1996 HIGHER SCHOOL CERTIFICATE EXAMINATION

TEXTILES AND DESIGN

In 1996, 920 candidates presented for the examination in Textiles and Design and, of these, 664 presented for the 2/3 Unit examination and 256 for the 3 Unit.

As in previous years, many candidates failed to draw large clearly labelled diagrams, confused fibre type and fabric construction, and possessed a poor knowledge of yarn properties and types as well as of yarn production.

2/3 UNIT (COMMON)

Section I : Science and Technology

Question 1 : Dyeing and Printing

In the best responses, candidates:

(a) were able to identify appropriate dyes for each of the fibres - cotton and nylon - as well as for cotton/nylon blend, justifying their choices with appropriate reasons;

(b) identified the forces of attraction between the dyestuffs and fibres identified in the previous part;

(c) were able to describe clearly the processes for dyeing a cotton/nylon blend fabric, explaining the chosen technology and incorporating diagrams into their answers.

In general areas of weakness candidates:

(a) • could not identify specific dyes required for cotton, nylon and cotton/nylon blend;

  • could not identify any specific types of dye-to-fibre bonds or discuss clearly the forces of attraction between the dyestuffs and fibres identified in the previous part;

- appeared to possess little or no understanding of the concept and implications of dyeing blends;

- failed to name appropriate colourfast dyestuffs suitable for dyeing a cotton/nylon blend fabric. Most of these candidates were unable to describe adequately the processes used to dye such fabric.

Question 2 : Finishing

In the best responses, candidates:

(a) gave a reason for each of their chosen finishes and a detailed explanation of the process used to apply each one. All four finishes were described in detail, while labelled diagrams of machinery, particularly for sanforising and brushing, were often used to aid explanations. A clear statement as to how each finishing method alters fabric characteristics and, in turn, achieves desired results, was included;

(b) fibres such as cotton and wool were named, as well as fabric types and/or construction methods that would benefit from each specific finishing process, e.g. jersey knit;

(c) specific textile products were named - e.g. carpet - and several benefits of the finish were listed.

In general areas of weakness, candidates:

(a) defined methods only or described in general terms, e.g. resin applied to achieve finish. Four processes were not chosen, although this was specified in the question. Details about machinery and chemical compounds used were confused, while explanations about how the desired finish was achieved were omitted;

(b) fibres named were unsuitable, while fibre category was given as the fabric type - e.g. 100% cotton fabric - and fabric names and construction methods were not identified;

(c) general uses, such as clothing/apparel, were stated rather than specific textile products that would benefit from each specific finishing process.

Question 3 : Properties and Performance of Textiles

In the best responses candidates:

(a) linked the concept of fibre and fabric structure to the specified end-use in great detail. In excellent responses students also discussed each yarn specified and discussed the inter-relationship of fibre and fabric as well as the end-use;

(b) • discussed morphological/molecular structures, and related them to the desired properties for their three chosen items;

   • described specific types of fabric structure.

In general areas of weakness, candidates:

(a) (i) either failed to give fabric structure or explained only limited points;

   (ii) were confused and either did not discuss fibreglass, or obviously did not understand the concept of insulation;

   (iii) were unable to decide whether acrylic gloves were knitted or woven;

(b) • in suggesting alternative fibres for their chosen articles gave too many options without justifying their choice;

   • rote learnt properties were listed but not explained in relation to the product.

Question 4 : Properties and Performance of Textiles

In the best responses candidates:

(a) gave detailed functional properties for each layer of a sleeping bag rather than simply making a general statement about its construction;

(b) identified fibre for each layer and adequately justified their choices with labelled diagrams of the structure of the specific fabric;

(c) named two appropriate finishes that could be applied to the external cover.

In general areas of weakness, candidates:

(a) made a poor choice of fibre for each of the three layers of a sleeping bag; that chosen for the insulation layer was especially unsuitable. Many chose wool for insulation - this is most inappropriate, while some chose feathers or down which are not fibres. A number of candidates chose unsuitable blends;

(b) treated the sleeping bag as a design question; many candidates drew the bag but did not name two appropriate finishes that could be applied to the external cover.

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Section II : Textiles and Society

Question 5 : Culture and Textiles

(a)   In the better responses candidates:

- successfully identified one traditional and one contemporary culture or a subculture;

- selected one textile item from each and sketched and labelled each. Well drawn diagrams with very descriptive labelling illustrated the chosen item;

- compared methods of production in detail;

- stated how each textile item promotes the customs, beliefs and values of the culture to which it belongs.

