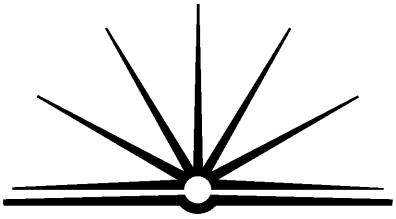

BOARD OF STUDIES
NEW SOUTH WALES

1999 HSC

Design and Technology

Enhanced Examination Report

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1999 Higher School Certificate Design and Technology Enhanced Examination Report

Introduction

The 2/3 Unit Design and Technology Syllabus was approved by the Board of Studies in 1992 for implementation in 1993 and initial examination in 1994. The syllabus was amended in 1993 for the purpose of Pathways, and implemented in 1994 for initial examination in 1995.

The Design and Technology Syllabus includes a Preliminary 2/3 Unit (Common) Course, an HSC 2/3 Unit (Common) Course and a 3 Unit (Additional) Course.

The 2/3 Unit (Common) Course involves a Related Study, a Comparative Case Study, Design

Projects and a Major Design Project.

The 3 Unit (Additional) Course involves a Core and a Specialised Study.

The syllabus focuses on the study of technology and its applications through design in domestic, community, industrial and commercial settings in rural and/or urban environments.

It provides opportunities for candidates to:

- become enterprising, creative and adaptable
- develop the ability to design in response to human needs and wants
- develop attitudes and skills which will empower them to initiate and respond to change
- develop confidence and competence in the management and use of materials, tools, and techniques
- develop thinking and practical skills, and apply theoretical concepts to the realization of practical solutions
- develop an understanding of a range of technological activities and their applications in a variety of enterprises
- develop a critical awareness and appreciation of the impact of current and emerging design and technology on the quality of life
- develop environmental and social responsibility in design, the use of technology and resource management.

In 1999, 4670 candidates presented for examination in the Design and Technology courses. Of these, 4109 presented for the 2/3 Unit course and 561 for the 3 Unit course. The standard in both courses was satisfactory.

2/3 Unit Common

The 2/3 Unit (Common) examination consists of TWO parts:

Part I: Written paper (40 marks)

Time allowed: $1\frac{1}{2}$ hours (plus 5 minutes reading time)

The written paper is divided into THREE sections:

Section I (10 marks)

Section I consists of TEN multiple-choice questions.

All questions are compulsory.

All questions are of equal value.

All questions are to be answered on the answer sheet provided.

Section II (15 marks)

Section II consists of ONE structured short free-response question.

The question is compulsory.

The question is based on the Comparative Case Study and Related Study.

The question is to be answered in the space provided in the examination paper.

Section III (15 marks)

Section III consists of THREE structured extended free-response questions.

Candidates attempt ONE question of the three.

All three questions are of equal value.

Each question is based on the Related Study and the Major Design Project.

In order to mark Section II and Section III of the 2/3 Unit (Common) written paper and the 3 Unit (Additional) written papers, accepted responses and marking criteria for each question are developed. This is achieved through a process of discussion and pilot marking. The marking criteria are developed to include all aspects of the question and provide for a full range of marks.

Part II: Major Design Project (60 marks)

Each candidate undertakes, on an individual basis, a Major Design Project for submission for the HSC (see p 28 ff).

Part I

Section I — Multiple-choice Questions (10 marks)

Question	Answer	Correct %
1	C	53.6
2	B	85.4
3	B	70.4
4	A	81.5
5	B	84.7
6	C	55.1
7	D	73.6
8	A	66.9
9	D	83.8
10	A	46.4

General Comments

Excellent responses

Candidates scoring 10 marks for the multiple-choice questions showed a broad understanding of design and technology issues in terms of development, production, standards and marketing. They were also able to understand the potential impact of designers' decisions on society, the environment as well as the long-term impact of product disposal.

Very Good responses

Candidates in this category showed an understanding of the development of a product, system or environment, and of the impacts of the decisions designers take about the long-term life cycle of the products of their work and the government standards that may apply.

Above Average responses

Candidates scoring in the 6 to 7 range generally could demonstrate an understanding of the process of designing and its impacts upon society and the environment in the short term. Generally, they also showed an understanding of management issues and social impact.

Average responses

Candidates in the average range gave evidence of an understanding of the process of design development and production, and its management.

Below Average responses

Candidates in the 3 to 4 mark range could show that they understood the development process of a design and its management.

Poor responses

In this category candidates generally showed limited understanding of designing and producing or were not knowledgeable about societal or environmental impacts.

Section II — Short-answer Questions (15 marks)

Question 11 (15 marks)

Name TWO organisations with contrasting structures. State the products and/or services that each organisation provides.

(a) For ONE organisation, describe how the organisation monitors the quality of its products or services.

(b) Compare how each organisation responds to or could respond to consumer feedback through procedures and policies.

(c) For each organisation, outline what you consider to be the barriers associated with change of EITHER work practices OR resource allocation.

(d) Suggest how ONE of the organizations you have studied might make use of new information technologies.

(e) For ONE organisation, comment on how short-term operating decisions have taken into account (or not) the long-term costs associated with the environment.

(f) For ONE organisation, use an example to explain how the evaluation of design and technological activities has led to changes to EITHER production, OR marketing, OR organisational efficiency.

General Comments

A broad range of answers over all question parts was presented. Most candidates were able to make an attempt at answering all parts.

Specific Comment

Parts that required advanced thinking skills elicited better responses from the better candidates.

The following items proved difficult for some candidates:

‘new information technologies’ led to a very broad range of responses.

‘short-term operating decisions’ – these were often confused with the more common short-term costs.

‘barriers’ – this was poorly understood.

‘resource allocation’ – very few candidates showed that they understood what this meant.

Marking Guidelines – Question 11 (Extended Answer)

17 – 20 marks	**Excellent** – states specific examples – explains the concept concisely using correct terminology – gives reasonable opinion – where required compares, giving details relating to both companies – predicts how a company could best respond to change.
13 – 16 marks	**Above Average** – gives general examples – usually uses correct terminology – states an opinion with little justification – gives good detail on one company compared with little detail on the other – predicts a company's response in general terms.
9 – 12 marks	**Average** – identifies the correct process or response – describes in general detail – gives an opinion, but often 'text book' type responses – compares at a general level.
5 – 8 marks	**Below Average** – gives a generalized description of a process but provides no reasons – compares 'type' answers, often repeats the same information for both companies – has difficulty in predicting how a company should respond to change.
1 – 4 marks	**Poor** – responds by often re-wording the question – gives information regarding one company but has difficulty in comparing the companies – has difficulty in explaining or giving opinion – misinterprets the intention of the question.

Typical Answers

Question 11

Excellent response

(a) DBG issues a running sheet at the beginning of each day, specifying the day's quota. Each employee fills the quota and evaluates his/her own work. Total quality management is used, so that continual improvement of the quality of the product is achieved.

Comment:

Concise explanation given, using specific examples and correct terminology.

(d) Melcoa could use the new technologies to upgrade their business. They could put themselves on the Internet, be able to track stock as it travels through the factory or to talk face to face with the General Manager in Japan through satellite phones.

Comment:

Good comparison of details on both companies. Specific examples were used.

Above Average response

(d) Caltex is a large organisation and it will make great use of new technologies, such as the Internet. It broadens the commercial area as well as giving out background information to the consumers, so that they know about the environment and health issues, etc.

Comment:

The candidate used the correct terminology but has responded in a very general way.

The use of 'etc' is not recommended – candidates should either elaborate or close the sentence.

Average response

(a) Organisation 1 monitors the quality of its products by appointing quality control personnel and these personnel continue to check the quality throughout the working day. This person will then do something about the quality if it is not up to scratch.

Comment:

Identifies a correct process and uses some correct terminology.

Description wanders and gives only generalised information.

Below Average response

(e) Austral bricks have had major meetings in this area. Due to the limiting sources of materials, Austral bricks do not waste any of their materials since they recycle their components.

Comment:

An attempt was made to deal with the question but many candidates failed to recognise what was being asked. Generalisations were used.

Poor response

(b) Form TEK and Austral bricks have basically the same response to consumer feedback through procedures and policies.

***Comment**:*

Candidates' responses are virtually a re-wording of the question and have not highlighted the form of response for either organisation.

Section III — Free-response Questions (15 marks)

Question 12

Develop a design for ONE of the following environments:

- *a landscape design for a small garden*
- *the interior of a music and CD store*
- *a play area in a childcare centre.*

For ONE of the above environments:

(a) Identify FOUR criteria to be considered when designing the environment.

(b) Discuss how the criteria will influence the development of the environment's design.

(c) Sketch and label your initial ideas for the environment.

(d) Outline the evaluation procedures you used throughout your Major Design Project. Show how these procedures could be used in evaluating the design of your environment in part (a).

General Comments

Candidates who were able to communicate a variety of ideas and information in both graphical and written form, giving appropriate detail, gained high marks in this question.

Marking Guidelines – Question12

17 – 20 marks	**Excellent** (a) written statements nominating an environment and clearly identifying four relevant criteria (b) a discussion of the four criteria listed in (a) which clearly showed how each influenced the development of the environment nominated (c) either a three-dimensional sketch or a good two-dimensional drawing. Freehand drawings, which included some shading, were common in this range but all showed clear outlines and well-defined, recognisable shapes and included a minimum of five labels. For full marks, additional drawings or written notes were given which illustrated or described a more comprehensive range of initial ideas (d) descriptions of at least two evaluation procedures used throughout their Major Design Project and descriptions of how these two procedures were used in evaluating the design of the environment referred to in part (a).

