
DESIGN AND TEXTILES

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Paper 3 Textiles Applications and Textile Technology

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MARK SCHEME

Maximum Mark: 100

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Section A

Question	Answer	Marks
1(a)	Fitness for purpose is an important consideration when designing new items of clothing.	
1(a)(i)	<p>Name <u>two</u> fabrics and the fibres they are made from, which would be suitable for nightwear.</p> <p>Answer could include: Any suitable, e.g. flameproof polyester lawn; cotton winceyette (brushed surface). 1 mark for each correctly named fabric – must have two (or more) words: one (or more) fibre and one name for the fabric construction, e.g. cotton/polyester jersey, cotton/viscose/polyester jersey, cotton/polyester batiste, cotton lawn.</p> <p>(No marks for <u>fibre</u> only, e.g. cotton)</p>	2
1(a)(ii)	<p>Explain <u>three</u> reasons why one of your named fabrics in (a)(i) is suitable nightwear.</p> <p>Answer could include:</p> <p>Fitness for purpose would include points such as: nightwear needs to have comfort and fabrics should be soft next to the skin; absorbent; washable for hygiene purposes; non shrinking, e.g. during washing; safe to wear, e.g. non-flammable; suitable strength for nightwear; elasticity for comfort (could be through elasticity of fibres or fabric construction, e.g. knitted); resilience (ability to spring back into original shape on release of pressure); non-static (if a man-made fibre such as polyester); special finish, e.g. easy-care for non-iron finish or brushes finish for winter wear, as air is trapped in the fluffy/raised surface.</p> <p>Any other appropriate point which relates to the chosen fabric.</p> <p>1 mark for a brief point, 2 marks for a well explained point.</p> <p>(if (a)(i) incorrect, give credit here for <u>fibre</u> if suitable for nightwear).</p>	6

Question	Answer	Marks
1(b)	<p>Assess the environmental issues a fashion designer needs to consider when designing new items of clothing.</p> <p>Answer could include:</p> <p>Fabrics: are they from a sustainable source, e.g. cotton which can be re planted; wool from sheep that are sheared; biodegradable; coloured cotton.</p> <p>Reduce the amount of fabric being used; reduce amount of dye used to colour the fabric (no fading of dye); reduce dye used so less resources/water used.</p> <p>Disposal of textiles: can the product be re-used.</p> <p>Can the fabric be re-cycled: to reduce landfill, e.g. polyester is recycled.</p> <p>Reduction or elimination of pesticides, fertilisers and other chemicals which may harm the environment to reduce harmful effects on environment.</p> <p>Non-use of fossil fuels: fossil fuels running out/harming environment.</p> <p>More digital use so no need for paper templates, etc.</p> <p>Use of transport systems: reduction of air miles/travel costs/fuel/etc.</p> <p>Types of fabric finishes which use chemicals in the process: reduce use of water/chemicals which may cause harm or pollution.</p> <p>Contamination of air/water/noise and whether the fabrics purchased are from manufacturers where these are reduced: reduce use of water/chemicals; reduce greenhouse gases in manufacture of fabrics/clothing.</p> <p>Use of packaging: reduce landfill.</p> <p>Any other relevant points/reasons.</p> <p>1 mark for each well explained point.</p>	6

Question	Answer	Marks
1(c)	<p>Discuss which fabrics and suitable finishes are available when choosing luxury fabrics for designing ladies' evening/party wear.</p> <p>Answer could include:</p> <p>Many different <u>fabrics</u> could be used, e.g. natural (such as cotton satin, silk chiffon, cotton velvet); regenerated (e.g. viscose crepe, acetate taffeta, viscose velvet); synthetic (e.g. polyester satin, nylon organza). Give credit for any suitable fabrics, but need to be luxury/suitable for evening wear.</p> <p><u>Fabric finishes:</u></p> <p>Appearance will be an important consideration – shiny, non-creasing surface; fashionable; achieved by calendering, embossing, glazing, possibly de-lustering. Methods for how these are achieved can be included: textured finishes; anti-static finish for synthetics fabrics to stop static build-up caused by friction of several fabrics; starching finish to make a stiffer drape; napping finish for fabrics such as viscose velvet.</p> <p>Reasons: fire resistant – to reduce risk of fire.</p> <p>Stain resistance: to reduce staining when in use, and may need less washing / less frequent washing.</p> <p>Care issues, e.g. may be dry-clean only or special care may be needed.</p> <p>Cost</p> <p>Special dyes, e.g. contain ultraviolet (UV) dyes so more visible at night/under lights/glow-in-the-dark dyes.</p> <p>Microencapsulation – must be relevant.</p> <p>There are many different finishes so other points could be included.</p> <p>Fabric finishes should relate to the fibre content of the fabrics chosen.</p> <p>Any other relevant points.</p> <p>Well discussed points up to 6 marks.</p> <p>1 mark for a brief point, 2 marks for a well discussed point.</p> <p>Justification: up to 3 marks. Total for question 1: 25 marks</p>	11

