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Mark Scheme (Results)

Summer 2015

Pearson Edexcel
GCSE Design & Technology: Textiles
5TT02/01

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Question Number	Answer	Mark
1 **1.7 Comp's, mat's, equipt & proc's**	**D Fastening**	**(1)**
Question Number	Answer	Mark
2 **2.3 Layplanning & cutting**	**C Notch**	**(1)**
Question Number	Answer	Mark
3 **1.3 Synthetic polymers fibres**	**B Nylon**	**(1)**
Question Number	Answer	Mark
4 **2.6 Printing processes**	**A Batik**	**(1)**
Question Number	Answer	Mark
5 **6.1 Minimising waste prod**	**C Materials and energy**	**(1)**
Question Number	Answer	Mark
6 **5.3 CAD/CAM Technology**	**C The sizing up or down of pattern pieces**	**(1)**
Question Number	Answer	Mark
7 **1.1 Natural fibres**	**D Strong**	**(1)**
Question Number	Answer	Mark
8 **2.5 Finishing processes**	**B Biostoning**	**(1)**
Question Number	Answer	Mark
9 **1.6 Modern materials**	**D Polartec**	**(1)**

Question Number	Answer	Mark
10 **1.4 Yarns**	**B Strands of yarn twisted together**	**(1)**

<table>
<tr><td>Question Number</td><td>Answer</td><td>Mark</td></tr>
<tr><td>11. (a)
1.7
Comp's, mat's, equipt and proc's</td><td>
<table>
<tr><th>Name</th><th>Use</th></tr>
<tr><td>(a)(i) Hook(s) and eye(s)</td><td>To open and close/ to fasten, to decorate</td></tr>
<tr><td>CAD/CAM Embroidery machine</td><td>(a)(ii) To create (decorative) stitches/ logos

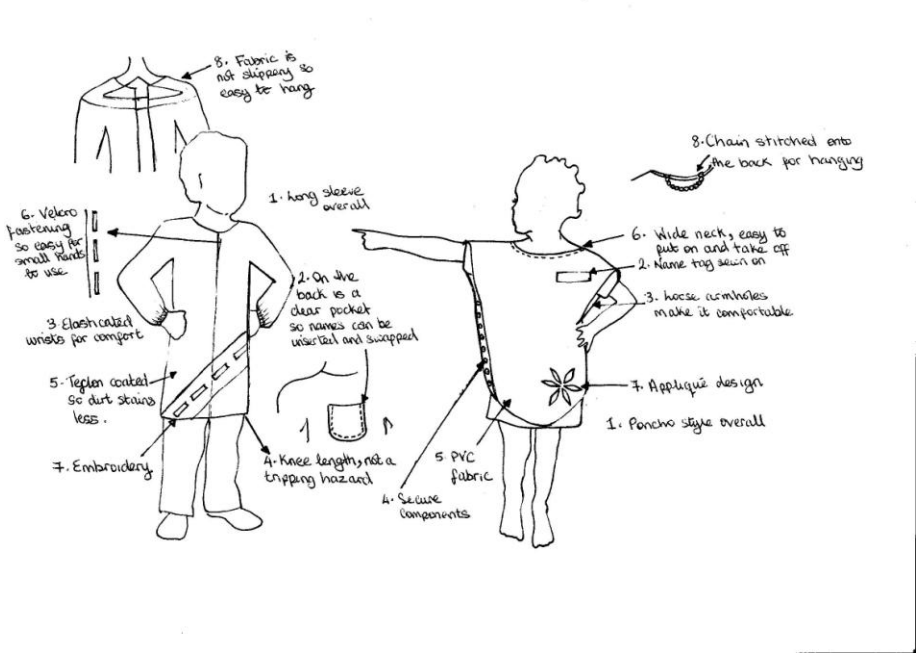
Automated sewing</td></tr>
<tr><td>(a)(iii) Tracing Wheel</td><td>To transfer markings onto fabric, to use with carbon paper or tailor's chalk</td></tr>
<tr><td>(a)(iv) Tjanting</td><td>A traditional tool used to apply hot wax to fabric</td></tr>
</table>
4 x 1
</td><td>(4)</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Question Number</td><td>Answer</td><td>Mark</td></tr>
<tr><td>11 (b) (i)
2.7
Decorative & stitch techniques</td><td>Technique:
• quilting (1)
1X1</td><td>(1)</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Question Number</td><td>Answer</td><td>Mark</td></tr>
<tr><td>11 (b) (ii)
2.7
Decorative & stitch techniques</td><td>Any statement from the following:
• consistent spacing between each line of stitching (1)
• correct tension/ length of stitching so there is not any eg, puckering, bunching (1)
• even of stitching (1)
• visual check for missed stitches (1)
• matching /contrasting coloured thread (1)
1X1</td><td>(1)</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Question Number</td><td>Answer</td><td>Mark</td></tr>
<tr><td>11 (b) (iii)
2.1 Scale of production</td><td>Any one description from the following statements:

