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Examiners' Report
June 2015

GCSE Design and Technology 5TT02 01

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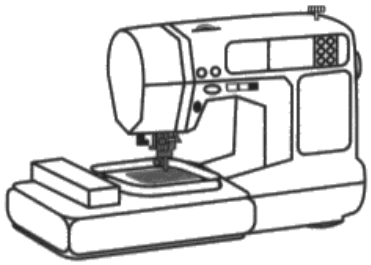
Introduction

This paper questioned candidates using a variety of methods, which accommodated a range of candidates' abilities. It began with a multiple choice section (questions 1-10), in the middle, a range of question forms which included the design question, and towards the end, extended questions; one of which is a product analysis question. These extended questions were accompanied by an asterisk, as along with testing the candidate's knowledge and understanding they also tested 'quality of written communication'. The multiple choice proved a good introduction to the paper as it tested a wide range of the specification at a medium to low level. The next section of the paper allowed candidates to demonstrate their knowledge and understanding of a number of familiar or common workroom equipment, tools and components. The paper then has a range of short and longer answer type questions designed to allow candidates to demonstrate their abilities, for example, by stating/naming, through discussion, justifying or explaining, before progressing to the demonstration of a deeper understanding on focussed topics.

Question 11 (a) (2)

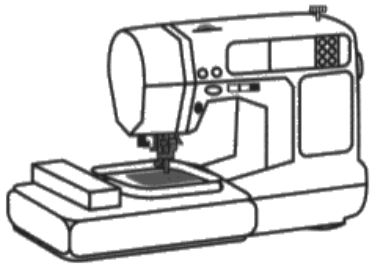
This section requiring candidates to complete the table of 'names and uses' of components and equipment, gave way to a number of successfully answered responses. The most popular being the hooks and eyes, followed by the tjanting tool. Although spelling was an issue for some candidates with the later, this was positively marked and many candidates conveyed their knowledge adequately enough to secure a mark. However, although some candidates were able to describe the CAD/CAM embroidery machine and the tracing wheel, from what they saw, this did not provide the technical vocabulary necessarily to name or give the correct use of the component or equipment.

This question based on the CAD/CAM embroidery machine highlighted how frequently candidates repeated the question paper wording, seeking credit for its use. Unfortunately acknowledgement cannot be given unless the explanation of the use requested showed independent understanding of the function of the machine. Responses ranged from the ability to; 'create detailed stitch patterns', 'electronically sew designs' to 'create decorative sewn logos'.

	CAD/CAM embroidery machine	to stich a pattern onto fabric faster the humans (1)

In this example the candidate clearly understands the function of the machinery as key words like 'stitch', 'pattern' and 'faster' are used.

Many examples seen could easily have been describing printing or other methods of decorating fabric. As CAD/CAM was given in the 'named section', a form of sewing or automated sewing/ stitch decoration was required to identify this specific form of machinery's use.

	CAD/CAM embroidery machine	To embroider patterns, motifs or letters (1)

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Examiner Comments

This candidate seems to have some knowledge of the machinery but does not provide evidence that they understand the function which embroidery performs.

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Examiner Tip

A good tip for candidates would be to take out the words used in the question then see if their response gives enough independent information.

Question 11 (b) (ii)

This question required candidates to be able to show an understanding of the quilting technique and relevant quality controls needed as it is performed. The most popular correct responses ranged from the stitch quality, visual appearance and uses of material placement, such as wadding. Many candidates seemed to write from personal experience showing good practice is carried out in many centres to acquaint them with a range of techniques.

(ii) State **one** quality control you would use whilst completing this technique.

(1)

Make sure the stitching lines are straight

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Examiner Comments

The candidate not only gave the correct response to 11bi and knew the name of the technique (quilting), they also thought about how to use language which was descriptive enough to achieve a good quality outcome. 'Making sure the stitching lines were straight' was seen frequently.

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Examiner Tip

A less refined answer would be to 'make sure the lines were straight'. Responses should make sure that they include the main subject and candidates should read through work and check for this.

(ii) State **one** quality control you would use whilst completing this technique.

(1)

Seperation between stitches

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Examiner Comments

In this response the candidate does not distinguish 'what' the 'separation between stitches' needs to be or 'how' they should look. As this is an ambiguous response and still raises questions it cannot be given credit as a full answer and did not score any marks.

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Examiner Tip

It is useful for candidates to note that they must read through their responses and ensure that the information required is given.