In general areas of weakness students:

- did not set out the question into the required parts and had difficulty in identifying a contemporary culture or subculture, and most responses were related to two traditional cultures;

- sketched poorly with very little or no labelling;

- did not discuss methods of production.

(b)   In the best responses candidates:

- answered the question by referring to at least three cultures, and discussed modesty, protection and adornment separately as reflections of the customs, beliefs and values of each one;

- clearly discussed specific aspects of clothing and textiles in connection with either modesty, protection or adornment, and correctly named examples.

In general areas of weakness, candidates:

- often answered the question by referring to only one culture or, in some cases, made no reference any specific culture;

- provided limited information and often did not appear to understand the terms *modesty* and *adornment*;

- simply defined *modesty*, *adornment* and *protection* in general terms without referring to any cultures.

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Question 6 : History of the Textile Industry

(a)   In the best responses candidates:

- showed a comprehensive understanding of the terms *technological developments* and *twentieth century*;

- discussed fully each of the given categories or areas as applied to the worker and consumer, giving for each a variety of examples drawn only from the twentieth century.

In general areas of weakness, candidates:

- had only a limited understanding of the terms *technological development* and *twentieth century*. They tended to concentrate on giving a list of technologies, inventions and working conditions from the eighteenth and nineteenth centuries or failed to discuss those of the twentieth century;

- appeared to possess only limited knowledge of the concept of training and development and the value of quality control for the consumer.

(b)   In the best responses, candidates:

(i)   • discussed three technologies that developed as a result of three major innovations, e.g. *spinning* 6 spinning-jenny, *weaving* - flying shuttle, *knitting* - circular knitting machine;

- gave thorough descriptions of each major invention.

(ii)   • discussed in detail how the quality and availability of textiles was affected by the introduction of each specific innovation, e.g. flying shuttle - quality of cloth was improved, being firmer and, therefore, more even;

- discussed in detail how availability was affected by the introduction of the innovation, e.g. circular knitting - fabric allowed seamless garments such as hosiery to be produced, thus facilitating fashion change involving casual clothes and emphasising comfort and movement and unisex clothing;

(iii)   • correctly named and described a twentieth century version of the innovation, e.g.
   Spinning   -   open end
   Weaving   -   sulzer, butted weft insertion
   Knitting   -   computerised involving nine colour fairisle

In general areas of weakness, candidates:

(i)   •   were unable to name three innovations or failed to name the correct name of the innovation;

        •   gave only very brief descriptions of specific innovations.

(ii)   •   discussed only briefly how the quality and availability of textiles were affected for the better by the introduction of the innovation.

(iii)   •   were unable to name a twentieth century version of the innovation;

        •   described the specific innovation very poorly;

        •   did not attempt the section.

Question 7 : The Australian Textile Industry

(a)   In the best responses, candidates:

        •   discussed the impact of computer technology on three of the areas listed;

        •   referred to computer-control of machinery rather than a personal computer;

        •   discussed the impact of the technology on industry in general as well as in three specific areas.

        In general areas of weakness, candidates:

        •   discussed the effects of technology on the textile industry in general;

        •   outlined historical developments briefly, with reference to pre-industrialisation rather than discussing today's computer technology;

        •   were unaware of recent developments in computer technology and its impact on three specific areas of the textile industry.

(b)   In the best responses, candidates:

        •   clearly stated *how* and *why* variety and consumption of textiles have changed;

- offered at least two different reasons with two specific examples for each issue, e.g.

  <u>Environmental Issues</u>

  - the increasing effect of the ozone layer
    6 sun-safe styles and fabrics for clothing
    6 use of natural fibres or fabrics and colours

  - effect of pollutants - air, water, noise
    6 discussion of research into manufacturing processes
    6 pesticides, fertilisers, chemical dyes and their impact

  - use of nature in designs by Australian designers.

  <u>Consumer Buying Practices</u>

  - demand for greater variety and availability of styles lead to mass production, quality control results from the quality demanded from Australian-made goods;

  - increased availability of cash, especially from teenagers and working mothers whose disposable income gives them increased buying power means that these markets cater for such people;

  - demand for easy care garments resulting from leisure/lifestyle , work;

  - awareness of consumer rights results in improved quality, style and availability.

