style="list-style-type: none"> • Sheep • Goat • Rabbit • Llama • Camel • Alpaca • Vicuna • Yak 	[1]	Do not accept fibres from cats and dogs. Do not accept fleece.
(d)	Any two points mentioned in correct order, one mark each: <ul style="list-style-type: none"> • Scales on the surface of the fibres are tangled together • A 'web' of fibres is created • Treated with alkaline solution/soap/chemical solution • Heated/hot water • Pressure applied to the web/press with iron or rolling pin/press • Mechanical action applied to the web – to tangle the fibres/matted • bonded 	[2]	Do not credit Twisting to make a yarn Glue If a suitable method of applying pressure is described, give a mark. If a relevant diagram to describe a point, award a mark.
(e)	* Level 1 (0–2 marks) Basic explanation, showing limited understanding. There will be little or no use of specialist terms. Answers may be ambiguous or disorganized. Errors of grammar, punctuation and spelling may be intrusive. Level 2 (3–4 marks) Adequate explanation, showing some understanding. 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.		The technical content of the answer is more important than the way it is written.

Question	Answer	Marks	Additional Guidance
	<p>Level 3 (5–6 marks) Thorough explanation showing a clear understanding. 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>Points that may be included:</p> <ul style="list-style-type: none"> • Fabrics made directly from fibres – no yarn made reducing time needed to make the fabric and one stage of manufacture • Fibres from old products can be re–cycled and re–used reducing costs and helps the environment • Reduced energy consumption as fewer processes • Fabrics do not have a grain so pattern pieces can be fitted together like a jigsaw reducing waste and therefore using less fabric • Fabrics do not fray so the seam allowance can be reduced, using less fabric • Edges do not need to be neatened, removing a process during manufacture and speeding up the process • Products can be re–cycled at the end of their usefulness. • Fewer people are employed as it is a simpler process. <p>NB: Candidates can gain maximum marks if the only address one of the issues.</p>	<p>[6]</p>	<p>Do not credit reference to performance characteristics or resources such as machinery.</p>

Question		Answer	Marks	Additional Guidance	
3	(a)	<p>Any three reasons, one mark each:</p> <ul style="list-style-type: none"> • Hardwearing /strong/long lasting • Lightweight - but must relate to carrying • Waterproof/non absorbent/stain resitant • Firm fabric/will not stretch • Will not rot if wet • Easy to print on/smooth fabric • Same on both sides – good for a bag • Resistant to acids and alkalines – in some foods • Can be washed – if foods spilt. 	[3]	<p>Do not credit easily dyed or cheap or crease resistant.</p> <p>Do not accept colourfast or quick drying.</p>	
	(b)	(i)	<p>Anyone, one mark. Must be a functional not decorative improvement:</p> <ul style="list-style-type: none"> • Lengthen handles • Widen handles/thicker • Add pocket • Add gusset/box bottom • Add wheels • Add feet • Add a fastening at the top/zip (on it's own) • Make handles go all the way under the bag • Widen handle at top • Padded handles/thicken • Strengthen handle/bag/make stronger • Change size – bigger or smaller 	[1]	

Question	Answer	Marks	Additional Guidance
	<p data-bbox="275 209 315 240">(ii)</p> <p data-bbox="371 209 1133 268">Reason must link with modification, one mark for a shallow reason, two if detailed:</p> <ul data-bbox="371 304 1151 1171" style="list-style-type: none"> <li data-bbox="371 304 1151 368">• Lengthen handles – can be carried on shoulder which may be more comfortable <li data-bbox="371 376 1151 440">• Widen handles – more comfortable to carry as weight distributed better <li data-bbox="371 448 1151 480">• Add pocket – to hold purse/phone/keys so easy to find <li data-bbox="371 488 1151 552">• Add gusset – bag will hold more and products will not be squashed – easier to pack <li data-bbox="371 560 1151 624">• Add wheels – so can be pulled along – easier than carrying <li data-bbox="371 632 1151 695">• Add feet – to protect the bag when placed on the ground if user needs a rest <li data-bbox="371 703 1151 767">• Add a fastening – stop things falling out – adds security, keeps contents dry <li data-bbox="371 775 1151 871">• Make handles go all the way under the bag – handle less likely to rip off when in use – lengthens life of the bag <li data-bbox="371 879 1151 943">• Widen handle at top to make it more comfortable to carry on the shoulder <li data-bbox="371 951 1151 1015">• Padded handles – to make it more comfortable to carry as will not dig in to hands. <li data-bbox="371 1023 1151 1054">• Strengthen – carry more, last longer <li data-bbox="371 1062 1151 1126">• Make bigger – fewer bags carried, carry bulky or large items <li data-bbox="371 1134 1151 1171">• Make smaller – easier to carry when full, fold up smaller for transport, easier to store 	[2]	Do not accept change straps or change handles unless qualified.