13 – 16 marks	**Above Average** (a) written statements nominating an environment and clearly identifying at least three relevant criteria (b) a discussion of the criteria listed in (a) which clearly showed how each influenced the development of the environment nominated (c) a good freehand two-dimensional drawing showing clear outlines and recognisable shapes which included a minimum of five labels as well as additional drawings or notes communicating a further two different ideas (d) descriptions of at least two evaluation procedures used throughout a Major Design Project as well as a description of how one was used in evaluating the design of the environment referred to in part (a).
9 – 12 marks	**Average** (a) written statements nominating an environment and clearly identifying at least two relevant criteria (b) a discussion of the criteria listed in (a) which clearly showed how each influenced the development of the environment nominated, or inadequate discussion of each of four criteria alluded to in (a) (c) a fair freehand, two-dimensional drawing showing outlines and recognisable shapes which included a minimum of five labels as well as additional drawings or notes communicating one additional idea (d) a description of at least one evaluation procedure used throughout a Major Design Project and a description of how this was used in evaluating the design of the environment referred to in part (a).
5 – 8 marks	**Below Average** (a) written statements nominating an environment and clearly identifying at least one relevant criteria, or a single word criteria listed without adequate relevance implied (b) a discussion of a criteria given in (a) which clearly shows how it influenced the development of the environment nominated, or inadequate discussion of a number of criteria alluded to in (a) (c) a fair freehand, two-dimensional drawing, showing outlines and recognisable shapes which included a minimum of five labels (d) a description of at least one evaluation procedure used throughout a Major Design Project or in evaluating the environment referred to in part (a).
1 – 4 marks	**Poor** (a) no written statements nominating an environment or identifying relevant criteria, or one or two vague, single word criteria listed without adequate relevance implied (b) one criteria poorly discussed and without adequately stating how it influenced the development of the environment's design (c) a poor freehand, two-dimensional drawing showing recognisable shapes, but with less than five labels (d) an inadequate description of one evaluation procedure used throughout a Major Design Project or in evaluating the environment referred to in part (a).

Typical Answers

Question 12

Excellent response

The environment chosen is a play area in a childcare centre.

(a) Safety: The play area must be safe to prevent the injury of children using the centre.

Ergonomics: The scale of the play area must be in proportion to the size of the children who will be using it.

Aesthetics: The play area must be attractive to children.

Durability: The play area must be able to withstand the elements and the wear and tear of the children who will be using it.

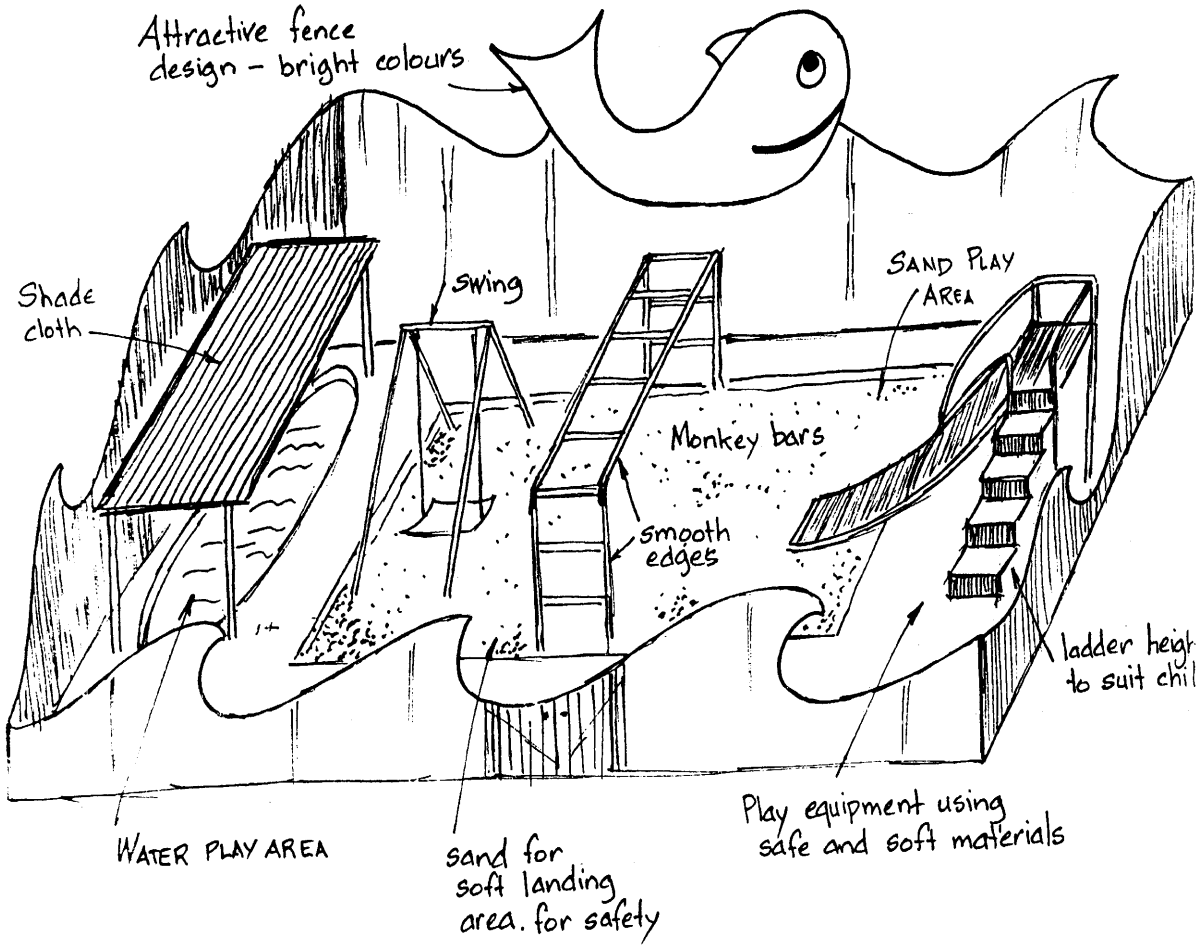
(b) Safety: Children's play furniture will need to be constructed of materials not likely to cause injury. Sharp corners or protrusions are to be avoided. Swings and slippery dips will need to be situated on sand or similar, to cushion impact that may cause injury to a child. The provision of shade is important to preventing sunburn.

Ergonomics: The steps of ladders will need to be designed to accommodate the height of a child's step. The height of the seats on swings must enable children to reach and sit on them comfortably. The height of platforms and monkey bars must be such as to enable children to reach them safely.

Aesthetics: The shape and colours of the equipment used must be appealing to the age group of the children who will be using the play area. Children could be surveyed to determine the kind of equipment that has the greatest appeal.

Durability: High durability paints must be used when painting timber, to prevent rotting and deterioration. Metals must be coated to prevent rusting. Apparatus must be strong and tested prior to use in order to establish its suitability.

(c)



(d) Evaluation procedures used throughout my Major Design Project were testing the reaction of a sample target market, conducting surveys and seeking the comments of experts. My MDP was a lounge chair and it was tested by the target market for comfort. I conducted surveys to establish the appeal of my MDP to the target market. I consulted a furniture designer to assess my work at various stages throughout its design. These procedures could be applied to the play area by inviting children (the target market) to use the area and watching them in order to assess their responses and I could seek out the advice of designers of children's play equipment.

The strength of my MDP was tested by applying weights to different joints. It was tested for durability by placing materials in sunlight and checking them for colour fastness. Tests such as these could be used to test the strength and durability of the joints and materials used for the equipment in the play area.

Above Average response

A play area in a childcare centre.

(a) The first criteria would be that the materials used in constructing the playground would be safe. The second criteria would be that the equipment would be educational to a child. The third criteria would be that the equipment should be coloured brightly and be appealing to a child. The fourth criteria would be that the structure must be ergonomic.

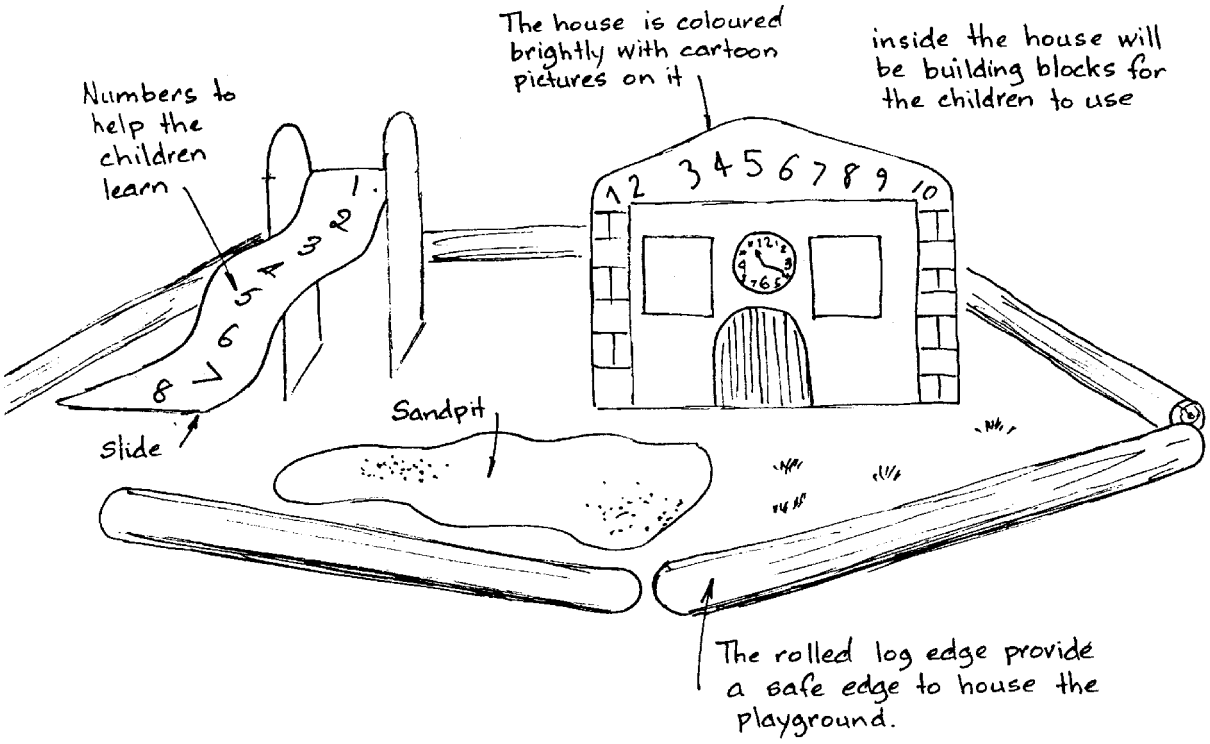
(b) The equipment will need to be designed with safety in mind. There should be no sharp corners and government regulations concerning safety must be adhered to.