In general areas of weakness, candidates:

- were unable to state the issues affecting variety and consumption of Australian textiles over the past two decades;

- failed to provide specific examples;

- did not link their discussions to the original statement in the question;

- talked *around* topic areas rather than *about* them.

Section III : Design

Question 8

The question involved fashion drawing skills.

In the best responses, candidates:

(a)   could give realistic sketches for the conventional outfits selected for each specific sport, incorporating design lines, features, colour, labels, and showed awareness of the special needs of garments for each purpose;

(b)   named specific fabrics, explaining in detail the functions of each sporting outfit;

(c)   gave clear sketches of each item and incorporating thoughtful design modifications and fairly detailed labels. The reasons for modifications were expressed clearly and fabric names and fibre percentages were often included.

(d)   used the modifications introduced in (c) ; some even changed these slightly to create the *new look*. These were well labelled and the changes justified.

In general areas of weakness, candidates:

(a)   did not sketch conventional outfits for sporting activities. In (a) the outfits did not include basic construction lines, e.g. crotch seams, sleeve seams, zipper openings in seams and features essential to specific garment function, e.g. leather patches on sleeves, reinforced areas on riding pants and jackets, protected zip openings on ski wear;

(b)   possessed little knowledge of fibres, fabrics and their properties in relation to specific uses. Most of these students discussed the suitability of garment style rather than fabric requirements;

(c)   suggested modifications that were little different from the original item. Sketching was poor with too few labels and few design links, particularly sleeve, crotch and zipper seams. Written explanations described the modified item without linking any modifications to the original design. Many gave *added* accessories rather than modifying the main garments, e.g. sunglasses, wristbands;

(d)   showed great variety in interpretation of this part. Some failed to answer the requirements of the question.

Question 9

In the best responses, candidates:

(a) clearly identified their speciality shop and compiled an extensive list of specific textile items;

(b) provided clear sketches of designs of three individual items; these included extensive labelling, e.g. colour, fabric/fibre, techniques and design features which were all identified;

(c) their aesthetic qualities were listed and outlined and justified in relation to the design;

(d) • described clearly the manufacturing processes that could be used in the manufacture of one of the specific textile items;

    • provided diagrammatic explanations that helped in this section.

In general areas of weakness, candidates:

(a) did identify a specific specialty shop, giving only a limited list of textiles for sale;

(b) provided sketches that were rough, difficult to interpret and poorly labelled. Spent far too much time in colouring in these sketches;

(c) either listed the aesthetic qualities of their designs with no explanation, or omitted this section;

(d) • listed processes, giving poor or no explanation and failing to show all the steps;

    • were obviously confused between testing procedures and manufacturing processes.

Question 10

In the best responses, candidates:

• sketched both front and back views of the outfit they had designed. The construction lines were clearly marked, and included armhole seams, points of entry, crotch seams;

• where sketching was unclear they used labels to supplement the design and clarify the ideas;

• used colour changes on a horizontal plane to give the illusion of reduced height;

- recognised the fact that, to create the illusion of increased body width, seams needed to be sewn around the body.

In general areas of weakness, students:

- failed to justify how their use of colour, proportion and seam lines achieved the desired effect;

- were confused between the direction of lines vertical and horizontal;

- showed a lack of understanding of proportion and its significance in garment design to create emphasis on the upper part of the body;

- used striped fabric in their designs instead of seam lines created by joining fabrics.

Question 11

In the best responses, candidates:

(a)   stated very clearly the original design brief and outlined the design clearly, showing their awareness of the difference between the two;

(b)   • included all relevant construction lines in their sketches as well as showing colour, fabric and fibre content. Labelling included all design features, both structural and applied;

     • used full pages for their sketches; most utilised the given silhouettes, showing both back and front views;

     • clearly identified two techniques used;

(c)   showed good knowledge of the design process and successfully adapted the original design to a new end-use, showing a logical progression, e.g. from apparel to non-apparel ,and included a clear, well labelled illustration;

(d)   were able to show their knowledge of at least two mass production processes, e.g. rotary screen printing, laser cutting, CAD, multi-sizing, and could apply such knowledge to a production line.

In general areas of weakness, candidates:

- failed to state their original design brief;

- showed little awareness of the difference between *brief* and *situation*;

- provided an incomplete design brief or a poor description of their brief;

- provided poor sketches - many were small and used neither the silhouette nor the full page;

- included little detail and the design product was not clearly recognisable, since the original design process was not adapted to a new end-use;

- often gave the design process for the original product but not for a new end-use;

- poorly illustrated the new end-use or their sketches were poorly or inaccurately labelled;

- possessed little knowledge of industrial mass production processes.