Question	Answer	Marks
2(a)	When mixing pigments explain what is meant by:	2
2(a)(i)	<p>secondary colours</p> <p>You may include a diagram in your answer.</p> <p>Answer could include:</p> <p><u>Secondary colours:</u></p> <p>(colour wheel may be given)</p> <p>Colours mixed by one primary (red, yellow or blue) and a different primary colour (red, yellow or blue) mixed together. Examples are: orange (mixed by equal parts of red and yellow); green (equal parts of blue and yellow); purple (mixed by equal parts of red and blue).</p> <p>1 mark for a brief explanation of just the colours of orange, green and purple listed.</p> <p>2 marks for the above colours listed, as well as how they are mixed from the primary colours.</p>	2
2(a)(ii)	<p>tertiary colours</p> <p>You may include a diagram in your answer.</p> <p>Answer could include:</p> <p>Definition of <u>tertiary colours</u>: one primary and one secondary colour mixed together; or two secondary colours mixed together. For example: red mixed with orange will give reddish orange; red and purple will give reddish purple.</p> <p>1 mark for a brief explanation of just the colours listed.</p> <p>2 marks for the above colours listed, as well as how they are mixed from the primary colours.</p>	2

Question	Answer	Marks
2(b)	<p>Assess the choices available to the manufacturer of applying colour to fabric.</p> <p>Answer could include:</p> <p>Printing and dyeing are the main ways, with many variations within this:</p> <p><u>Printing</u>: digital, screen, roller, block, stencil, spraying/painting/sublimation printing.</p> <p><u>Dyeing</u>: dip dyeing, tie and dye, batik (wax on fabric, then dye), silk painting, use of different resists (e.g. wax, gutta, paste).</p> <p>Fibres, yarns or fabrics can be dyed; when is the best time to add colour.</p> <p>If fibres and yarns are dyed, they can then be woven/knitted/felted to give many colour variations.</p> <p>Readymade garments can be dyed.</p> <p>Reasons given for choosing a particular method/time when dye/colour is added - give credit for good quality analysis.</p> <p>Must mention dyeing/printing, i.e. <u>methods</u> of adding colour.</p> <p>Any other relevant points.</p> <p>1 mark for a brief explanation.</p> <p>2 marks for a detailed assessment of each point.</p>	10

Question	Answer	Marks
2(c)	<p>Discuss whether the choice of a coloured fabric influences a fashion designer in the design of new textile products.</p> <p>Answer could include:</p> <p>Coloured fabric can relate to dyed or printed fabric, or any other method used to colour fabric.</p> <p>Answer will relate to the use of the coloured fabric, e.g. two or more coloured fabrics together on one item.</p> <p>Fabric trends and what is available from fabric manufacturers each season.</p> <p>Type of fabric, e.g. velvet can look different coloured according to light; shot fabric (different coloured warp/weft).</p> <p>Colour often focal point of garment.</p> <p>Occasion</p> <p>Age of wearer</p> <p>Season</p> <p>Silhouette shape of figure.</p> <p>Meaning of colours/cultural differences.</p> <p>Whether to use a printed fabric and dyed fabric together.</p> <p>Some fibres/fabrics are printed/dyed more readily than others so this may influence a fashion designer, e.g. if someone prefers to design for silk fabrics.</p> <p>Plain colours could be purchased/used and decorative work applied on top, e.g. machine embroidery.</p> <p>Plain fabrics purchased and overprinted/resist printed.</p> <p>Some colours are classic and always used, e.g. black.</p> <p>Types of dyes used, e.g. natural (one-off production) or synthetic maybe used in batch production.</p> <p>Any other relevant points.</p> <p>1 mark for a brief point.</p> <p>2 marks for a well-discussed point.</p> <p>Total for question 2: 25 marks</p>	11

Section B
Answer two questions.

Question	Answer	Marks
3(a)	<p>Discuss some of the factors to be considered when designing clothing using creative techniques.</p> <p>Answer could include:</p> <p>What type of fabrics to use; availability; non fraying.</p> <p>What fabrics trends are predicted in clothing; what is in fashion.</p> <p>What colours to use; trends; cultural differences; religious differences.</p> <p>What sort of texture to achieve.</p> <p>Availability of components to match colour of fabric.</p> <p>Which software is being used (if any); what sort of garment is being designed; the age group of the wearer.</p> <p>The climate where items will be worn.</p> <p>Environmental issues (must be relevant).</p> <p>Where the creative technique will be placed on the garment.</p> <p>Types of machines available to produce the creative technique (if being produced by machine).</p> <p>Whether to design a particular style, e.g. historical, or based on a specific culture or other style.</p> <p>Which creative technique to use, e.g. applique, Computer-Assisted Manufacturing (CAM) embroidery.</p> <p>How the techniques will be manufactured, e.g. by hand, using an embroidery machine.</p> <p>How time consuming the creative techniques is.</p> <p>How much the creative techniques will cost to manufacture.</p> <p>What occasion the items will be designed for; use of products.</p> <p>Care labelling; care of products.</p> <p>Examples should not include fabric manipulation.</p> <p>Any other relevant examples.</p> <p>1 mark for a brief point.</p> <p>2 marks for a well-discussed point.</p>	12