The equipment could be made educational by painting numbers onto the slide or by providing a sandpit to assist children to develop motor skills.

In making the equipment appealing to children, it could be coloured brightly with cartoon pictures with interesting things such as slides and building blocks for children to play with.

For the equipment to be ergonomically designed, it must suit a child's form and their capabilities.

(c)



(d) In evaluating my Major Design Project, I referred back to my design brief and proposal in order to assess how I was satisfying the criteria, which I had set. I also distributed a survey/questionnaire amongst pupils in the school of a variety of age groups to evaluate their responses to my MDP and to gain feedback. In evaluating the design of the childcare centre, a survey/questionnaire could be distributed amongst parents and users of the centre. This would enable me to plan what modifications needed to be made.

Average response

(a) Four criteria to be considered when designing a play area in a childcare centre:

Criteria: It is very important that it is safe for children of a very young age.

It must be of a size which is comfortable for young children, accessible.

Government Legislation.

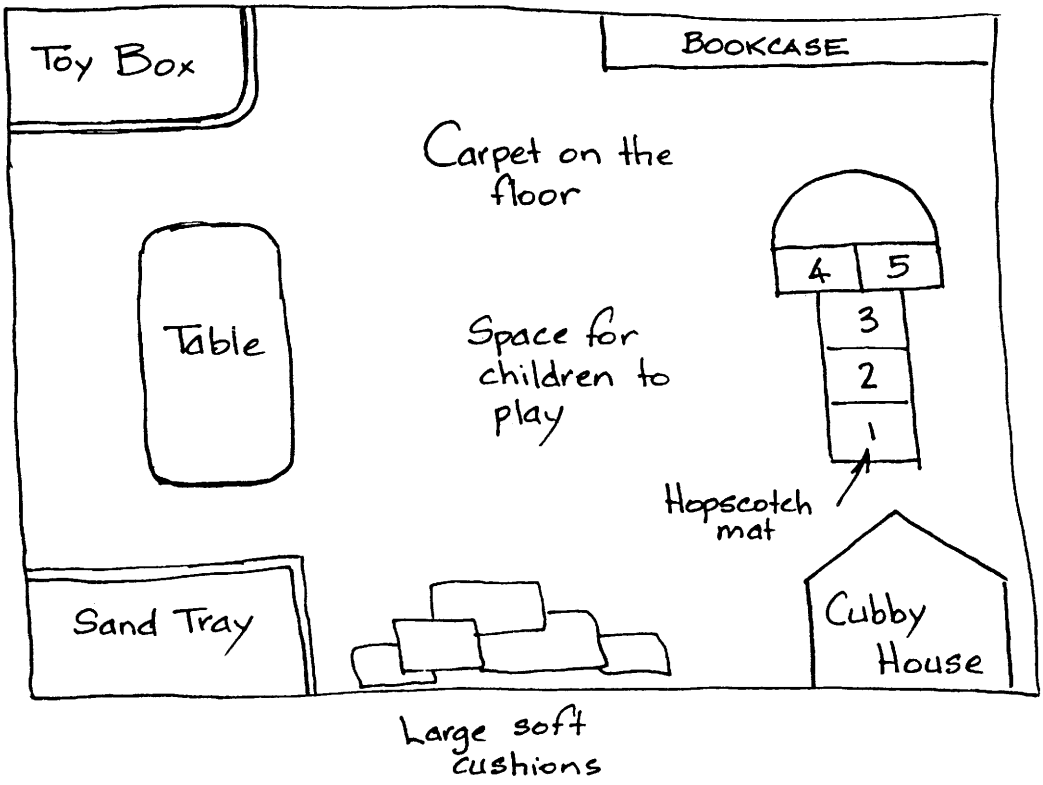
(b) This environment will need to be very safe because there will be young children playing. It will have to be designed with no sharp or hard corners and carpet on the floor so that it never gets slippery.

It has to be large enough so that more than one child can play at a time.

Adults have to be able to access all parts and be able to supervise the children.

It has to be allowed by the government.

(c)



(d) I drew concept drawings and evaluated each drawing by surveying my friends and selected the one which best suited the need. These procedures could be used in evaluating the children's play area by doing concept drawings and getting the owner of a childcare centre to help evaluate them and pick out the best.

Below Average response

A play area in a childcare centre

(a) Criteria: Safety

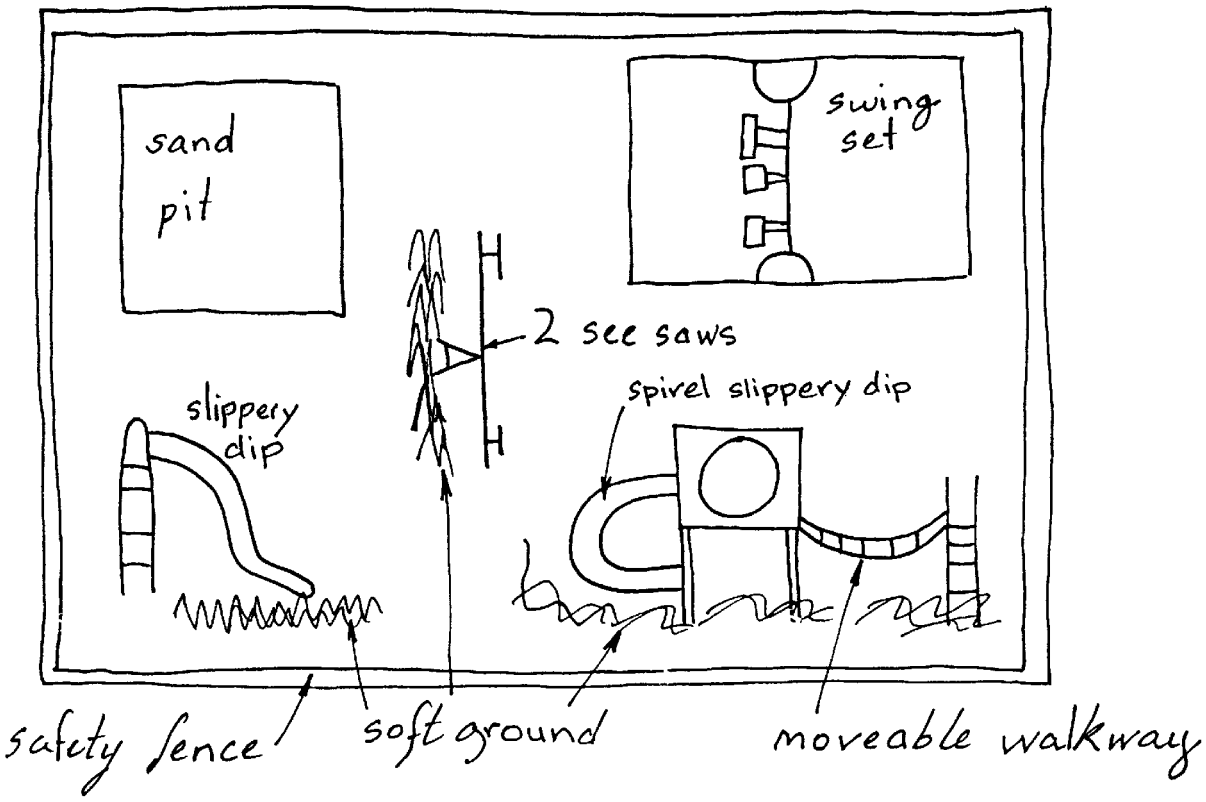
Size

Cost

Materials

(b) The environment will be influenced by the criteria and everything will have to be designed with safety in mind as well as being allowed by the government. Research into the size needed for more than one child to play at a time will have to be carried out. The size and safety will depend on how much money is allocated to what materials and how much material can be used so this will also influence the design.

