

Mark Scheme (Pre-Standardisation) Summer 2012

GCSE

GCSE Design & Technology (5TT02/01)

General Marking Guidance

These instructions should be the first page of all mark schemes.
THIS BOX SHOULD NOT APPEAR ON THE MARK SCHEME

- 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.

Apart from the front cover, every page should have a right justified footer showing Unit/Spec no_Paper no over series
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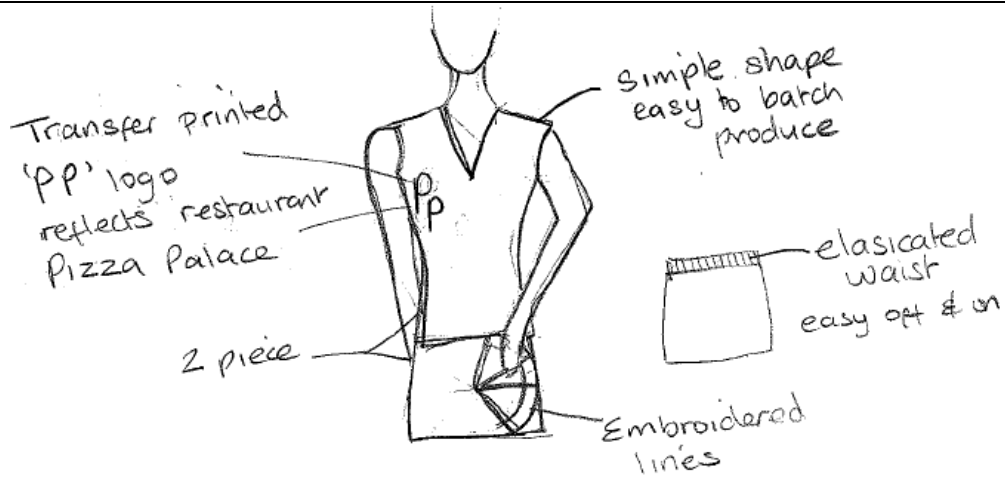
Question Number	Answer	Mark
1 2.4 joining & finishing tech	A	(1)
Question Number	Answer	Mark
2 1.1 Natural fibres	B	(1)
Question Number	Answer	Mark
3 1.5 Fabrics	C	(1)
Question Number	Answer	Mark
4 6.2 Renewable sources of energy	D	(1)
Question Number	Answer	Mark
5 5.3 CAD/CAM technology	C	(1)
Question Number	Answer	Mark
6 2.7 Dec & stitch tech's	C	(1)
Question Number	Answer	Mark
7 1 Materials & components	B	(1)
Question Number	Answer	Mark
8 2.5 Finishing processes	B	(1)
Question Number	Answer	Mark
9 1.3 synthetic polymers	C	(1)
Question Number	Answer	Mark
10 1.7 Comp's, mat's, equipt & proc's	D	(1)

Question Number	Answer	Mark										
11. (a) 1.7 Comp's, mat's, equipt & proc's	<table border="1"> <thead> <tr> <th>Name</th> <th>Use</th> </tr> </thead> <tbody> <tr> <td>(Sewing) thread (1) Reel of thread (1) [Not cotton]</td> <td>To create (decorative) stitches To sew things together</td> </tr> <tr> <td>Press studs</td> <td>To close/ to fasten (1) To hold together</td> </tr> <tr> <td>Overlocker</td> <td>To bind/finish and cut edges To strengthen and neaten edges. Join fabrics (1)</td> </tr> <tr> <td>Tailors chalk (1)</td> <td>To transfer markings onto fabric / to mark fabric.</td> </tr> </tbody> </table> <p style="text-align: right;">4 x 1</p>	Name	Use	(Sewing) thread (1) Reel of thread (1) [Not cotton]	To create (decorative) stitches To sew things together	Press studs	To close/ to fasten (1) To hold together	Overlocker	To bind/finish and cut edges To strengthen and neaten edges. Join fabrics (1)	Tailors chalk (1)	To transfer markings onto fabric / to mark fabric.	(4)
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11. (b) 1.3 Synthetic polymers	<p>Two properties and linked reason from:</p> <ul style="list-style-type: none"> • Property: Very strong when wet & dry (1) • Reason: Makes it hardwearing / rough sport / can be worn in all weathers (1) • Property: Good resistance to alkalis and solvents (1) • Reason: perspiration/deodorant should not discolour/damage (1) • Property: Can be given a wide variety of finishes (1) • Reason: so can be adapted to meet aesthetic /physical needs (1) • Property: crease resistant (1) • Reason: easy care so will need minimal ironing/maintain it's appearance (1) • Property: Stain resistant / non-absorbent (1) • Reason: easy to wash and retain original qualities / dirt won't soak in (1) • Property: Dries quickly (1) • Reason: will require frequent washing/ labour saving (1) <p style="text-align: right;">2X1 2X1</p> <p>[Appropriate reasons are interchangeable but must relate to property.]</p>	(4)										