Question 11 (b) (iii)

This question, as with 11bii, referred to the oven glove. Many candidates were able to relate either 'how' or 'why' the oven glove can be made safe, much fewer were able to do both. The most frequently given response was to 'why' that safety measure was needed.

Many candidates seemed to draw from personal experience or common understanding to answer this question which made it highly relatable.

(iii) Describe **one** way in which an oven glove can be made safe when in use.

(2)

An oven glove can be made Safe while in use by making it heat resistant. This could be done by having layers of fabric and wadding So the heat can't go through quickly. For example when taking a hot tray out the oven, heat won't be felt or a bareable amount will.

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Examiner Comments

This candidate gives very detailed information of 'how' using 'wadding', the glove is suitable to handle a 'hot tray', which is the 'why' part of the response, straight from the oven. They define the need for 'layers' to back up how the wadding could work.

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Examiner Tip

Candidates are encouraged to use the world around them to investigate a range of textiles products including apparel and household textile goods to expand their understanding of suitable end uses of properties, techniques and features in textiles.

Finding the correct wording can make the difference between candidates achieving part or full marks and is often related to the need to substantiate their comments with valid, relevant explanations.

(iii) Describe **one** way in which an oven glove can be made safe when in use.

(2)

Oven gloves can be made heat resistance so that if you need to pick up anything that is hot, it won't burn you

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Examiner Comments

What the candidate did well here is to be able to identify the need for 'heat resistance'; unfortunately the method by which this could be achieved was missing, so they scored one mark.

Question 11 (c) (ii)

Many candidates understood that bias binding 'stretched' or 'didn't fray' and there were plenty of 1 mark responses given, beyond this, knowledge was generally limited.

Where good answers reflected the clear link to the benefits of bias binding, many unsuccessful ones focused on the shape and styling of the vest, looking at features such as the looseness of the arm hole or the vest being less 'fitted' because of the binding.

(ii) Describe **one** benefit of cutting from this position on the fabric.

(2)

The fabric is more flexible ~~and~~ when cut on the grain so can easily be bent / curved around curves in a garment

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Examiner Comments

It was good to see that this candidate understood that the fabric would be more flexible. The misinformation about it being cut 'on the grain' did not adversely affect their ability to gain full marks as the expanded knowledge that it helped shape by being 'bent/ curved in a garment', provided the information necessary show understanding.

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Examiner Tip

Candidates should practise fitting relevant points to matched developments so they can begin to automatically formulate linked responses and gain the 'explanation/ justification' mark that often makes up a well-developed response.

(ii) Describe **one** benefit of cutting from this position on the fabric.

(2)

It won't fray because it has been cut across the grain line of the fabric.

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Examiner Comments

The candidate demonstrates knowledge that the fabric 'won't fray'. This however, is matched to wording that was given as information before the question and as such does not get the second mark.

Question 11 (c) (iv)

Again candidates hooked information given onto the 'benefit to the environment' term which seemed to lead explanations based on anything learnt to do with this topic. This often gained a mark but did not lead to the developed responses needed for full marks. Unfortunately, a number of candidates seemed oblivious to what Tencel® was and this led to a myriad of generalised, unspecific and unusual responses. Irrelevant information was given when some candidates did not use this opportunity to write about Tencel®, rather keywords based on the environment were prolific.

Successful candidates most commonly mentioned 'wood pulp', the natural and regenerated sources, biodegradable and sustainable points.

(iv) Describe **one** benefit of Tencel® to the environment.

(2)

Tencel ~~can~~ will biodegrade which means that it will not take up space on landfill sites. Tencel is made from wood pulp (a renewable resource).

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Examiner Comments

The matching of the key terms 'biodegradable' with 'wood pulp' and additional information of not taking 'up space on landfill sites' provides full evidence of this candidates knowledge on the subject.

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Examiner Tip

Hardly any candidates gave the recycling of toxic chemicals in the closed loop process. This does highlight the need for candidates to investigate regenerated fibres more thoroughly, especially the advantages and disadvantages of one such as Tencel®

.

Question 11 (d)

Topic one of the specification asks candidates to understand 'Aftercare' including knowledge of symbols and garment labelling. Many candidates incorrectly matched this symbol to environmental issues. They often related the visual to a 'tree'. This question gave an insight to those candidates who were familiar with the symbol or that had covered the breadth of this topic.