(c)



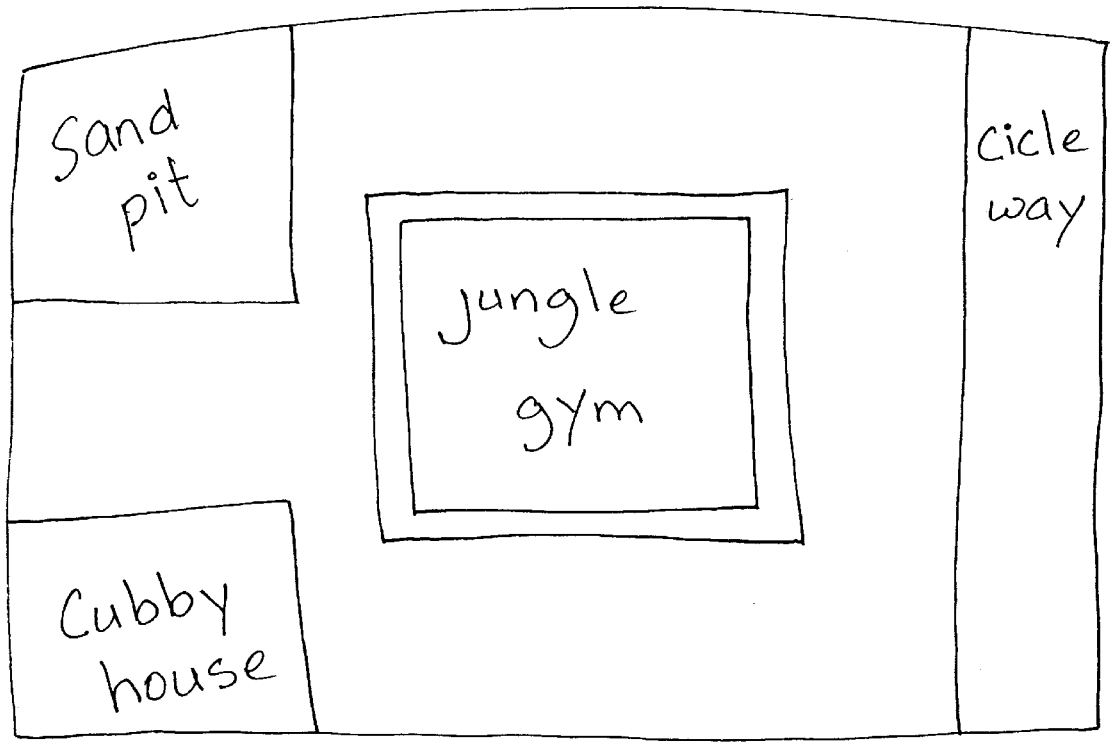
(d) The evaluation procedures I used for my MDP were interview and does the end product fill the intended need as well as ongoing evaluation from start to finish. These evaluation procedures would be used to evaluate the childcare centre as this design has to fill the intended need of the people using it.

Poor response

(a) Eye catching, Well laid out, Easy to use, plenty of room.

(b) The way that the criteria will influence the development is that the whole development will be based around the criteria. So, if there are any decisions to be made, they will be based around the criteria. The criteria influence the whole development.

(c)



(d) The evaluation procedures I used for my MDP were interview and does the end product fill the intended need as well as ongoing evaluation from start to finish.

Question 13

A manufacturer plans to introduce a new remote control unit. The drawing below represents the existing model. The new unit will retain the same functions. [Refer to the examination paper for the picture of the remote control unit.]

(a) Analyse the existing model. Propose and justify THREE design changes to improve its ease of use.

(b) Sketch your proposal for the new model, indicating its design features.

(c) Explain details of a test(s) you would use to determine whether your proposed new model is an improvement on the existing model.

(d) For your Major Design Project, describe a significant test that you used to compare initial design ideas. Explain how the results of the test affected subsequent design decisions.

General Comments

The question was chosen by a majority of candidates because of their familiarity with the design of a 'remote control'. Most candidates could respond well to all parts of the question. Those who misinterpreted the question were very small in number.

Specific Comments

Most candidates understood and responded well to all parts of the question. Candidates were not as confident in relating tests to design proposals and initial design ideas related to their MDP. Some candidates were not able to explain appropriate tests.

The following items proved difficult for some candidates:

Many did not 'analyse the existing model' at all, while some integrated their analysis in the second part of the question.

Marking Guidelines – Question 13

17 – 20 marks	**Excellent** – critically analyses aspects of the remote control – provides examples and justifies modifications for ease of use – produces high quality sketches indicating changes in design – describes several appropriate tests for the new design – evaluates tests with detailed discussion of the MDP.
13 – 16 marks	**Above Average** – identifies positive and negative components of the remote control – justifies some design changes – produces a quality sketch with a clear description of a suitable test – describes a significant test and relates it to the MDP.

9 – 12 marks	**Average** – identifies three changes with little analysis – provides a clear sketch indicating three changes – describes ONE test with no evaluation of results – refers to subsequent design decisions.
5 – 8 marks	**Below Average** – identifies one or two features with no justification – provides a general two-dimensional sketch with limited detail – describes a test with no comparison but adequate test details – indicates some reference to the MDP. Limited modifications.
1 – 4 marks	**Poor** – lists one proposed change – provides a simplistic sketch, which is unrecognisable – provides limited discussion throughout.

Typical Answers

Question 13

Excellent response

(a) Analysis of an existing model.

- Existing model is not very ergonomically sound. It is large with small buttons and has square edges.
- The buttons on the control are very close together, considering the size and space available on the control.
- The buttons are not well labelled and are not easy to read. The writing is small, which may cause confusion whether the labels relate to the buttons above or below.
- The buttons are all grouped together in the centre of the unit, which may make it difficult to press buttons individually.

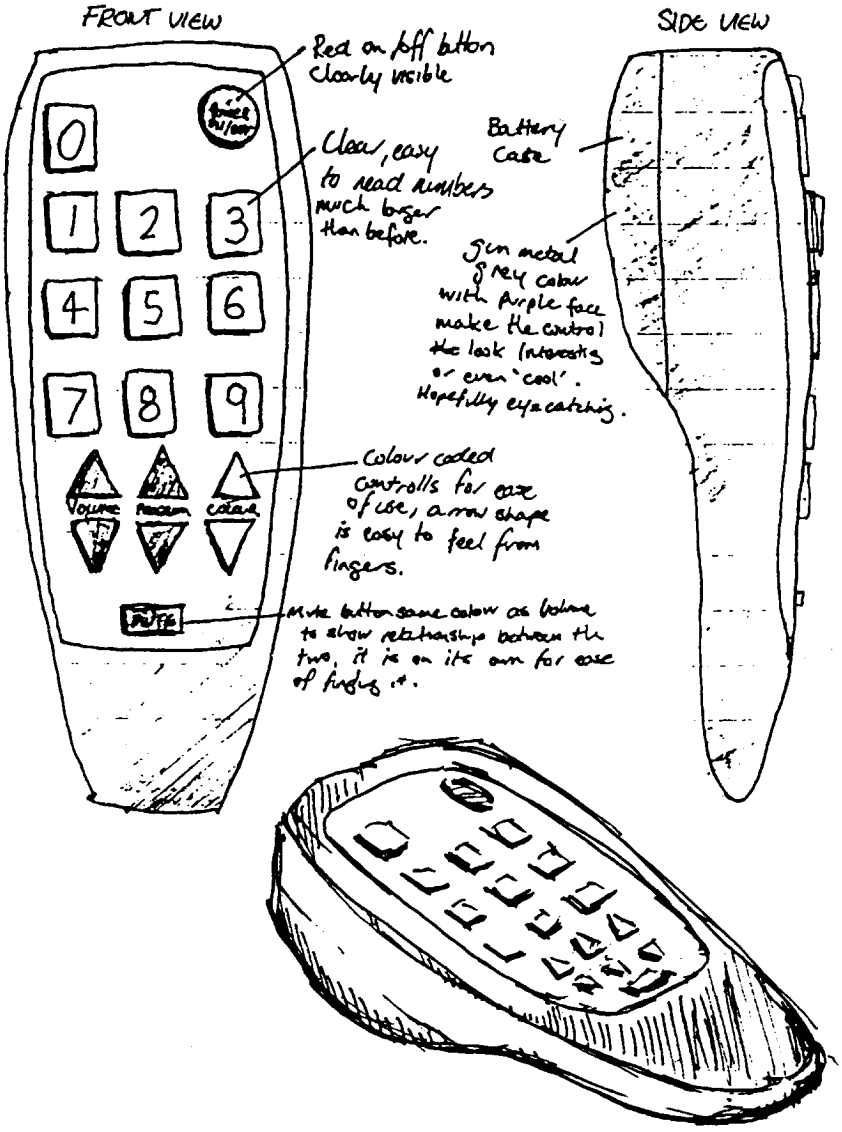
Propose Changes and Justification

Change design to a more ergonomic shape by contouring edges and corners. This will make the unit more comfortable to hold, fitting the hand making it easier to use.

Spread out the buttons creating larger spaces between them and allowing an increase in button size as well. The user can easily identify the correct button without the problem of activating the wrong function.

Labelling should be larger and more distinct, with numbers placed on the buttons. Use symbols to indicate function, and colour code groups of buttons. Larger labelling would avoid confusion and promote simplicity of use and ease of recognition and operation in use.

(b)



Above Average response

(a) Analyse:

- existing model is not very comfortable to hold.
- buttons are close together.
- buttons are not well labelled.
- buttons are grouped close together in the centre of the unit.