Question Number	Answer	Mark
11. (c) (i) 1. Materials & components	<p>Correct two stages identified:</p> <pre> graph TD A[Put dye into bowl of water] --> B[Suspend equal size pieces of fabric over the bowl] B --> C[Immerse each piece of fabric into the dyed water to the same depth] C --> D[Time at regular intervals and record (1)] D --> E[Measure liquid absorption (1)] </pre>	(2)
Question Number	Answer	Mark
11. (c) (ii) 1. Materials & components	<p>Any reason from:</p> <ul style="list-style-type: none"> • The dye makes it easier to see the rate of change (1) • so results are accurate/ consistent. (1) 	1x1 (1)
Question Number	Answer	Mark
11. (d) 2.8 Health and safety	<p>Hazards identified from the following:</p> <ul style="list-style-type: none"> • Sewing through finger (1) • Tripping over cables (1) • Damage to eye (1) • Inadequate lighting (1) • Height of chair (1) <p>Precaution described from the following:</p> <ul style="list-style-type: none"> • Train machinist (1) so that they know how to work equipment properly e.g. thread up properly (1) • Install a machine guard (1) around the needle so that fingers cannot get near it (1) • Pins should not be left in work when sewing (1) needle may snap and break (1) 	

	<ul style="list-style-type: none"> • One machinist to a sewing machine at a time (1) Each person in the room is responsible for their and others safety (1) • No distractions(1) sensible behaviour at all times (1) • Make sure all cables are safely out of the way (1) so that workers do not have to look out for them and can avoid injury. (1) • Ensure that the lights are bright enough and placed over the workstation. (1) So you do not get a headache/sore eyes. (1) • Adjustable to workstation (1) So that you do not get a back injury (1) • Switch off machine whilst threading (1) to ensure machine paths do not more unexpectedly (1) 	1x1 2x1	(3)
Question Number	Answer		Mark
11 (e) 2.1 Scale of production	<p>Any of the following statements:</p> <ul style="list-style-type: none"> • Work is passed from operator to operator (1) • Each worker does a repetitive task (1) • The next consecutive task is carried out along a line (1) 		(1)
Question Number	Answer		Mark
11 (f) 3.3 Manufacturing processes	<p>Any advantages from the following:</p> <ul style="list-style-type: none"> • Highly skilled individual/s (1) so complex beautifully crafted products can be made (1) • A lot of detail and handwork can be incorporated (1) as more time is allowed for each piece (1) • Luxurious fabrics can be used (1) as consumers expect high quality products (1) • Expensive components can be used (1) as consumers expect to pay more than high street prices (1) • Limited number of workers who have key all round skills (1) so fewer are available on the market which gives exclusivity and prestige to product (1) • Individual measurements taken (1) can be made to fit one or small number perfectly / not standard sizes (1) alternates can be made if answer changes size. <p>Any disadvantages from the following:</p> <ul style="list-style-type: none"> • Slow production method (1) so consumer has to wait longer/ cannot be picked up at the last minute (1) • Expensive to buy (1) as it only produces one item at a time so overheads and labour cost add to the price of the product / materials and components and cannot be bulk brought (1) • Limited number of workers who have key all round skills (1) difficult to find (1) • If out come is not as expected consumer (1) will be less likely to find similar alterative quickly (1) 	2x1 2x1	(4)
Question Number	Answer		Mark