Question	Answer	Marks	Additional Guidance
(c)	<p>Any six points in a logical order. Information can be in notes or diagram: Process should be outlined using notes and diagrams and cover the following points in a logical sequence. Any six, in correct order, one mark each:</p> <ul style="list-style-type: none"> • Wash fabric (to remove finish/stains/ensure clean/no stains) • Description or drawing of equipment used • Description of making a stencil/areas of the screen need to be blocked off to prevent the dye going through. Can be done using paper stencils or a light sensitive chemical, or etch away an insoluble polymer • A separate screen or stencil if used, is needed for each colour – two in this case – or wash the screen between colours • The fabric needs to be laid on a flat surface/table • Secured • Print light colours first • Place screen/frame/mesh on top of the fabric • Stencil in between screen and fabric if that method is being used • Pour ink/dye along one edge/ end of the screen • Move the dye/ink backwards and forwards across the screen using the squeegee/action of the squeegee (accept description of squeegee – ‘plank ‘ ‘piece of wood’) • Lift screen/peel off stencil • Repeat for second colour/print second part/repeat of some stages • Mention of registering/aligning the colour • Fix colour, usually using heat 	[6]	<p>Do not credit reference to allowing the fabric to dry between colours.</p> <p>Do not credit reference to drawing the design.</p>

Question	Answer	Marks	Additional Guidance
	<p>Industrial method acceptable, including carousel printing.</p> <p>Flat screen printing</p> <p>The fabric is held firm and flat on a conveyor blanket by a tacky adhesive. The conveyor moves intermittently over the printing table, one screen width at a time. When the fabric stops, the screens are lowered onto the printing table, printing paste is supplied to the screens and forced through the patterned areas by a squeegee blade or roller. The screens are lifted and the next cycle begins with the fabric moving forward one further screen width. Flat screen printing is used for about 18% of printed fabric production.</p>  <p>The diagram shows a cross-section of the flat screen printing process. A conveyor belt moves a fabric blanket over a printing table. Multiple screens are positioned above the table. Printing paste is applied to the screens and forced through the patterned areas by a squeegee blade or roller. The screens are then lifted, and the fabric moves forward one screen width for the next cycle.</p> <p>Rotary screen printing</p> <p>The rotary screen system is a further development which allows continuous production. The printing paste is pumped at a defined rate from the reservoirs to the insides of the cylindrical screens, from where it is continuously squeezed through onto the moving fabric by a blade or roller squeegee. Rotary printing has almost 80% of the market and is growing.</p>  <p>The diagram shows a cross-section of the rotary screen printing process. Printing paste is pumped from reservoirs into cylindrical screens. The paste is continuously squeezed through the patterned areas by a blade or roller squeegee onto a moving fabric. Labels include 'PRINTING PASTE', 'SCREEN', 'COLOR RESERVOIR', 'SQUEEGER', and 'CONVEYER'.</p>		

Question	Answer	Marks	Additional Guidance
4 (a)	<p>Any two, one mark each:</p> <ul style="list-style-type: none"> • Inexpensive to produce/easy to make/quick to make/not too many colours • Durable /hardwearing /long lasting • useful • small/easy to carry/reference to size/size • appealing /fun/attractive/eye catching • Unisex/no gender bias • Wide target market/not targeted at a specific age group or group of people • Safety • Good quality 	[2]	<p>Do not accept reasons for the use of promotional products Do not accept logo/company colour/company name/address. Do not limit the target market.</p> <p>Do not credit reference to environmentally friendly/sustainable/recycled fabrics.</p>
(b)	<p>A maximum of 8 marks to be allocated as detailed below:</p> <ul style="list-style-type: none"> • Colour indicated [1] • Measurements or sizes given [1] • Fastenings show [1] • Promote the store eg Logo/name of store/contact details for store/corporate colours • Pockets/compartments/straps or elastic to hold items [1] • Fabrics (wadding acceptable) suggested (not fibres)/woven/knitted/ bonded or non-woven/micro-encapsulation [1] • More than one sketch included – detail of a specific part [1] • Construction details given, seams, hems, finishing methods [up to 2 marks] • Decorative techniques given, appliqué, screen printing, machine stitching/incorporation of electronics/patchwork /beading/digital printing/sequins/sublimation printing/quilting /hand stitching/top stitching/CAM embroidery etc. <p>[up to 2 marks]</p>	[8]	<p>Do not accept pencil shading as a mark for colour, must be a block of colour.</p> <p>Printing must be qualified.</p>