It is useful for candidates to understand where their fibres come from both theoretically and visually and learning common symbols could help alert to possible allergy or aftercare issues.

(d) Describe **one** piece of information that the symbol below shows.

(2)

This symbol shows that the material comes from a cotton plant. It gives the information that it is a natural fibre.

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Examiner Comments

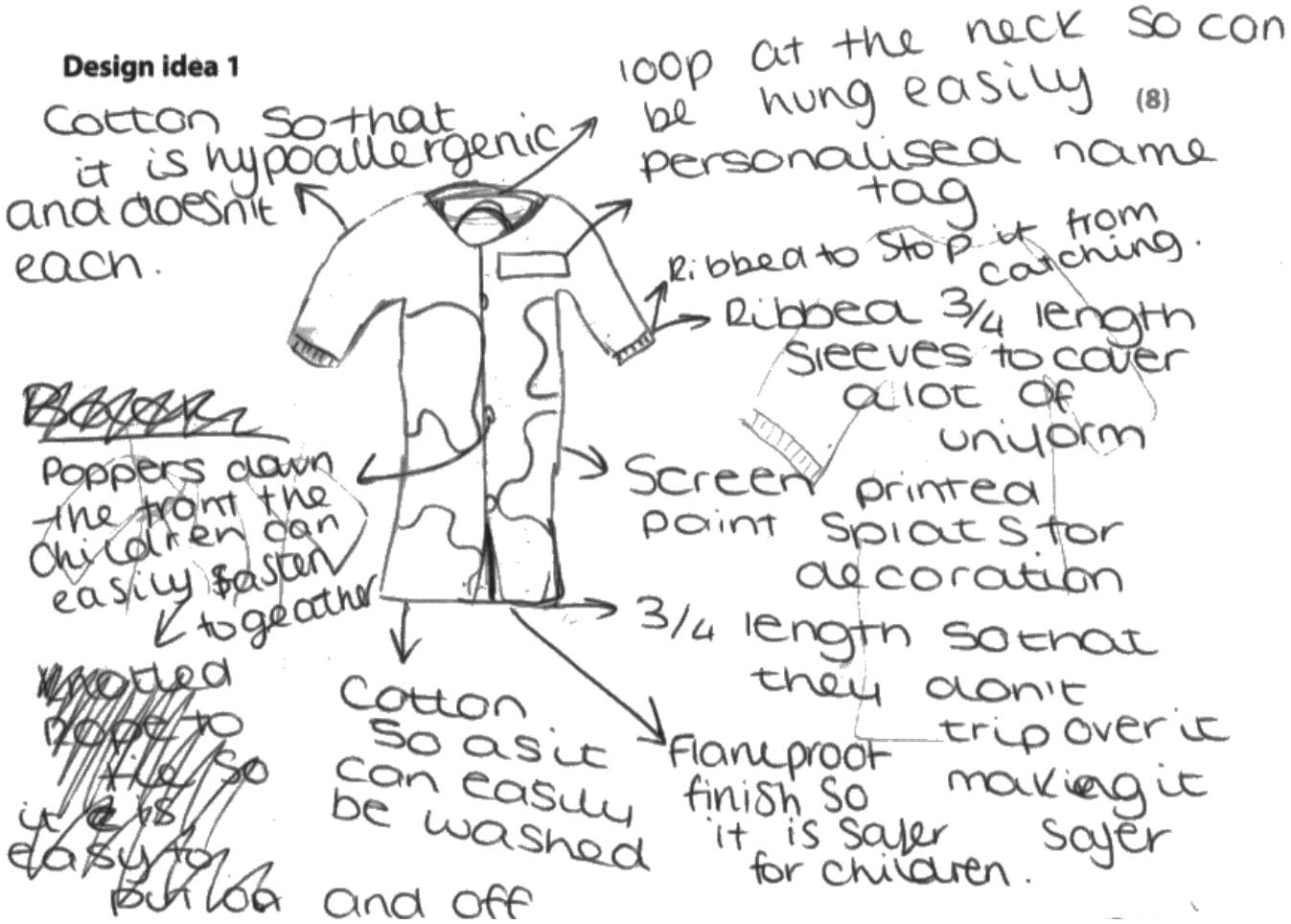
This candidate uses their vocabulary well and does not rely on repeating the question wording when attempting to gain credit, as was so often the case of a lost mark. Instead they tell us what 'information' is given. Other successful candidates gave responses of, for example, 'trademark' knowledge and identifying 'pure cotton'.