Why
To insulate the hand from heat. (1)
or
To protect the hand from flames/ burns. (1)</td><td>(2)</td></tr>
</table>

	How • apply a flame-retardant finish/ceramic coating (1) • Nomex (1) • Wadding/ felt (1) • laminated with aluminium (1) 2X1	
Question Number	Answer	Mark
11 I (i) 1.5 Fabrics	Any response from: • bias (1) • cross-grain (1) 1X1	**(1)**
Question Number	Answer	Mark
11 (c) (ii) 1.5 Fabrics	Any reason from: • it stretches/ has give (1) goes around curved edges well/easy to manipulate (1) • does not fray/ good wear and tear (1) due to the direction where no single thread is exposed (1) 2X1	**(2)**
Question Number	Answer	Mark
11.(c) (iii) 1.3 Synthetic polymers	**Two** characteristics from: (plain weave) • strong and firm/ stable (1) • hard wearing (1) • smooth surface (1) • easy to print onto (1) 2X1	**(2)**
Question Number	Answer	Mark
11. (c) (iv) 1.2 Natural polymers	**One** benefit to the environment from: • Biodegradable (1) **as it** is a natural/man-made fibre made with wood pulp (1) • Sustainable/recyclable textiles/closed loop process (1) **that** recover or decomposes all solvents and emissions/ economical in use of natural resources (1) *Not just eco-friendly on its own without justification* 1X2	**(2)**
Question Number	Answer	Mark
11. (c) (v) 1.2 Natural polymers	**One** properties and matching reasons from: • **Property:** durable (1) **Reason:** very strong when wet and dry (1) • **Property:** versatile (1)	

	Reason: very fine fibres can be made suede-like or silky smooth (1) • **Property:** wicks away moisture (1) **Reason:** keeps the skin dry and comfortable (1) • **Property:** crease-resistant (1) **Reason:** easy-care so will need very little to no ironing (1) • **Property:** anti-bacterial / breathable (1) **Reason:** good moisture management/ 50% greater absorption than cotton (1) 2X1 *Accept any logical combination of above points.*	**(2)**
Question Number	Answer	Mark
11 (d) **1 Materials and components**	Any information from the following: • **internationally recognised** symbol (1) of **cotton** (1) • identifies **(shows)** textile products (1) made from **pure cotton** / **does not contain** any blended fibres (1) • quality assurance (1) so consumers feel safe that it is pure/ suitable (1) *Accept logical combination of above points* 1x2	**(2)**
Question Number	Answer	Mark
12 **4.3 Designing products. Application of K&U**	**Design idea 1** Candidates may answer any specification point in either graphical form or by annotation. **No marks are awarded for the quality of graphical communication.** 1. **Consist of one garment (1)** should cover approx ¾ of the body: eg dungarees, overall, apron etc This can be visually attributed. 2. **Easy to identify (1):** clearly identified pieces of clothing, eg tags, permanent marker 3. **Be comfortable to wear (1):** eg not tight or restrictive around neck, armholes e.g. wide, raglan, wrists, **stretchy/ knitted fabric**, fabric made from soft fibres, breathable fabric	

	4. **Be safe to wear (1):** eg entrapment by hood or neck cords, smooth, secure components, places where fingers can get caught, not too long, trailing parts to trip over, no trailing parts to get caught on things, obscured views or toxic dyes 5. **Be easy to care for (1):** eg wipe clean, easy to iron, suitable fabrics eg PVC, Teflon coating, cotton/ polyester, easy to wash fabrics that can be washed at low temperatures, cotton that can be tumble-dried, requires less/no ironing, woven & waterproof nylon (ripstop) 6. **Be easy to put on and take off (1):** eg uncomplicated design, large head openings, **stretchy fabric**, tie opening, use of Velcro, zips, poppers, no back fastening 7. **Include decorative techniques (1):** eg appliqué, embroidery, printing methods eg heat transfer, screen printing, trims and frills 8. **Be easy to hang or store (1):** eg loops, chain, not bulky, so easy to fold, stack (cannot be visual) *Credit can be given only once and in one place: eg **stretchy fabric**. Swapped location on something credited on 1st product is not permissible for 2nd.* Example of candidate response:	**(8)**

	 **Design idea 2** Marks for design idea 2 can only be awarded where specification points are resolved differently than in design idea 1. Example of candidate response: **8X1**	**(8)**