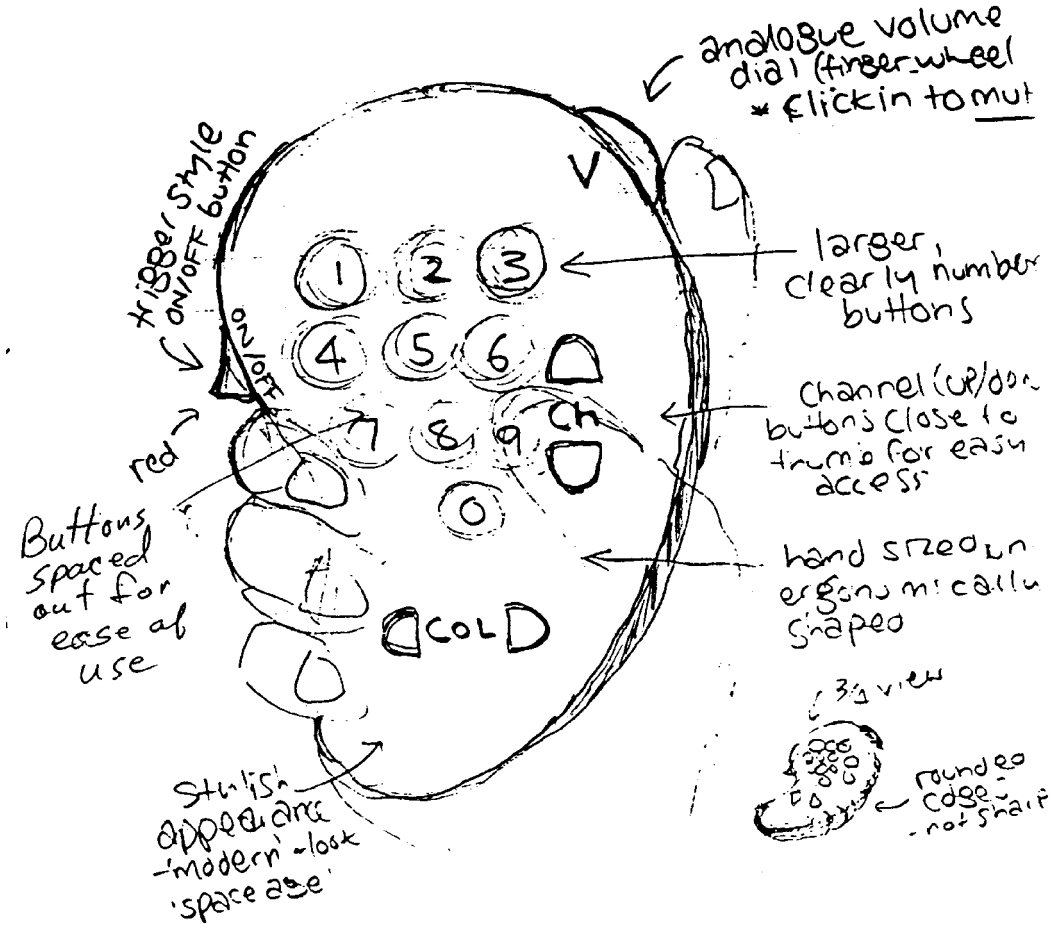
Propose changes and justify:

Changed the shape, rounding the edges and corner. More comfortable to hold, easier to use.

Space out buttons or make buttons bigger. Easier to press button, stops pressing wrong button.

Make labelling on button clearer. Easier to see function and making it easier to use.

(b)

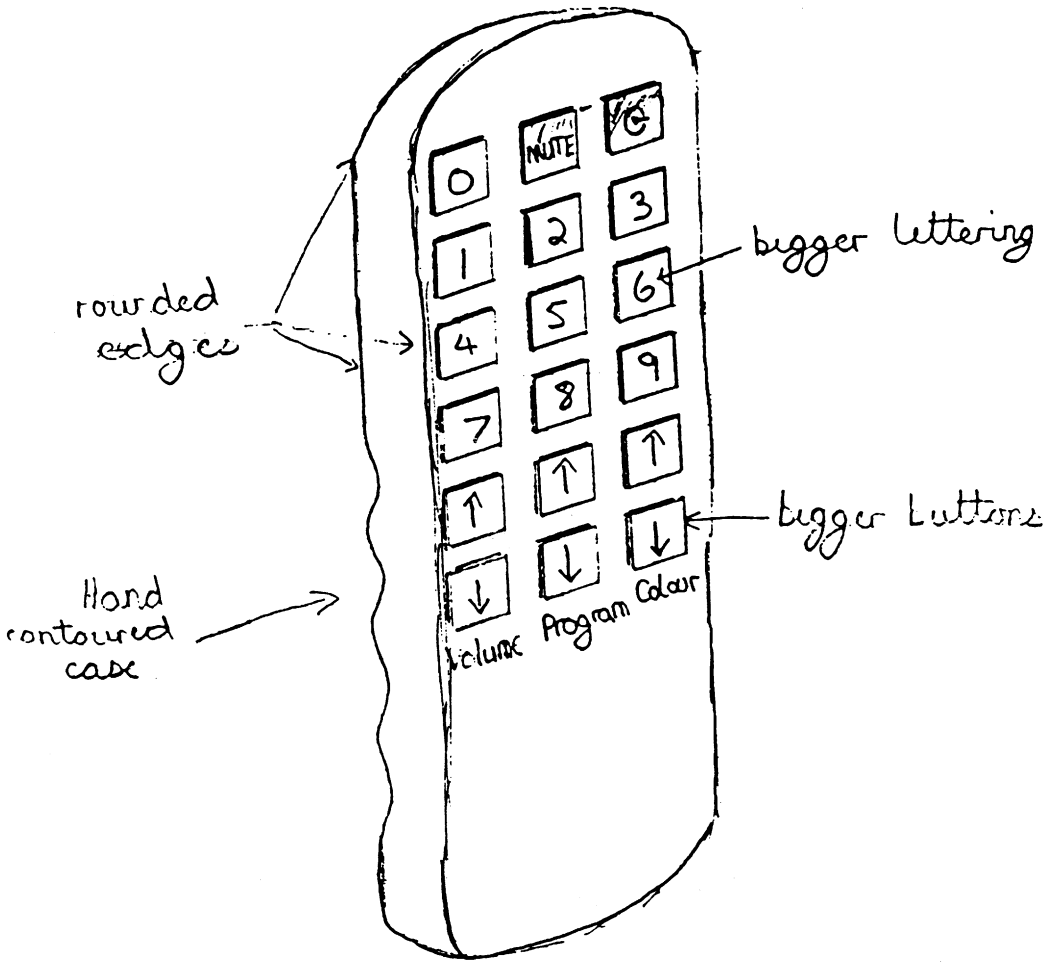


Average response

(a) Plain shape, buttons are too small, and buttons are close together.

- change the shape to fit comfortably into hand for ease of use.
- make buttons bigger so they are easier to recognise and press.
- space buttons out to prevent pressing two buttons at once.

(b)

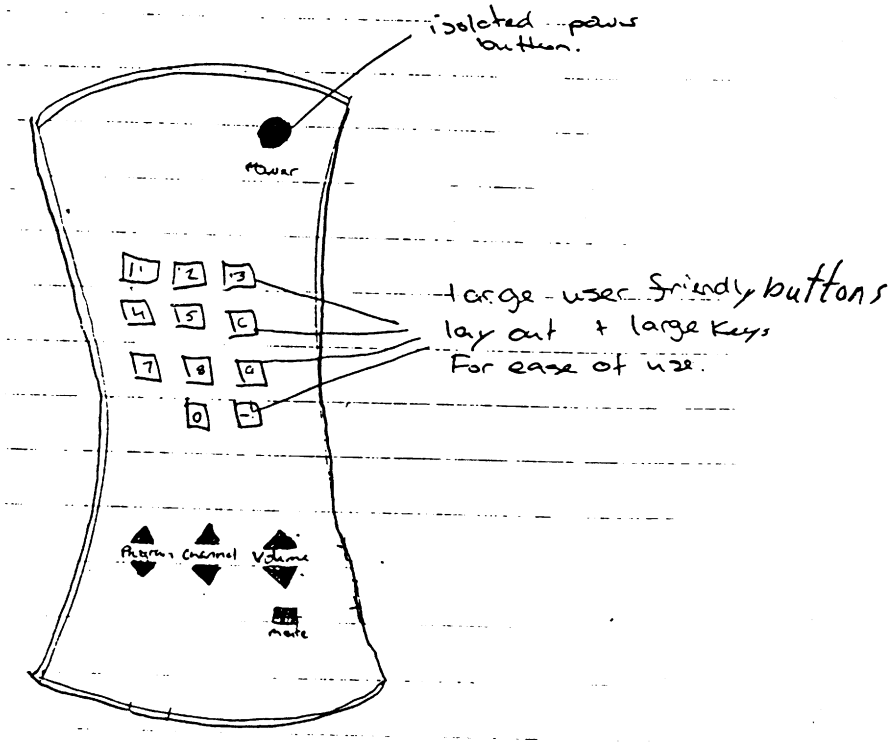


Below Average response

(a) An ordinary looking design. Very simple.

Change the shape, make buttons bigger, space them out. Makes it easier to use.

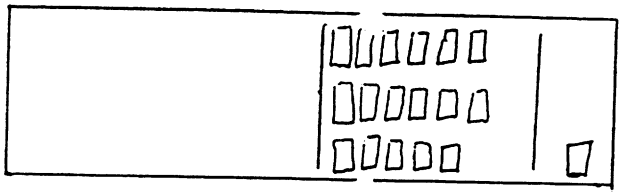
(b)



Poor response

(a) Bigger buttons, make smaller, change button size.

(b)



Question 14

A manufacturing company is introducing a new range of sunglasses.

(a) Identify a target market.