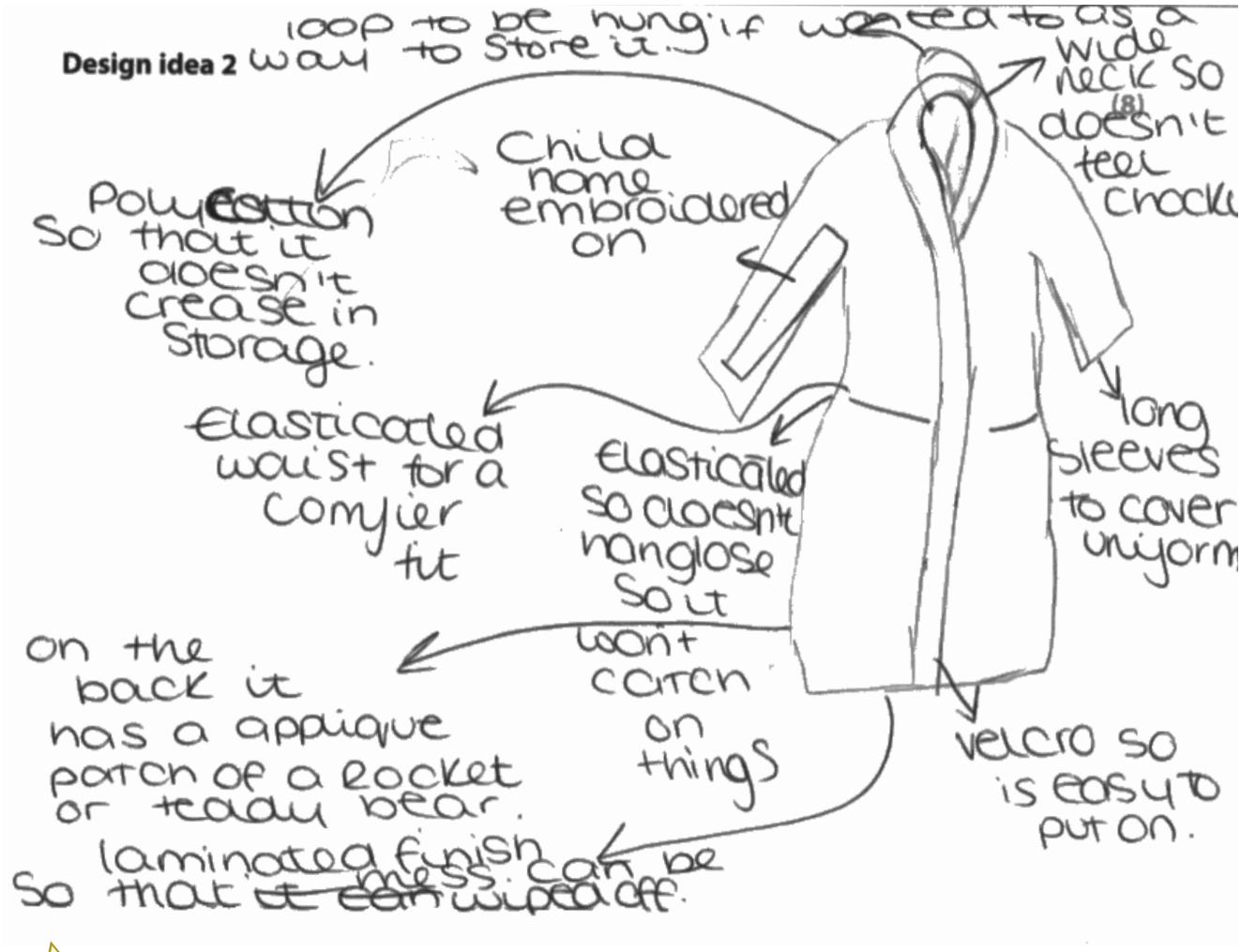
Question 12

Candidates have improved their performance on this question as many centres appear to have acted on advice given last year and have improved the quality of the annotation linked to each criteria of the specification points being assessed. This need not be cumbersome and more direct reasons for choice of design ideas are better than overly wordy responses.

Candidates tended to score highly on the point of 'one garment that covers most of their uniform'. Some candidates offered some imaginative options for their ideas which allowed them to avoid the obvious choices.