Question Number	Answer	Mark
13 (a) 1.1 Natural polymer	**Two** characteristics and linked justification from: • **Characteristic:** absorbent(1) **Justification:** dyes well so strong colours can be achieved (1) • **Characteristic:** soft/ smooth fibre(1) **Justification:** so feels good against the skin (1) • **Characteristic:** cool/ warm (1) **Justification:** breathes - allows moisture vapour transport (wicks) from skin / absorbs 30% of its weight without feeling damp/can feel cool as the moisture rate increases/ contains moisture so no static (1) • **Characteristic:** lustre/luxurious appearance (1)	

	Justification: It reflects light and has a natural sheen/ shows high quality, expensive fibre (1) • **Characteristic:** drapes well (1) **Justification:** so attractive/allows for ease of movement (1) • **Characteristic:** elastic (1) **Justification:** it resists creasing, will look presentable (1) *Accept any logical combination of above points, without duplication* 2x2 2x2	**(4)**
Question Number	Answer	Mark
13 (b) **2.4** **Joining and finishing techniques**	**One** description from the following: • small pieces of fabric to sew /difficult to turn through as a tube (1) so quicker & easier access (stitch) on top (1) • strengthens (1) as rows of stitches create extra reinforcement (1) • decorative (1) as stitching looks interesting/ parallel (1) 1X2	**(2)**
Question Number	Answer	Mark
13 (c) **7.1** **Moral, social and cultural issues**	**One** social issue explained from the following: • **colour** has **special significance** (1) because in Oriental culture it could show, for example, wealth (1) • **animals represented/ pattern/ symbols** as characters are **used in** writing the **design** (1) be sure that it could not translate to something offensive (1) • **length may be too revealing** (1) **so** may not be considered modest (1) *(not safety)* • **fabric is expensive** (1) so socially not everyone finds it affordable/ accessible (1) • **fabric** choice **could be thought of as cruel** (1) because silkworms do not survive the process (1) 1x2	**(2)**
Question Number	Answer	Mark
13 (d) **3.1** **Analysing products**	1 mark- brief mention of why the dressing gown is versatile 2 marks – a developed explanation of why the dressing gown is versatile • **reversible gown and belt** (1) so they can choose the side they wish to wear for aesthetic/ laundering reasons(1)	

	• **freedom of movement** (1) wide sleeves give comfort (1) • **seasonal wear** (1) because silk can be worn in different conditions, eg cool or warm (1) 2X1	**(2)**

Question Number	Answer	Mark
***13 (e)** **3.1** **Analysing products** **QWC** **Sustainablity and scale of production**	**Discussion to address the following issues:** **Scale of production and cost and also environmental issues:** **How does the design allow for environmental considerations?**	**(6)**

Product A	**Product B**
Environmental	
Easy to recycle fibres as it has one type of natural fibre content that is renewable and biodegrade. Has been made by organic means so less impact on the environment in raw material stage. Natural colour used so no dye is needed, less water polluting. Biopolishing - where enzymes are used to create smooth and comfortable fabric and leave it well prepared for printing. Simple geometric shapes of pattern pieces allow for close pattern layout and layplans which are very economical. Less going to landfill. Decoration is minimal and transfer printed which does not give out any effluents, just a small usage of ink and energy.	Acrylic fibres are synthetic and so non-renewable and hard to recycle as they do not biodegrade. Its manufacture involves highly toxic substances that require careful storage, handling and disposal. Fibres can be produced in a closed environment so that the fumes can be cleaned, captured or otherwise neutralized before discharge into the atmosphere. Factory energy use. Yarns are blended which also makes separation & recycling impossible. Large and oddly shaped pattern shapes make lay planning of fabric uneconomical. Hand applied decoration and construction likely to be produced abroad and incurs global transportation.
Scale of Production and cost	
Transfer printing - fast decorative	Hand embroidery – slow and highly skilled

	process Simpler pattern piece shapes – more cost-effective Difficult to produce colour and fabric quality, due to natural/slash/fibre issues Overlocked finished edges improve speed of manufacture Complex machinery needed, eg overlocker and transfer printer	workforce Complex pattern pieces which result in excess waste, lining fabric and layplan waste unavoidable Nap-velvet - difficulty with layplan and cutting More likely to be made in smaller quantities Lining adds to production time No complex machinery needed – only lock-stitch machine needed		

Level	Mark	Descriptor
	0	No rewardable material
Level 1	1-2	Candidate identifies the area(s) of comparison with no development OR identifies and develops one area. Shows limited understanding of the comparison. Writing communicates ideas using everyday language but the response lacks clarity and organisation. The candidate spells, punctuates and uses the rules of grammar with limited accuracy.
Level 2	3-4	Candidate identifies some areas of comparison with associated developments showing some understanding of the comparison. Writing communicates ideas using D&T terms accurately and showing some direction and control in the organising of material. The candidate uses some of the rules of grammar appropriately and spells and punctuates with some accuracy, although some spelling errors may still be found.
Level 3	5-6	Candidate identifies a range of areas of comparison with associated developments showing a detailed understanding of the comparison. Writing communicates ideas effectively, using a range of appropriately selected D&T terms and organising

		information clearly and coherently. The candidate spells, punctuates and uses the rules of grammar with considerable accuracy.