Question	Answer	Marks	Additional Guidance
(c)	<p>Two for a detailed explanation, one if shallow:</p> <ul style="list-style-type: none"> • Logo – recognise the company in future • Phone number/e–mail/address/contact details • Something useful so always carried – will always have company in mind • Something others would ask about/stands out – promote the company, people ask about it. • Use of corporate colours/corporate styling/ trend/image – attracts attention – easily recognisable. • The item designed reflect the products sold in the store, attracts attention so people ask where it came from 	[2]	Either one feature of the design well explained for two marks, or two features identified with one explanation for each.
	Total	[12]	

Question	Answer	Marks	Additional Guidance
5 (a)	<p>Any three advantages explained, one mark for a shallow explanation, two if detailed:</p> <ul style="list-style-type: none"> • Designs can be developed and edited easily saving time and money. They don't have to be re-drawn each time – can be re-sized and scaled. Accept reference to pattern pieces and grading • Designs can be rotated, flipped, repeated, saving time and improving accuracy. Designs can be copied and they will be identical • Banks of images can be accessed e.g clip art, to give initial ideas to develop rather than starting from scratch • Textures and fabrics can be mapped onto designs to give a realistic image of the product – alternatives can be shown quickly. • Colourways can be tested quickly and easily, no need to redraw. Colours can be filled in at the click of a mouse rather than colouring by hand • 3D views can be generated giving a better idea of the finished product in a short space of time • Designs can be e-mailed to clients giving quick communication and feed back speeding up the process • The amount of paper used is reduced contributing to the 6Rs and reducing costs • Prototypes can be generated quickly and easily to show to clients • Information can be downloaded directly to CAM machines speeding up the making process and improving quality e/g pattern lays (reduce waste), sublimation/transfer printing (accuracy and quality) • Storage space is reduced and organisation may be improved. Less space could mean reduced rental costs • Quality is improved/more accurate and errors reduced reducing costs. More realistic designs are achieved. 	[6]	<p>The marks here are not for identifying the process carried out using CAD, they are for explaining the advantages of using CAD for that process.</p> <p>As the question asks for an explanation, one word answers are not credited.</p> <p>Do not credit 'data is not lost'.</p>

Question	Answer	Marks	Additional Guidance
(b) *	<p>Level 1 (0–2 marks) Basic explanation, showing limited understanding of the issues. There will be little or no use of specialist terms. Answers may be ambiguous or disorganized. Errors of grammar, punctuation and spelling may be intrusive.</p> <p>Level 2 (3–4 marks) Adequate explanation, showing some understanding of the issues. 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 (5–6 marks) Thorough explanation showing a clear understanding of the issues. 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>		Points made to answer the question are more important than the quality of English.
	<p>Answers may include the following points;</p> <ul style="list-style-type: none"> • Fabrics and components can be bought in bulk reducing costs • Pattern lays will be more economical as pieces from different sizes can be fitted together so less fabric is wasted • The use of CAD/CAM speeds up the process and reduces mistakes • Operators become skilled in one particular task so increase the speed and quality of production • Employing a large number of people allows for division of labour, and differentiated pay scales reducing the wage bill. Less skilled workers can be employed to do simple tasks and be paid less. 		Do not credit reference to transportation or distribution of resources or products.

Question	Answer	Marks	Additional Guidance
	<ul style="list-style-type: none">• Specialized machinery is used making processes quicker, increasing production and reducing costs.• Sewing machines do not need to be re-threaded or the setting changed as often, speeding up the making process, reducing cost• Left over resources such as dye and thread can be stored and used for the next batch of products.	[6]	

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