<p>12 4.3 Designing products. Application of K&U</p>	<p>Design idea 1</p> <p>Candidates may answer any specification point in either graphical form or by annotation.</p> <p>No marks are awarded for the quality of graphical communication.</p> <ul style="list-style-type: none"> • Consist of more than one garment (1): eg two clearly identified pieces of bold, top, trousers, skirt, dungarees, waistcoat etc. • Clearly promote the fast food restaurant (1): eg logo, motif, fancy dress based on pizza related food, (colours and shapes, must carry annotation or be really obvious). • Be comfortable to wear (1): eg not tight or restrictive around neck armholes, wrists, stretchy fabric, fabric made from soft fibres, breathable fabric. • Be safe to wear (1): eg no loose, trailing parts to trip over, no trailing parts to get caught on things, obscured views, no sharp objects. <i>[must not be visual only marks awarded.]</i> • Be easy to care for(1): eg easy to wash, easy to iron, cotton/ polyester fabrics that can be washed at low temperatures, fabrics that can be tumble dried and require less/no ironing. • 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, on the bodice. • Include decorative techniques (1): eg appliqué embroidery, printing methods eg heat transfer, screen printing, trims and frills. <i>[needs 2 techniques for 1 mark]</i> • Be suitable for batch production (1): eg evidence that process is suitable for batch production, eg shape, features, components or decoration which makes it more suitable than one-off. Eg minimal sub-assembly, bulk bought fabrics, components. <p>Example of candidate response:</p>	
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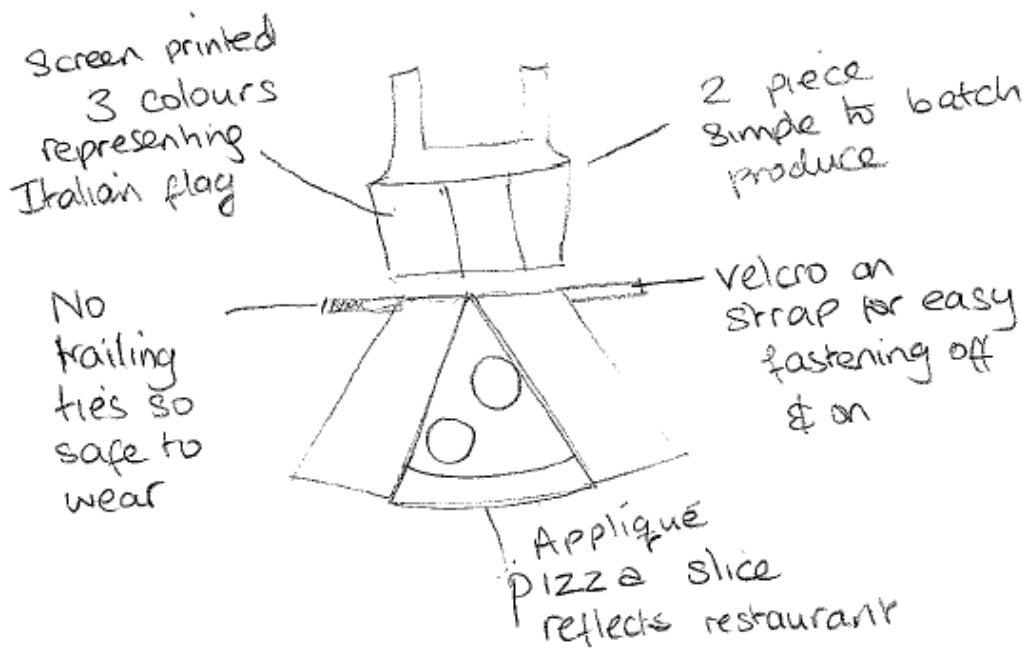


(8)

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:



(8)

8X1

Duplicate answers are not acceptable unless separate justifications given .eg. Stretchy fabric.