Some candidates failed to take on board the age of the child particularly in relation to the suitability of the type of fastening for independent use. The most common marks were lost when candidates either missed out or failed to explain why choices were made e.g. for comfort or care. Examiners should not have to ask why or presume the candidate reasons for choice, this should be explicit.





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Examiner Comments

The sketches matched with the annotations allowed this candidate to give a very good range of answers. Each specification point was carefully matched to the ones requested. They were awarded 7 out of the 8 marks available, losing 1 mark in design one for not being specific about the ease of washing cotton and 1 mark in design 2 for repeating the same method of hanging.

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Examiner Tip

Candidates must try to avoid using one design point for multiple marks to be awarded to even if annotated. Also it would aid the marking of this question if candidates drew portrait and did not use fibre pens as this sometimes makes it incredibly hard to determine the text.

Question 13 (a)

This question concerned the suitability of silk to the chosen product. To get full marks the candidate needed to show knowledge of the correct characteristics and produce a justification of the characteristic given.

A lack of distinction between the characteristic and the justification were the cause of some candidates not being awarded full marks. The ability to justify can only be awarded marks if they have linked it to a relevant point otherwise it presents general and somewhat random information.

(a) Give **two** characteristics of silk, other than being comfortable to wear, that make it suitable for the dressing gown.

For each characteristic, justify your answer.

(4)

Characteristic 1

good lustre

Justification

it is made from a continuous filament and so the yarn and fabric is smooth and glossy, and so it makes a good luxurious dressing gown.

Characteristic 2

Silk is easy to dye

Justification

Silk is absorbant, this makes it easier to produse the printed motif on the silk

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Examiner Comments

It is encouraging to see candidates consider their knowledge of properties of fibres and apply them in a way that is relevant to the product shown. Having a 'continuous' fibre with a 'smooth' surface, will allow the fibre to appear glossy and with 'good lustre'. This was just one of the clearly matched responses given by this candidate for the full 4 marks.

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Examiner Tip

Candidates who struggled to achieve 3 to 4 marks tended to give responses related to the product styling or a fabric rather than the fibres. It is good to note that in order to determine the direction of the responses required construction techniques are written in.

Question 13 (e)

A significant number of Level 2 marks were given for this question, although some blank pages were seen most candidates achieved at least level 1 (one to two marks). Marks were most commonly given for the environmental impact of the fabrics and processes. Level 1 marks were often a list of statements with little/ superficial development, where level 2 candidates began to make relevant developments. The understanding between hand and more volume based commercially viable techniques were also seen frequently. Unfortunately less development of points such as; the shape of pattern pieces, amount of fabric used and layplan issues were less seen.

The usage of words linked to the environment such as biodegradability and landfill should only be used in the correct context linked to the question in order to show relevance and gain the second development mark.

Compare Product A with Product B in terms of environmental considerations, scale of production and cost.

(6)

Product A is made out of organic cotton which is environmentally friendly because it uses no fertilisers or pesticides which could contaminate water systems. However, product B is not environmentally friendly because the fabrics used (nylon and acrylic) are made from plastics which are made from crude oils. These crude oils are non-renewable and give off carbon emissions when burned, so product B is worse than product A in that respect. In terms of cost, product A would be cheaper than product B because although organic cotton is more expensive than the synthetic fabrics for B, much less is used because there is no lining and B's sleeves and body length are excessively long. As well as this, product A is more likely to be suitable for batch production than product B which would more likely be a job production. This is because product A is a more simple design, with quick and easy transfer printed designs which can be

done by a machine whereas product B has hand stitching along the bottom which would be time consuming to make and would push the cost up.

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Examiner Comments

It is clear that this candidate has a good grasp of the benefits that organic cotton can bring to the environment as they state one of its postive features of not requiring 'fertilisers or pesticides' which could 'contaminate' the 'water system' in a fully developed manner. The candidate goes on to give a second developed point which looks at the adverse effects of synthetic fibres; their use of non renewable substances such as 'crude oil' and their contribution to 'carbon emmisions'. To gain the full marks awarded the candidate addressed the other areas of scale and cost; covered by consideration of the extra volume of fabric needed for Product B in its 'lining', 'sleeve' and 'body length'. Then finally addressing points such as Product A's 'simple design' and use of machinery as opposed to hand techniques. This candidate was awarded the full 6 marks available.

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Examiner Tip

It is good for candidates to note that in order to reach level 3 comparisons should address all the areas presented and their knowledge should specifically relate to the products given, with linked, qualified and justified statements.