3 UNIT (ADDITIONAL)

Section I : Science and Technology

Question 1 : Fibre Structure

(a)   In the best responses, candidates submitted responses that were detailed and included:

- three different fibres and end-use for all three, i.e. natural, regenerated and synthetic fibres;

- for each end-use clearly identified both the morphological and molecular structures and, for each, discussed in depth at least three areas which related to their chosen end-use;

- provided clearly labelled diagrams.

In general areas of weakness, candidates:

- selected fibres that were not appropriate to the end-use given;

- did not relate the morphological and molecular structure of the fibre to the chosen end-use;

- provided no diagrams or failed to label the diagrams given;

- listed some properties only, although the answer required detailed information regarding the morphological and molecular structure.

(b)   In the best responses, candidates:

- showed a clear understanding of the terms *molecular* and *morphological* in relation to the chosen fibres;

- understood the concept of blending fibres and carefully explained the blending processes for the selected fibres;

- were able to justify their choice of specific blends for selected end-uses;

In general areas of weakness, candidates:

- lacked a clear understanding of the terms *molecular* and *morphological* in relation to their chosen fibres;

- were not able to explain how fibres are blended together;

- were unable to justify the chosen blends for stated end-uses;

- could not identify different fibre blends for two specific textile products.

Question 2 : Colour

(a)   In the best responses, candidates:

- clearly described how the spectrophotometer works and illustrated good descriptions with clear diagrams;

- could relate the role of the spectrophotometer to the CIE Chromaticity Diagram;

- accurately sketched and labelled the Chromaticity Diagram;

- understood the principles of additive colour-mixing employed in the CIE system.

In general areas of weakness, candidates:

- possessed little understanding of the workings of the spectrophotometer, while their explanations were illustrated with rough sketches;

- described poorly how the reflectance spectrum of a fabric is converted to a CIE colour specification;

- gave much irrelevant information, e.g. discussed metamerism.

(b)   In the best responses, candidates:

- knew the difference between additive and subtractive colour mixing in relation to the given fabric reflectance spectrum;

- could name four colours that would be perceived in daylight;

- listed examples of uses for colour-mixing, although only outstanding candidates mentioned energy;

- gave examples of the type of light emitted by incandescent light and provided diagrams of the incandescent light spectrum;

- accurately identified the effect of incandescent light on the four colours stated in (ii).

In general areas of weakness, candidates:

- gave incorrect answers to (ii) that resulted in incorrect answers for (iii);

- examples given of uses of additive and subtractive colours showed confusion between the principles of additive and subtractive colours;

- stated that incandescent lights have a blue tinge instead of red or yellow;

- diagrams given of incandescent light were confusing, since incandescent lights were shown as causing all colours to have a reddish tinge instead of moving up the spectrum.

Question 3 : Technological Developments

(a)   There were very few responses to this question.

In the best responses, candidates:

- discussed the shortening of production processes, including:
CAD	Laser cutting, computer pattern-making,
YARN	open-end spinning
FIBRE	micro-fibres
FABRIC PRODUCTION	shuttleless looms

- in discussing alternative fibre fabrics, included:
  microfibres - reason for their development, chemical composition, finishes for specific end-uses and properties

- also discussed wider use of textile applications, e.g.
  geotextiles - agriculture, medical, industrial,
  non-woven, space/travel.

In general areas of weakness, candidates:

- failed to give detailed responses;

- were unable to discuss technical details of any part of the question;

- gave no specific examples or gave examples that were irrelevant.

(b)   In the best responses, candidates:

- showed thorough knowledge of new fibres developed as well as new textile manufacturing techniques, specific properties, broader use of fabrics for new applications that justify the developments that have occurred, e.g.

Medical	-	barrier protection, hygienic clothing and floor covering, antibacterial finishes, absorbency factors.
Geotextiles	-	road stabilisation, rail embankments, support bank stabilisation, drainage, filtering.

In general areas of weakness, candidates:

- offered little detail;

- gave no specific examples;

- lacked knowledge of fibre or fabric production methods or of the reasons for these;

- offered irrelevant end-uses.