Question Number	Answer	Mark
14 (a) **2.5** **Finishing processes**	State from **two** of the following: • adhesive (1) • heated (1) • stitched (1) 2x1	**(2)**
14 (b) (i) **1.5 Fabrics**	**One** stitch or combination stitch from the following: • knit (1) • purl (1) • cable (1) • rib (1) • stocking (1) • garter (1) or any other appropriate response 1x1	**(1)**
Question Number	Answer	Mark
14 (b) (ii) **1.5 Fabrics**	From the following: • flatbed • circular 2x1	**(2)**
Question Number	Answer	Mark
14 (c) **1.5 Fabrics**	Description from one of the following: • needle felt machinery uses consistent pressure (multiple) barbed needles to (1) hook through/ trap un-spun fibres in place (1) • hand punched barbed needles (1) apply fibres onto fabric (1) • knitted or non woven fabric/ fabrics with open structure (1) make it easy for fibres to hook through (1) 1X2	**(2)**
Question Number	Answer	Mark
14 (d) **5.1** **ICT**	Clipart libraries: • can be edited/ modified(1) manipulate images to suit different purposes (1) • huge range of pre made images (1) more likely to find suitable image/templates (1)	**(2)**

	• legal free sourced images (1) images do not require additional registration (1) 1X2	

Question Number	Answer	Mark
14 (e) **5.1 ICT**	CD ROMs advantages: • hold huge amounts of data/high storage capacity (1) so less physical/paper storage needed (1) • they can store audio, video, graphics, text and programs (1) a wide variety of communication techniques can be used (1) • compatible with most/all systems (1) universally accessible (1) • read only memory means that others cannot change or alter information (1) high reliability/so data is protected (1) • postal ability/for remote accessibility (1) as not everyone is connected to fast internet services (1) 1x2	**(2)**
Question Number	Answer	Mark

Question Number	Answer	Mark
14 (f) **2.6 Printing Processes**	Any disadvantage from: • slow/time-consuming hand method (1) gutta takes time to dry, before paint can be applied /therefore expensive to produce (1) • the work requires framing (1) so can restrict the design size • lack of controlled outcome (1) e.g. salt placement effect does not produce **identical** results (1) *Allow for mixed responses* 1x2	**(2)**

Question Number	Answer	Mark
14. (g) **7.1 Moral, social & cultural issues** **QWC**	Any issues discussed from the following: Client • They can see the designer's ideas clearly (eg pattern pieces, colour, and pattern in 2D) and adjust/ modify to instantly see outcome changes 3D. Real-time changes available • Saves on materials/ components as the drawing up only	**(6)**

	needs a computer package or drawing skills • Saves money as the pattern pieces can be efficiently lay planned reducing material use and product cost • Images can be scanned in and modelled, especially useful for large items such as soft furnishing as the product and environment can be viewed • Physical characteristics eg virtual draping simulation (based on mathematical and physical algorithms in real time) • Databases can be created, stored and drawn from. Detailed models can be customised then offers true to life garment modelling Faster product design and production must be qualified. Consumer • Knows that something has been thoroughly tested as this often carries a label certifying it • Customer satisfaction, less returns • Companies can explain the tests and increase consumer confidence • Virtual simulations tools help understand the product better/ easier to make informed choices. Eg, hair, skin, body measurements and environments • 3D modelling and printing allows consumer to design and make a whole product with very little skill. Cheap prototype but large financial outlay initially for printer	

Level	Mark	Descriptor
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Level 1	1-2	Candidate identifies the issues with no development OR identifies and develops one area. Shows limited understanding of the issues. Writing communicates ideas using everyday language but the response lacks clarity and organisation. The candidate spells, punctuates and uses the rules of grammar with limited accuracy.
Level 2	3-4	Candidate identifies some issues with associated developments showing some understanding of the issues. Writing communicates ideas using D&T terms accurately and showing some direction and control in the organising of material. The candidate uses some of the rules of grammar appropriately and spells and punctuates with some accuracy, although some spelling errors may still be found.
Level 3	5-6	Candidate identifies a range of issues with associated

		developments showing a detailed understanding of the issues. Writing communicates ideas effectively, using a range of appropriately selected D&T terms and organising information clearly and coherently. The candidate spells, punctuates and uses the rules of grammar with considerable accuracy.