Question Number	Answer	Mark
13 (a) (i) 1.5 Fabrics	<p>Two characteristics and linked justification from:</p> <ul style="list-style-type: none"> • Characteristic: High elasticity / stretchy (1) • Justification: which makes it easy to put on and take off / expandable so adjusts to size (1) • Characteristic: warm (1) • Justification: as the loops trap air between them (1) • Characteristic: Retains its shape(1) • Justification: Returns to shape after reasonable expansion(1) • Characteristic: Crease resistant (1) • Justification: Easy to care for (1) <p style="text-align: right;">2x1 + 2x1</p>	(4)
13 (a) (ii) 1.4 Yarns	<p>Explanations from the following:</p> <p>Blends</p> <ul style="list-style-type: none"> • More difficult to separate & recycle fibres / yarns later (1) • Are made by mixing two or more fibres together (1) • This takes place before/ then the fibre is spun into a yarn. (1) <p>Mixture</p> <ul style="list-style-type: none"> • Easy to recycle fibres / yarns later (1) • Uses different yarns made from a single fibre (1) • This is then woven or knitted together (1) <p><i>Can be a variation of the two explanations but must give an explanation from both to gain full marks</i></p> <p style="text-align: right;">1x1 + 1x1</p>	(2)
13 (b) (i) 3.1 Analysing products	<p>1 mark- brief mention of how the baby's outfit is cool to wear 2 marks - a developed explanation of how the baby's outfit is cool to wear</p> <ul style="list-style-type: none"> • Cotton fabric(1) lets warm air escape from body/ absorbs moisture /breathable (1) • Design/ styling (1) Hands and feet are out so extremities can cool/ uncovered (1) • Adjustable (1) Poppers down the front can be opened for extra ventilation.(1) <p style="text-align: right;">2X1</p>	(2)
13 (b) (ii) 3.1 Analysing products	<p>1 mark- brief mention of how the baby's outfit is unisex 2 marks - a developed explanation of how the baby's outfit is unisex</p> <ul style="list-style-type: none"> • Colour(1) white is neutral and not gender specific (1) • Design/ (1)does not reflect either gender eg sporty look / cat/ animal logo (1) • Styling (1) simple with red sporty piping / no added fancy trims(1) • Shape (1) Classic will fit any baby/ no added features.(1) <p style="text-align: right;">2X1</p>	(2)

Question Number	Answer	Mark
13. (c) 3.1 Analysing products QWC	Evaluation to address the following issues:	
	A	B
	Fabric function - cotton fibre make it cool to wear. Is not stretchy. Polyester will make it easy care.	Fabric function - single jersey wool/acrylic mix - Warm to wear. Has stretch for comfort/give. Acrylic is less itchy and will reduce the price of the wool fabric.
	Design form/function - Feet and hands not protected from cold. Front opening poppers. Baby has to fully undress for nappy change	Design form/function - Elasticated cuffs, enclosed feet to retain heat. Poppers make it easy to change nappy without baby cooling too much
	Matching products - no accessories.	Matching products - Accessories- hat /scarf set, relevant for winter protection.
	Styling form - Casual sporty designed for every day wear / not appropriate for a special occasion.	Styling form - Velvet trim. Adds detail & interest and looks dressy / suitable for a special occasion.
Aftercare & sustainability - suitable to be washed at low temp due to fibre content.	Aftercare & sustainability - suitable to be washed at low temp but mixed fabric and fibre content means it should be washed with care.	(6)
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) (i) 1.6 Modern & smart materials	One product from the following: <ul style="list-style-type: none"> • Bullet proof vest (1) • Astronauts suits (1) • Anti-knife vests (1) • Flak jackets (1) • Motor cycle suits (1) • Helmet (1) <p style="text-align: right;">1x1</p>	(1)
Question Number	Answer	Mark
14 (a) (ii) 1.6 Modern & smart materials	Two benefits from: <ul style="list-style-type: none"> • Strong / Five times stronger than steel (1) • Protects (1) • Light (1) • Stiff (1) • Disperses impact (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
14 (b) (i) 2.6 Printing processes	Two named from the following: <ul style="list-style-type: none"> • Batik (1) • Tie and dye (1) • Silk painting (1) • Screen printing (1) • Tritik (1) • Strlbhori (1) <p style="text-align: right;">2x1</p>	(2)
Question Number	Answer	Mark
14 (b) (ii) 2.6 Printing processes	Explanations from the following: <ul style="list-style-type: none"> • Designs vary (1) as it is hard to apply equal pressure every time you print (1) • Designs change (1) as it is difficult to apply the exact same amount of dye / paint to the surface of the block (1) • Pattern irregular (1) as it is difficult to align blocks (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
14 (c) 2.4 Joining and	Any advantage given from: <ul style="list-style-type: none"> • Stitch not visible from the outside (1) 	