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Section II : Design

Question 4 : History of Clothing Design

(a)   In the best responses, candidates:

     (i)   outlined the history of the specific designer over a reasonable period of time;

     (ii)   sketched what was easily recognisable as a typical outfit of the designer, since it was well sketched and clearly labelled;

     (iii)   the adaptation clearly reflected the features of the designer's outfit and each new design feature was justified;

     (iv)   clearly indicated the further development of the 1996 outfit by successfully designing an evening-wear outfit.

In general areas of weakness, candidates:

- showed little appreciation of the concept of design's adaptation from one season to another;

- provided, in many cases, poor sketches and labelling;

- *added* to the designer's original outfit rather than *adapting* it.

(b)   In the best responses, candidates:

- discussed cultures equally and adequately;

- identified and described how clothing reflects social status in areas such as use of special symbols and motifs, and gave specific examples of each;

- described, with examples, lifestyle differences as they affect the type of clothing worn, such as festivals and special occasions, occupation and climate.

In general areas of weakness, candidates:

- discussed only one or two areas of social status and gave very few specific examples;

- did not mention lifestyle except to identify *wedding white* or *funeral black*.

Question 5 : Theatrical Design

(a)   In the best responses, candidates:

- explained the functional requirements of the costume in detail rather than simply listing them;

- listed the construction steps in correct order and in detail, e.g. type of seam or seam finishing;

- included the point of entry in their diagrams;

- understood that props can be carried on and off stage. These candidates clearly justified the props chosen to emphasise the message conveyed.

In general areas of weakness, candidates:

- provided no point of entry on their diagrams and generally gave no back and front view;

- merely listed functions without explaining them;

- did not understand that props can be carried on and off stage, confusing them with *sets*;

- failed to label diagrams or to take a creative approach to their designs.

(b)   In the best responses, candidates:

- provided back and front views of their designs, which were fully labelled;

- chose lead characters that were well recognised and represented creatures commonly found in the jungle;

- carefully related design features to the physical qualities of the character and described at least four characters;

- on the design of the stage set showed depth, props, backdrop, position of audience, fully labelled workings of stage features and materials used;

- described at least four lighting effects and related them back to the aspects of the performance.

In general areas of weakness, candidates:

- provided front *or* back view only of designs;

- failed to relate design features to the physical qualities of the characters and labelling was generally poor;

- designed two-dimensional stage sets, without consideration of the position of audience; props were inappropriate, while materials used for stage set features were not labelled;

- gave only general information about the use of lighting, without specific application to the performance in question.

Question 6 : Fabric Design

(a)   In the best responses, candidates:

- provided a design suitable for an exclusive shirt fabric and was not just a logo;

- showed a mature approach to design and incorporated the theme *Clean up your Backyard*;

- chose suitable methods for both exclusive and mass-produced fabric, described the processes through all steps up to the completion of fabric design;

- provided a modified design that showed its relationship to the original design as well as simplicity for ease of mass production.

In general areas of weakness, candidates:

- provided interpretations of the slogan that were either very simple or too literal;

- applied the design as a logo, while labels indicated colour only rather than the application of the design;

- described processes used to convert the design to fabric that were often unsuitable and badly explained;

- provided limited modification of the design and obviously possessed little knowledge of mass production.

(b)   In the best responses, candidates:

(i)   brought together in one detailed sketch a variety of ideas representing the Australian landscape. These sketches were extensively labelled;

(ii)   designed a suitable textile item with extensive labelling indicating scale, colours and specific fabric names, e.g. canvas, calico, batiste. In addition, these candidates indicated the development of their ideas.

(iii) presented a sketch of a detailed section that could be clearly interpreted and included clear labelling of the diagram;

(iv)   indicated four or more techniques and provided a very detailed description of two major techniques, such as surface decoration, e.g. screenprinting, silk painting, appliquJ.

In general areas of weakness, candidates:

(i)   at the most mentioned only one technique; this was described only vaguely, indicating lack of knowledge in this area;

(ii)   •   presented unrelated ideas that lacked cohesion. Their ideas were very limited, with some not even relating to the Australian landscape;

       •   had poor sketching technique, while their sketches were unlabelled and lacked meaning;

(iii) •   had no concept of scale and, as a result, their textile item was unsuitable for a foyer;

       •   designed a textile item that lacked colours and was not made of a specific fabric, although a fibre type was given;

(iv)   provided poor sketches of a detailed section of the textile item with no labelling of design features.