Candidates should look at summarising or concluding their thoughts as this gives them the oppurtunity to read through their work and ensure that all areas have been covered with matching reasons for each comment made.

Question 14 (a)

Those that knew the laminating process could often identify it through stationary techniques as well as through the use of fabrics. 'Heat' was the most popular correct response followed by adhesive/ glue. Few mentioned stitching.

This is the type of question that has seen either one word correct answers or much more detailed responses.

The command word here of 'state' does allow both forms to allow for both reactions.

14 (a) State **two** ways that material can be laminated.

(2)

1 using glue ~~clo~~ and rollers to bond and laminate the material together.

2 using a solvent and heat rollers to laminate layers of material togeher.

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Examiner Comments

This candidate gives not only a correct answer of 'glue' but shows knowledge of the type of machinery 'rollers' that could be used. 'Heat' was also given as the second correct answer for the full two marks.

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Examiner Tip

Finishing techniques is an area where candidates generally need to improve their knowledge. Candidates need to be familiar with the different forms, suitability of processes, application, advantages and disadvantages of finishes should be matched with a variety of products and end uses.

Candidates are encourage to put down a response rather than leaving blank spaces in order to at least get a chance of gaining marks.

Question 14 (c)

Those candidates that could distinguish this alternative method of felting from the use of liquids, moisture and heat to matt the fibres answered this question well. Many of those gained the full two marks, however they were not in the majority.

Many candidates giving correct responses showed knowledge of needle 'punching' or hooking through an open fabric structure and could describe workshop techniques to produce this.

(c) Describe how needle felt is made.

(2)

by passing a series of barbed needles through a web of fibres to catch and tangle / interlock them.

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Examiner Comments

This candidate's knowledge of the barbed needles needed to hook and pull through fibres allows them to gain the maximum 2 marks available.

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Examiner Tip

It is prudent for candidates to learn the technical language when being demonstrated to, making or learning processes as when these are linked to the technique questioned they are most likely to show linked knowledge.

Question 14 (e)

This question which referred to the advantages of CD ROMs was generally well answered as many candidates knew that it was a method for storing data. Many students gained a mark on this question and seemed to relate personal experience or knowledge of owning or having used CD ROMs as a basis for their response, with 'storage' being the most popular response.

In order to gain the full 2 marks candidates needed to make sure that they linked their responses to a linked reason for this being of benefit instead of two points raised but not justified or explained.

(e) Describe **one** advantage of using CD ROMs in the textile industry.

(2)

CD roms can hold lots of information needed for the industry e.g. patterns, designs, markings and templates and in a smaller space since CDs are thin and light and can be stacked and stored easily.

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Examiner Comments

The candidate demonstrates a familiarity with the abilities of CD ROMs to hold a lot of information', giving relevant textile related examples. They also related the relatively 'smaller space' they would take up, with reasoning that they are 'thin', 'light' and can be 'stacked easily'.

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Examiner Tip

Candidates are reminded that they must cover the full specification when revising as they can be tested from any part of it.

Question 14 (f)

The silk painting question allowed students to demonstrate their knowledge and understanding of a physical process that may have been used in the workroom. This question tests Topic 2.6 of the specification.

From the information provided by candidates it was clear that an encouraging amount of them had a good grasp of the silk painting technique and many had working knowledge or experience of it. Many candidates achieved at least 1 of the 2 marks available.

(f) Silk painting can be expensive to produce.

Describe **one** other disadvantage of the silk painting process.

(2)

The outcome ~~aa~~ will be different everytime due to it being done by hand therefore the pattern can't be repeated on several garments.

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Examiner Comments

Key words linked to the disadvantage mentioned of "time consuming" was one of the most popular correct answers which immediately showed the candidates familiarity with it. This candidate clearly demonstrates enough knowledge for the full 2 out of 2 marks.

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Examiner Tip

Ask candidates to learn and write up the advantages and disadvantages of methods they or others in the classroom have sampled or undertaken. Compare different methods when peer assessing, link hand and workroom practises, wherever possible, to industrial techniques.

Question 14 (g)

The responses to this 6 mark question, which (as 13e) included the asterisked quality of written communication component, did not on the whole provide many marks in the high band (5-6) category. Many of the candidates gaining lower marks failed to consider the testing for both the designer's client and consumer which meant only some of the benefits were discussed. Candidates display an adequate amount of knowledge of 2D/3D processes and could describe these.