(b) How would you establish the characteristics and needs of the target market?

(c) Develop a marketing strategy that would appeal to the target market.

(d) Sketch a counter display for the new range of sunglasses that complements the marketing strategy. Label the key design features.

(e) Evaluate the appropriateness of the presentation techniques you implemented to communicate the purpose of your Major Design Project to target audiences.

General Comments

This question allowed candidates to apply their knowledge and understanding of marketing to a hypothetical manufacturing company. Candidates were required to express an understanding of the marketing process and communicate their ideas, using sketches and labels. The relevance of presentation and target markets was further reinforced, with candidates evaluating presentation techniques applied to their Major Design Projects.

Specific Comments

It was evident from the range of responses that the process of marketing was not fully understood. The resulting responses focused primarily on ‘promotion’ and lacked any real depth of expression dealing with ‘product’, ‘price’ and ‘position’. Sketching overall was well done yet many responses relied heavily on labels to add clarity. In a small number of cases, candidates failed to respond to section (e) in terms of their MDP.

The following items proved difficult for some candidates:

‘target market’

‘characteristics’ – in the context of a target market.

Marking Guidelines – Question 14

17 – 20 marks	**Excellent** – explains target market – identifies techniques and methodologies and supports with discussion – provides an informed sketch, which is clear, containing valuable labels – discusses a variety of positive and negative aspects – selects appropriate marketing strategies.
13 – 16 marks	**Above Average** – identifies a target market – provides relevant research techniques and information – explains in context marketing strategies / focuses – provides a sketch to indicate the target market – discusses some positive and negative aspects.
9 – 12 marks	**Average** – identifies a target market in general terms – explains a limited range of research methods – uses sketches with little detail – provides a general understanding of MDP analysis.
5 – 8 marks	**Below Average** – defines a very broad target market – identifies research techniques, which are hard to develop – produces a sketch displaying elementary understanding of market strategies and the target market – provides limited presentation techniques.
1 – 4 marks	**Poor** – identifies an elementary form of target market – provides elementary marketing strategy – produces a sketch with vague relevance.

Typical Answers — (for part (a) ONLY)

Question 14

Excellent response

(a) The target market will be teenagers. Girls and boys aged between 12-19. They will also be associated with surfing or hobbies including surfing the beach, swimming and sports.

Comment:

Several features of target market clearly identified, eg age, hobbies, sport.

Above Average response

(a) Age 16-25 (male/female)

Average to high income, outgoing persons who live near the beach.

Comment:

*S*ome features identified.

Average response

(a) Having people aged 15-25 who are interested in sport and leisure activities such as the beach.

Comment:

Limited area identified.

Below Average response

(a) A target market for the manufacturing company could be young girls and boys.

Comment:

A general statement only.

Poor response

(a) Any highly populated area on the East Coast of Australia would be a good target market. eg. Sunshine Coast, QLD.

Comment*:*

Target market not identified.

Part II: Major Design Project (60 marks)

Each candidate undertakes, on an individual basis, a Major Design Project for submission for the HSC. The Major Design Project includes the submission of:

- a product, system or environment
- a folio documenting the Project Proposal, Project Management, Project Development and Realisation, and Project Evaluation related to the designing and production of the product, system or environment.

At the pilot marking stage, markers are trained to mark all types of projects according to the marking criteria as set out in the KLA Handbook.

HSC markers travel to schools or centres to which the project has been submitted. In cases where it is essential that the project requires viewing or operation *in situ*, markers will travel to the candidate's home or a location at which the project has been set up for marking.

Pilot marking and HSC marking of each candidate's Major Design Project takes place during late Term 3. Wherever possible, the project and folio should be marked at the school the candidates attend. However, photographic evidence in the folio of the final position of the project will suffice to 'prove' the relationship of the project to the proposal. In cases in which candidates' work is developed off site, teachers need to maintain a detailed record of direct supervision at the remote location.

Each marker is supplied with a checklist devised from the marking criteria set out in the KLA Handbook to assist in ensuring that candidates cover the criteria of the Major Design Project.

The Major Design Project is marked holistically. Markers examine the folio and the product, system or environment (PSE) together. Decisions made by candidates in the conception and development of a Major Design Project are shown in the PSE and mirrored in the folio.

Markers Comments

The Project Proposal is an essential component of the Major Design Project. It should be documented in the folio and should include:

- identification of the needs leading to the development of the project
- areas to be investigated
- criteria established to evaluate success.

The examiners use the Project Proposal to determine the intent of the project and to judge its success in relation to this intent.

Marks	Project management
15 marks	**Excellent** – clear and concise evidence of planning in terms of Action, Time and Finance. This should be in the form of prediction in the folio, then evidence provided of the plan being implemented. – variations to the predictions are acceptable as long as explanation is made to account for the reasons why the planning had to be modified (ongoing evaluation). – candidates show a range of resources, the selection of the resource used, its justification and evidence that the resource has been utilised in the PSE. – candidates exhibit very good organisational skills and included only information which was relevant.
11 – 14 marks	**Above Average** – evidence in the folio of advanced planning in terms of Action, Time and Finance, and evidence of the plan being implemented in the PSE. – variations to the predictions made, with some explanation to account for the reasons why the planning had to be modified. – candidates showed some resources, justified the selection of the resource used and provided evidence that the resource has been utilised in the PSE. – candidates showed good organisational skills and included information which was mostly relevant.
6 – 10 marks	**Average** – some evidence of planning in terms of Action and/or Time and/or Finance, often incomplete and often clearly done 'after the event'. – variations to the predictions were often made, with little or no explanation to account for the reasons showing why the planning had to be modified. – candidates often justified the selection of the resource used but did not examine alternative resources. The resource documented had been used in the PSE. – candidates' organisational skills were average and they included information which was usually relevant.

2 – 5 marks	**Below Average** – evidence of planning in terms of Action and/or Time and/or Finance were usually sketchy, only paying lip service to the criteria headings. They were mostly incomplete and often obviously done 'after the event'. – variations to the predictions were made with no explanation to account for the reasons why the planning had to be modified. – candidates selected the resource used but did not justify its selection or examine alternative resources. – candidates' organisational skills were limited, with folios that often included bundles of brochures which had not been evaluated to come up with conclusions relevant to the PSE.
Below 2 marks	**Poor** – little evidence of planning or documentation in terms of Action and/or Time and/or Finance. – candidates selected the resource used. Little to zero documentation was provided, only shown in the PSE. – candidates' organisational skills were minimal. Folios were close to non-existent.

Marks	Project development and realisation
38 marks	**Excellent** – clear evidence of the candidate's having tried things out to determine the most appropriate materials, tools, techniques and resources, then recording and drawing conclusions from such trials. Candidates validated the appropriateness of the research methodologies used and the use of existing data where appropriate. They clearly related the outcomes of the research to the success of the concept's development and the final design. – candidates tested whole or parts of design solutions against standard criteria such as an Australian Standard. This often involved a prototype, mock-up or simulation. Once again, conclusions drawn were applied in the final PSE. – candidates communicated *effectively and concisely*, avoiding unnecessary 'padding'. The documentation technique was appropriate for the PSE. Often, a range of techniques was used, these included WP, DTP, models, video presentations, CD-ROMs, etc. – candidates presented a *very high quality* result suiting the type of PSE and the accompanying folio showed a record of the processes undertaken, log or diary and photographic evidence of production steps and the candidate's skills. – candidates identified and used a range of ideas in the production of the PSE. Creativity and/or innovation was exhibited in the PSE itself or in its production. Practical problem-solving often provided a vehicle for creative ways of overcoming difficulties in using a tool, a piece of equipment or a material resource in a creative way.
33 – 37 marks	**Above Average** – clear evidence given of the candidate's having tried things out to determine the most appropriate materials, tools, techniques and resources, then recording and drawing conclusions from such trials. The outcomes of the research were related to the success of the development of the concept. – candidates showed some testing of parts of design solutions. This often involved a prototype, mock-up or simulation. Conclusions were applied in the final PSE. – candidates communicated *effectively*. The documentation technique was appropriate for the PSE. A smaller range of techniques was used. These included WP, DTP, models, video presentations, CD-ROMs, etc. – candidates presented a *high quality* result and the accompanying folio showed a record of the processes undertaken and/or a log or diary and/or photographic evidence of production steps and the candidate's skills. – creativity and/or innovation was usually shown in the PSE itself or in its production. Practical problem-solving was often evident.

19 – 32 marks	**Average** – limited evidence given of the candidate determining the most appropriate materials, tools, techniques and resources. Some documentation and conclusions were drawn. Candidates related the outcomes of their decision-making to the success of the project development. – candidates showed limited testing of components or processes. This sometimes involved a prototype, mock-up or simulation. Conclusions were usually applied in the final PSE. – candidates communicated *quite well*. The documentation techniques used were appropriate for the PSE. A limited range of techniques was used, candidates mostly used WP or DTP. – candidates presented a poorer quality result and the accompanying folio showed some record of the processes undertaken. Lower quality diaries and/or photographic evidence of production steps and candidates' skills were sometimes provided. – creativity and/or innovation were less frequently exhibited in the PSE or folio. – practical problem-solving was evident in varying degrees.
17 – 18 marks	**Below Average** – candidates usually stated what they were making and what material they were going to use, but with little or no research into other appropriate materials, tools, techniques and resources. Usually, however, they used appropriate resources to produce their PSE. – candidates showed little in the way of testing of components or processes. – candidates' communication ability was limited**.** The documentation techniques used were very basic and brief, often including syllabus headings with minimal information. Folios were often incomplete and poorly organised. – quality of solutions was inadequate in this range. Most candidates clearly did not place enough emphasis on 'quality' and consequently did not spend enough time on either the PSE or the folio. Diaries and/or photographic evidence of production steps were often produced after the event. – creativity and/or innovation were rarely evident in the PSE or folio. – candidates tended to present 'off the shelf' type projects.