finishing	<ul style="list-style-type: none"> • Gives a neat finish(1) • Fabrics will 'give' against each other (1) Any disadvantage from: <ul style="list-style-type: none"> • Slow method (1) • Time consuming (1) • Done by hand / can be inconsistent, human error (1) <p style="text-align: right;">1x1 1x1</p>	(2)
Question Number	Answer	Mark
14 (d) 2.4 Joining and finishing & 1.7 comp. mat. Equip. & processes	Any explanation from: <ul style="list-style-type: none"> • Seams and hems need to lie flat (1) so that the next piece can be correctly connected (1) • It ensures that the quality of the product is high (1) as it looks well finished/ it creates a smooth, flat finish (1) • Steam can be used (1) so that the product can be formed /moulded into desired shape. (1) • To apply a finish to the seams (1)so they can be waterproof(1) • To fuse a decorative detail (1) so correct placement can be achieved e.g. motif, diamonte (1) • To fuse interfacing to the product (1) which can add structure and support the fabric (1) • To heat seal the fabric into place (1) to make semi permanent/ permanent structures e.g. pleats / crease (1) <p style="text-align: right;">2x1</p>	(2)
Question Number	Answer	Mark
14 (e) 5.1 ICT	One disadvantage from the following: Disadvantage from: <ul style="list-style-type: none"> • Locating information- Consumers may not find products easily / vague searches engines / too much competition/ information.(1) Because of the large amount of material on the internet it can be difficult to find what you want (1) • Consumer confidence in Security (1) credit card fraud & personal details.(1) Most information on the internet is not secure and may be intercepted or hacked (1) • Delivery can be difficult and hard to track (1) as specific times of delivery are not always given and parcels can get lost. • Customer returns process can be complicated (1) which can put consumers off purchase (1) • Customers may be dissuaded from buying (1) as they cannot try on/ feel product (1) • Products not immediately available (1) have to wait for delivery (1) <p style="text-align: right;">2x1</p>	(2)

Question Number	Answer	Mark
14. (f) 7.1 Moral, social & cultural issues QWC	<p>Any issues discussed from the following:</p> <ul style="list-style-type: none"> • Manufacturers making products that can be worn a few times or used for a relatively short time. • Manufacturers guarantee themselves new customers and look for greater profits as turn around is quicker. • Planned / built in obsolescence. Product eg. Primark fashion (primark effect), tights • Promotes throw away fast-high fashion and the desire to keep up with latest trends and fashion • Their actions promote a throw away society as goods can be produced and sold more cheaply • Consumers expect relatively good quality that may last for a short time • Less expectation by consumers to repair products as to replace is much cheaper • This promotes demand and gives manufacturers a business to supply/ fulfil it. • Environmental implications should be considered by manufacturers but is not always at the forefront of their agendas. • To maintain profit margin Off- shore production of goods is common and this can encourage cheap exploitative labour and working conditions • Environmental impact of off shore production means that in FF air freight is used instead of sea/land freight • Puts pressure on customers to spend more than they have and has fuelled a debt culture 	(6)

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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.