The most common benefit relayed was the ability for the client to easily have input and change/modify the idea. This was also often linked with customer satisfaction and the resources virtual modelling saved. There were still a number of blank pages seen at the end of the paper although a high percentage of candidates who attempted the question wrote something worthy of credit and were attributed a score.

*(g) Discuss the benefits of 2D/3D virtual modelling and testing for the designer's client and the consumer.

(6)

2D modeling is fast, accurate and so is 3D modelling. Both allow a designer to see what their potential product will turn out like on a virtual 3D/2D model. This can make changing things (modifying) easier and can save time and money ^ Compared to actually having to make a prototype for to make the same changes. It allows them to see the best pose for the product, see if they want to change fabrics, colours, tactile shape or even the type of production. Testing for the designer's client and the consumer will allow the designer to physically see properties of the potential product and how they contribute to fulfilling the needs of the target market. The designer could carry out tests like 'absorbency, flammability, abrasion' and from these results he/she could make modifications to better the potential product so that it can become aesthetically pleasing to the target market as well as fulfil the user and performance requirements. Testing can also allow a person to narrow down ideal and just have a product fully meeting their needs. This is called ergonomics. Both save time but 2D/3D printing

However,
will save money too. Testing will physically allow ~~the~~ he/she to make
changes in fabric which isn't possible to do with 3D/2D modelling as
you are unable to feel the tactile of a fabric through a screen. Even though
both help with developing a product further.

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Examiner Comments

This is a well-structured extended piece of writing that carefully considers the question asked and raises a number of points in order to demonstrate their knowledge and understanding of the subject. It is a well organised, unambiguous response that was written in a manner which allows the reader to clearly follow the information provided.

Keywords and phrases used, such as, 'modify', 'prototype' and the benefits of testing the 'physical properties' were expanded to justify points raised. These were clarified and developed on with considerations of 'abrasion, absorbency and flammability testing fulfilling 'performance requirements'. This response was awarded the full 6 marks.

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Examiner Tip

It is important for candidates to know the difference between 2D and 3D design and the advantage that designing and testing can make in a virtual environment.

Many candidates who scored in the level 2 band gave information that often lacked depth and gave purely descriptions not benefits of virtual 2D/3D designing without connecting specific examples to the designer's client or consumer.

Many candidates scored in the level 2 band. The information given often lacked depth and gave descriptions of what virtual 2D/3D designing was without connecting specific examples to the designer's client or consumer.

*(g) Discuss the benefits of 2D/3D virtual modelling and testing for the designer's client and the consumer.

(6)

2D and 3D virtual modelling allows designers to adjust models, ~~and~~ setting and product itself ~~garment~~ on the computer. This means that, unlike toiles, no ~~fabrics~~ resources would go into trailing the product the designer is making. This also means less time is wasted and less energy is consumed so it's better for the environment. It also means a client ~~or~~ and consumer can veiw the garment without having to physically see the product. By using this new technology on the interet it is less damaging to the environment because energy is not wasted on the transportation of the product itself. The designer can also gain feedback from the client and cosumer and make the nessisary changes easily. The ~~overall the process it more efficient.~~ ~~cons~~ consumer or client can still ~~gain~~ get a detailed, accurate representation of the garment. Overall, it is ~~a more~~ more efficent.

(Total for Question 14 = 19 marks)

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Examiner Comments

This candidate's efforts are more generalised, a little repetitive and lack specific examples. They do however, give comments that show understanding of not needing to make toiles and the contributing fabric and energy waste associated with manual designing. This response was awarded 4 marks

Paper Summary

Based on their performance on this paper, candidates are offered the following advice:

- They should relate their everyday practise and make sure that they can name and state the uses of common workshop practises
- Analyse a range of products for their fibre, fabric, finishing, features and styling properties and elements so they can share this theoretical learning, knowledge and understanding in an examination setting
- Try not to leave blank spaces as this does not give any chance of credit to be given
- Ensure that they practise timed questions and papers to make sure they can access all parts of the paper in the given time
- Be aware of the adapting needs of their design work to match the specification and not rely on regurgitating past mark schemes without consideration to the target audience and designing, using their knowledge and understanding, to suit the end use
- Cover all eight specification points in the design section in order to secure marks. Make sure that each specification point explains the suitability of the candidate's choices to the product required. Brief annotations are often helpful
- Try to cover all areas asked for when responding to extended questions. Structure paragraphs and add technical language to aid this.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

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