Below 16 marks	**Poor** – candidates documented little or no research into other appropriate materials, tools, techniques and resources. – candidates showed nothing in the way of testing of components or processes. – candidate's communication ability was poor**.** The documentation techniques used were brief or non-existent, rarely displaying any knowledge of the syllabus Requirements. Folios were mostly either incomplete and very badly organised, or non-existent. – minimal quality solutions were predominant in this range. Most candidates clearly did not place emphasis on 'quality'. The projects were incomplete, indicating poor organisational skills and lack of initiative and motivation. – there was no evidence of creativity in this range.

Marks	Evaluation
7 marks	**Excellent** – clear evidence was given of the candidate's evaluating resources, systems, processes and decisions throughout the entire project. The PSE itself showed evidence that the candidate's evaluations had an impact on the PSE and that conclusions drawn had been duly applied. An ongoing evaluative process was an essential ingredient for a successful PSE. – candidates considered the aesthetic and functional properties of various solutions, ensuring that the properties used matched the intended use of the PSE – candidates considered and evaluated whether their solution satisfied the intended purpose. The aesthetic and functional properties of their solution worked well; they often obtained professional evaluations of their PSE. – candidates evaluated the impact of their PSE on the environment, be it immediate, local or global. Where appropriate, consideration of the impact of their PSE either negatively or positively, on social and environmental costs to society. – life-cycle analyses (cradle to grave) of components were common. – candidates looked back at their original proposal and evaluated the effectiveness of the PSE in terms of the criteria specified there.
5 – 6 marks	**Above Average** – evidence of the candidate's evaluating resources, systems, processes and decisions throughout the project. Evaluations made had an impact on the PSE and conclusions drawn had been applied. Ongoing evaluation was evident most of the time. – candidates considered the aesthetic and functional properties of their solutions trying to ensure that the properties used matched the intended use of the PSE. – candidates considered and evaluated whether their solution satisfied the intended purpose of their PSE. Some candidates obtained professional evaluations of their PSE. – candidates attempted to evaluate the impact that their PSE had on the local or global environment. Social consequences were also considered. – candidates related their evaluation back to the original proposal and assessment criteria.

3 – 4 marks	**Average** – limited evidence of the candidate's evaluating resources and/or processes throughout the project; the evaluation process was, however, mainly done in heading form at the end of the folio. Evaluations made had some impact on the PSE. – candidates considered the aesthetic and functional properties of their PSE. – candidates attempted to evaluate the aesthetic and functional outcomes of their PSE. – candidates usually evaluated the success of their PSE in terms of 'I like it' or 'it works'. – candidates often associated the impact of their PSE on the environment, with whether or not it used sustainable resources. Social consequences were rarely considered. – candidates did not competently relate their evaluation back to the original proposal and criteria.
1 – 2 marks	**Below Average — Poor** – provided some evidence of the candidate's evaluating resources and/or processes. – aesthetic and functional properties of the PSE were almost non-existent. – evaluation of the aesthetic and functional outcomes of the PSE was poor. – candidates usually did not address the impact that their PSE had on the environment. – candidates did not relate their evaluation back to the original proposal or assessment criteria.

3 Unit (Additional)

The examination consists of TWO parts:

Part I – Written Paper (20 marks)

Time allowed: 1 hour (plus 5 minutes reading time)

The written paper consists of TWO sections:

Section I (12 marks)

There is ONE COMPULSORY extended free-response question drawn from the Core.

The question may involve candidate response to stimulus material.

The question is to be answered in a separate writing booklet.

Section II (8 marks)

There are THREE structured short free-response questions.

Candidates attempt ONE of the three questions only.

All the questions are of equal value.

The questions are based on the Core.

The question is answered in a separate writing booklet.

As with the 2/3 Unit free-response questions, the accepted responses and marking scales are developed before marking for each 3 Unit question. All responses are double-marked.

Part II – Specialised Study (30 marks)

The Specialised Study is sent to the Board and is marked at the same time as the written examination. Marking is kept precisely to the marking criteria as set out in the KLA Handbook.

Two teams of markers mark each report. It is stressed that candidates must keep to the word limit of 2000 words. The supporting materials, 2/3 Unit Major Design Project folio extracts, maps, charts, drawings, computer print-outs, video or audio tapes are not included in any word count. Only words relating to the study itself are counted. If the study is substantially over 2000 words, it is brought to the attention of the Supervisor of Marking who determines which section of the study is excessive in length and considers to what extent the candidate may gain an unfair advantage from the excessive length. In discussion with senior markers and assistant supervisors of marking, the supervisor of marking makes an adjustment accordingly. Every case is viewed individually.

Less than 3% of Specialised Studies were considered to be excessive in length in the 1999 HSC Examinations. However, some of these were as long as 6000 words.

Part I

Section I

Question 1 (Compulsory)

Read the stimulus material on the following page.

Using the stimulus provided and examples of successful and unsuccessful innovations you have studied:

(a) identify reasons why some innovations are unsuccessful in the marketplace;

(b) assess how important the impact on people and the environment is to the success or failure of innovations;

(c) discuss the role of research and development in bringing ideas to realisation as successful innovations;

(d) critically analyse the degree to which entrepreneurial activity can hinder or support the ultimate success of innovation.

[See the examination paper for the stimulus material.]

General Comments

This was a question allowing candidates the opportunity to respond. Stimulus material was relevant and provided the candidates with the opportunity to include parts in their answers. The question assessed a wide range of concepts.

Specific Comments

Candidates generally used few examples or stimuli to support their answer. They need to read and assess the question and look at key words (eg *identify, assess, discuss)* in order to gauge the depth of response required. Candidates had some difficulty in answering the question in negative terms (ie unsuccessful innovation in parts (c) and (d)). They did not understand key concepts and research and development related to marketing.

The following items proved difficult for some candidates:

critically analyse (positive/negative consequences). Candidates tended to analyse ONLY the positive.

entrepreneurial activity

ideas as a concept

research and development having an impact on innovations.

Marking Guidelines — Question 1 (3 Unit)

17 – 20 marks	**Excellent** – identifies and fully develops key terms from the question. – fully supports answers through a sound understanding of a variety of innovations. – provides an in-depth discussion of key points that were raised. – draws upon stimulus material and applies it appropriately to the discussion.
13 – 16 marks	**Above Average** – identifies key terms from the question. – provides adequate discussion, with some points being elaborated. – applies stimulus material and a wide range of external examples. – displays basic knowledge of entrepreneurial activity.
9 – 12 marks	**Average** – identifies key terms that are generally not related to the question. – provides limited discussion and elaboration. – provides examples, which are poorly linked. – attempts most of the question.
5 – 8 marks	**Below Average** – identifies key terms with elementary explanation. – provides limited use of stimulus material. – provides superficial responses to the question.
1 – 4 marks	**Poor** – provides no examples or discussion of issues. – provides a response that was re-written by simply using terms from the question.

Typical Answers

Question 1

Excellent response

(a) The reasons why some innovations are unsuccessful in the market place are due to a number of important facts. From the stimulus material provided, one can identify a number of these reasons, starting with the 3D-vision camera that was withdrawn from the marketplace due to insufficient testing with consumer groups. Another reason was also the pressure to introduce the product ahead of its rivals, possibly causing a 'hurried' process in the camera production or testing etc. Another important fact, which leads to reasons for failure, is particularly identified in a quotation from the stimulus 'a nation of ideas and gamblers but not risk takers'. This is ultimately one of the greatest reasons why innovations are unsuccessful, particularly in Australia where inventions are designed and created but are often not taken any further because no one is willing to 'take the risk'. One example, which supports this, is the creation of the Black Box flight recorder, which was actually invented in Australia. However, due to no one's taking the initiative to take the design further, it was taken overseas and ended up being one of the greatest innovations ever, recording the information on plane flights. This is a classic reason as to why innovations are unsuccessful.

Comment:

This answer is well supported and well discussed. Excellent use is made of stimulus material. The candidate continued this when answering other parts of the question.

Above Average response

(b) The impact of the product on people and the environment is fundamental to the success or failure of the product. The effect that a product has on people has always been an important issue as this is what will motivate consumers to buy a product. If a product is going to meet specific needs of the consumer and improve quality of lifestyle, the consumer is more inclined to buy it rather than if a product has a lasting negative effect. Furthermore, people are becoming increasingly aware and conscious of the effects that products are having on the environment, opting for products that are more helpful and less damaging. For example, Dynamic Lifter was encouraged by the observation of the wasteful and pollution effects that chicken manure was having on the environment. Consumers' keenness to purchase this product is also spurred on by the fact that this product has a more positive effect on the environment than the chemical alternatives; this has been an important key to this product's success.

Average response

(c) The role of research is to assess theoretically the success of a new innovation before it is even produced or placed on the market. Research is used to find out exactly what it is the consumers are after and which age or social group desires it. Research is also used to assist in the development of a new innovation by assessing all negative and positive aspects of that innovation. Once all the procedures have been carried out, it gives the producers / innovators a very good idea of the social group they should target in order for it to be a success.

Comment:

The candidate displays a general understanding of the question and attempts to give examples and provide a logical link.