Question	Answer	Marks
3(b)	<p>Assess a range of different ways to manipulate fabrics in order to produce interesting design features and surface textures for clothing.</p> <p>Answer could include:</p> <p>By machine or by hand.</p> <p>Shirring the fabric by using shirring (thread) elastic, which will produce a gathered effect on the surface.</p> <p>Gathering the fabric, evenly or unevenly, similar effect to shirring; smocking.</p> <p>Fabric layers, adding one or more layers to produce texture such as in applique.</p> <p>Tucks, darts, pleats.</p> <p>Use of textures fabrics, possibly in sections, to produce a varied textured surface.</p> <p>Decorate/embellish a fabric by hand and then add this to a background fabric.</p> <p>Decorate a fabric by machine (e.g. free machining, automatic patterns) then use it to apply to another fabric.</p> <p>Add padding to the fabric to produce a quilted effect, e.g. trapunto quilting or shadow quilting; chemical lace; Devoré; shibori</p> <p>Folding the fabric: pleating, e.g. even knife pleats or even tucks, which will produce a thicker layered surface.</p> <p>Removing threads from sections of the fabric to produce a distressed effect.</p> <p>Removing areas of fabrics to produce holes and adding other fabrics to fill the holes.</p> <p>Weaving effects (must be relevant).</p> <p>Any other relevant examples.</p> <p>1 mark for a brief point.</p> <p>2 marks for a well-discussed point.</p> <p>Total for question 3: 25 marks</p>	13

Question	Answer	Marks
4(a)	<p>Compare the performance characteristics of staple fibre yarns with filament yarns.</p> <p>Answer could include:</p> <p>Staple fibre yarns: produced from shorter fibres, e.g. wool, cotton, flax, manufactured fibres (viscose, nylon, polyester, acrylic) which have been broken/cut into shorter lengths; absorbency, e.g. staple fibres absorb better than filament fibres.</p> <p>Ply yarns: more than one strand of yarn are twisted together; ply yarns tend to be stronger than single yarns.</p> <p>Filament yarns: produced by wet spinning; dry spinning; could be bi-component, e.g. silk, nylon, polyester.</p> <p>Filament yarns can be mono-filament or multi filament, flat filament or textured filament.</p> <p>Usually strong, although this will depend on the fibres used to produce the yarns</p> <p>Performance characteristics include:</p> <p><u>Strength</u> of the yarn.</p> <p>The <u>aesthetic</u> effect of the yarn, e.g. whether it is shiny (more common with filament yarns) or a matt finish (staple yarns).</p> <p><u>Special effect</u> of the yarn, e.g. whether the yarn is bouclé (bobbly) or has flecks of colour added (slub).</p> <p><u>Durability</u> – whether the yarn wears into holes easily: this may depend on how loosely or tightly the yarn has been twisted: whether S or Z twist; whether the yarn is a ply or not.</p> <p><u>Elasticity</u> of the yarn, e.g. wool has natural elasticity whereas manufactured fibres can have texture added, which can include a crimp, to make the yarns more elastic.</p> <p><u>Feel/handle</u> of the yarn, e.g. whether there is a soft feel (e.g. loose twist with a soft fibre used such as lambswool or silk noil) or rough feel (e.g. coarser wool staple fibres, loosely twisted as used in a tweed type fabric) or rougher/more hard surface, as produced by a polyester fibre mixed with a metallic thread.</p> <p>Feel/handle will also change according to how much twist has been used to produce the yarn.</p> <p>Any other appropriate point.</p> <p>Up to 8 marks for knowledge and 4 marks for understanding and comparison.</p>	12

Question	Answer	Marks
4(b)	<p>Discuss how a manufacturer would choose and estimate the quantities of all materials and components needed for the design task of a jacket.</p> <p>Answer could include:</p> <p>Manufacturer would need to look in detail at the specification of the task to analyse all the material needed.</p> <p>Components needed, e.g. thread, fastenings (zip, buttons, hooks and eyes, press studs).</p> <p>Materials needed, e.g. fabric, lining.</p> <p>Whether the fabric is standard and readily available, or if it is a special fabric which has to be specially printed – this will affect the cost of the final item and also the time needed to plan and make the item; width of fabric; type of fabric.</p> <p>Amount of materials/components needed for each individual item.</p> <p>Colour matching – making sure the colours of the components correspond/match with the fabrics to be used.</p> <p>Manufacturer would be given a specific cost of the item and would have to keep closely to that cost so that they can still make a profit after all costs had been deducted, e.g. machine rather than hand embroidery; time taken to make item.</p> <p>Manufacturer would make up one item to work out the exact materials needed and afterwards the final cost.</p> <p>A lay plan could be worked out to see how the waste fabric can be reduced, as this would affect the final cost of the item.</p> <p>Any other appropriate point.</p> <p>1 mark for identification.</p> <p>1 mark for expansion of this point.</p> <p>Total for question 4: 25 marks</p>	13

Question	Answer	Marks
5(a)	<p>Explain how a designer would decide on initial ideas for designs of textile items to be used as home accessories.</p> <p>Answer could include:</p> <p>Research theme - whether a new topic/theme is to be chosen or an established theme developed.</p> <p>Where the home accessories are to be used.</p> <p>Trends</p> <p>Safety (e.g. child's room).</p> <p>What sort of home accessories are to be designed.</p> <p>Are the home accessories part of a range/collection.</p> <p>What the colour schemes/trends are for the season being designed for.</p> <p>Whether there are fabric trends for a particular fashion season.</p> <p>What sort of fabrics to use.</p> <p>The fabric finishes needed on the home accessories.</p> <p>The costs of the final items.</p> <p>Any other appropriate point.</p> <p>1 mark for a brief point.</p> <p>2 marks for a well-discussed point.</p>	4

Question	Answer	Marks
5(b)	<p>Discuss what would influence a designer when choosing fabrics for cushions.</p> <p>Answer could include:</p> <p>Fabric specification should include: Fitness for purpose.</p> <p>Fibres used, e.g. natural or manufactured/synthetics.</p> <p>Fibre properties, e.g. strength, washability, durability, comfort..</p> <p>Where the cushions are to be used, e.g. decorative cushions with colour or heavier use such as one for regular use as in a child's room.</p> <p>Safety points, e.g. flammability of the fabric and whether special finishes are needed.</p> <p>What sort of aesthetic qualities are needed, e.g. shiny fabric (such as cotton chintz).</p> <p>Dyeing/printing qualities on the fabrics chosen for use.</p> <p>How easy the fabrics are to work with, e.g. can zip be inserted; piping; is it suitable for buttonholes or any other design feature</p> <p>Environmental points, e.g. are the fabrics from a sustainable source, Fair Trade origin.</p> <p>Which fabric finishes should be included and whether the fabrics chosen are suitable for these finishes.</p> <p>The cost of the fabrics.</p> <p>Aftercare properties, e.g. shrinkage, stain resistance..</p> <p>Care labelling.</p> <p>Any other appropriate point.</p> <p>1 mark for a brief point.</p> <p>2 marks for a well-discussed point.</p>	9

Question	Answer	Marks
5(c)	<p>Compare how decorated cushions would be made using <u>two</u> different manufacturing methods.</p> <p>Answer could include:</p> <p><u>One-off production</u>: possible for a small maker/business when the decorated cushions are made to order.</p> <p>Individual cushions designed to order for specific customers.</p> <p>Fabric/other materials ordered.</p> <p>Individual cushions are cut out by hand (shears/scissors).</p> <p>Cushions are decorated (using chosen method) by skilled worker.</p> <p>Cushion assembled: fastenings/seams/quality control/finishing/pressing/packaging.</p> <p>one worker likely to make up the whole decorated cushion</p> <p>More time may be taken for all stages.</p> <p><u>Batch production</u>: likely to be as small business which makes up specific numbers of decorated cushions, e.g. fifty to several hundred.</p> <p>Cushions are designed: sub assembly, e.g. decorative panel.</p> <p>Planning of materials/components/work areas/staffing/machines.</p> <p>Materials/components are ordered.</p> <p>Cushions are cut out in multiples.</p> <p>Decorative sections produced first.</p> <p>Cushions assembled: fastenings/seams/quality control/finishing/pressing/packaging.</p> <p>Workers would be allocated a specific task on the cushions, e.g. stitching seams.</p> <p>Specific time would be allocated to individual processes.</p> <p>If only information is given for one type of production method, up to max of 4 marks.</p> <p>If 2 types of production method given, up to 8 marks.</p> <p>Comparison points between both methods, up to max of 4 marks.</p> <p>Any other relevant points.</p> <p>1 mark for a brief point.</p> <p>2 marks for well compared point. Total for question 5: 25 marks</p>	12