Below Average response

(d) In the example of the 3D camera, it is seen that entrepreneurial activity is a 'multi-million' dollar marketing campaign which would be a direct result of entrepreneurial activity seen not to have helped the innovations success. However, the sports shoe, from its entrepreneurial work, has been a success.

Comment:

The candidate displays little understanding of the nature of the question and endeavours to use terms and expressions from the question to form a response.

Section II

Question 2

An integral part of our information technology society is the use of 'plastic cards' to store and exchange information and purchase products and services. Examples of these are shown below.

[Refer to examination paper for picture of 'plastic cards'.]

(a) List some benefits to organisations that utilise this form of technology.

(b) Explain possible ethical and legal issues related to the introduction of these 'plastic cards'.

(c) Discuss the marketing and promotion of 'plastic cards' to consumers.

(d) Critically analyse the impact that 'plastic cards' have on:

(i) individuals;

(ii) services within the community.

(e) Describe the role governments have in the implementation and adoption of such significant new technologies.

General Comments

Most candidates answered parts (a) to (d) fairly well but section (e) was not answered as well.

Candidates had a reasonable knowledge of user benefits and impacts and often listed them, but only a few mentioned impacts on industry and commerce.

Few candidates could expand this understanding to broader issues.

There was some confusion between, and overlap of, ethical and legal issues. In discussing some examples (eg privacy), candidates often used the same argument for both ethical and legal issues.

Sometimes answers were repeated.

Specific Comments

(a) Most candidates had no difficulty in listing many benefits, especially for individuals.

(b) The terms 'legal' and 'ethical' were often confused, but some candidates recognised that legal issues developed as a result of ethical issues and gave some examples.

(c) Promotion is part of marketing: Although most candidates did Marketing Strategies for their specialised studies, this section was not as well answered as expected. The question was often answered in general terms.

(d) Candidates were required to analyse critically the impact of plastic cards, but many gave only the positive impacts and failed to give the negative.

(e) Most candidates recognised the general need for governments to regulate and legislate for consumer protection. Most were unable to distinguish between implementation issues and adoption issues. Very few gave specific examples in support of their answers on the grounds that they were responding in the context of plastic cards. As a high order question that proved the discriminator between very good and outstanding responses, however, this was poorly handled.

The following items proved difficult for some candidates:

Implemention and *adoption* caused some problems
in relation to *critically analyse*, candidates did not consider negatives.

Marking Guidelines – Question 2 (3 Unit)

17– 20 marks	**Excellent** Candidates had an excellent understanding of the terms used in the questions and were able to give a broad and well-defined answer to all sections of the question, especially on the role of governments. In section (e) they described the role of governments in the implementation of significant new technologies.
13 – 16 marks	**Above Average** Candidates had a detailed understanding of the key terms used in the questions and were able to provide discussion and elaboration of those terms.
9 – 12 marks	**Average** Candidates had a sound understanding of the material asked for in the question, but not all parts of it were dealt with. They often gave examples that were not clearly linked to the answers to the question.
5 – 8 marks	**Below Average** Candidates had a basic understanding of the terms and expressions used in the question but had little understanding of the role of governments in relation to plastic cards and showed no differentiation between 'implementation' and 'adoption'. When the question asked for critical analysis or discussion, these candidates answered in only a few words, did not give any explanation and offered no discussion.
1 – 4 marks	**Poor** These candidates often used one-word answers, showing limited understanding of what was required.

Typical Answers

Question 2

Excellent response

Plastic cards are marketed and promoted to consumers through mass media, eg. TV, radio, newspapers, etc. and companies and corporations, claiming to make life easier. Marketing strategies used are lines such as: - As easy as 1, 2, 3; Stay safe; Forget cash; Will that be cash or card?

Promotion occurs within public and private sectors. Most companies and retail organizations promote the plastic cards within their own stores or as a special prize for customers who spend a lot of money. Marketing and promotion of plastic cards aims to make people feel special and above everyone else in society by saying 'Look I've got a Grace Bros. Card' or 'I've got Fly Buys'.

Comment:

The candidate was able to identify the key terms in the question and the answer was fully supported.

Above Average response

Government has had to develop policies to stop misuse and legislation to govern the broad use of the cards and the information that is held within them.

Government is required to keep up-to-date with technological shifts; if they don't they are often left behind meaning there is no legislation to govern, eg. genetically engineered foods and plastic cards.

Government has also developed new technologies such as plastic cards, eg. Medicare and Smart Card in the 80s. It is very important for government to move with the times; if they don't they can be left behind and suffer major inconveniences from this.

With the development of new technologies such as cards etc, the government has to play a role in the development process. Such organizations as CSIRO take this role on board on behalf of the government; by having the information on board they are able to make decisions and decide directions that these new technologies will take.

Comment:

The candidate was able to complete reasonable answers to all sections of the questions and to describe the role of governments and the implementation of plastic cards and also new technologies.

Average response

Legal issues such as copying or stealing other people's cards could be quite easy with many cards. This is not only illegal but highly inconvenient not only to the customer but also to the organisation and police.

Ethical issues such as self-control, not overspending your budget, could be raised by the introduction of these cards. This could cause major problems and even send some people broke.

Comment:

Candidate tended to have an understanding of the question but failed to convey this understanding in words.

Below Average response

Different services throughout the community use plastic cards as a way of communication throughout the consumers.

Comment:

When the question called for discussion or critical analysis it was treated in a very shallow fashion.

Poor response

The government does not have a huge role in the implementation and introduction of such significant technology.

The role of government has an in. these type of sig. new tech. is most of the time based on what the people wont it really dose not matter what the government wont.

Comment:

In poor responses candidates may identify the issue but fail to explain. Often the candidates did not understand the role of the government and did not understand what is meant by 'significant new technologies'.

Question 3

A technological innovation has been presented to a company, which has an entrepreneurial reputation. This innovation could perform a task that significantly reduces the impact of a process on ecosystems and on individuals. The initial cost of the innovation is likely to be substantially higher than the existing technology. Using examples that you are familiar with:

(a) list the issues the entrepreneurial company might need to consider when deciding whether to be involved in developing the innovation;

(b) suggest marketing strategies that might be used to promote such innovations to consumers;

(c) discuss the role governments might take in response to such technological innovations.

(d) evaluate the ethical issues associated with profit, ecological responsibility and social responsibility.

General Comments

Parts (a) and (b) were generally well answered. The question tested candidates' understanding of innovations and their introduction to the market place. Generally this was a fair question but there were few responses and these were generally medium to poor. (46 candidates responded to this question)

Specific Comments

Candidates did not use examples to illustrate their answers.

Many gave extended responses for part (a) when the question asked them to list the issues an enterpreneurial company might need to consider when deciding whether to be involved in developing the innovation.

In many cases the responses to 'discuss' part (c) and 'evaluate' part (d) were significantly shorter than part (a). The question on ethical issues related to profit was poorly answered

The following items proved difficult for some candidates:

using examples: candidates had trouble knowing how many examples were required and in what form. They are required in each section, ie Parts a, b, c, d or in one section.

failing to relate the question stem to each part of the question. Although the question stated 'using examples that you are familiar with', the majority of candidates answered the questions in a general fashion rather than referring to specific examples.

Marking Guidelines – Question 3 (3 Unit)

17 – 20 marks	**Excellent** Used multiple examples to demonstrate understanding of issues concerning innovation and marketing strategies. Discussed and elaborated a wide range of government roles in relation to innovations. Used examples critically, analysing the relationship between profit, ecology and social responsibility and the impact they may have on ethical issues.
13 – 16 marks	**Above average** Listed and discussed considerations for entrepreneurial activity and marketing. Stated several government roles in innovations. Used some examples of interrelationship between ethical issues and profit, ecology and social responsibilities. Were able to present ideas in a concise and logical way.
9 – 12 marks	**Average** Listed issues regarding the development of innovation. Listed marketing strategies. Mentioned two roles of government interaction in technological innovations. Mentioned one or two of the ethical issues related to profit, ecological responsibility or social responsibility
5 – 8 marks	**Below average** Briefly listed one or two considerations in regard to entrepreneurial innovations. Listed without comment one or two strategies regarding marketing strategies. Stated a government role in developing innovations. Gave poor explanation of the ethical issues associated with profit, ecological responsibility and social responsibility.
1 – 4 marks	**Poor** Listed one or two issues regarding innovations and marketing. Listed a non-related government role. Failed to relate ethical issues to profit, ecological responsibility and social responsibility.

Typical answers

Question 3

Excellent response

(c) 'The role of governments in the response to technical innovations can be both positive and negative. Government may introduce a more contemporary policy in relation to the innovation, possibly hindering or taking advantage of the innovation.

Such was the case in Sydney, when the New South Wales Government introduced more stringent regulations to cut down on vehicle emissions following nearly a century since the innovation's introduction.

Government organisations have also been established to monitor and manage the use of innovations. The Roads and Traffic Authority has existed under different names, to manage NSW roads as a result of the introduction of the motor car, a significant innovation at the time. Today, the Federal Government has established an Advisory Board to assist in the introduction of digital television. This is to ensure that the same standards are adopted and the system is beneficial to all Australians. Governments have also adopted technology to help their own situation or activities. The Federally owned Corporation of Australia Post recently installed new barcode sorters, multi-line optical character recognition and tray management systems at two mail centres to significantly reduce delivery times, and improve sorting and processing efficiency and to reduce operating costs.'

Comment:

The candidate was able to answer question (c) using relevant high quality examples. The answer was directed towards the key sections of the question, discussing government roles and ethical issues as they related to profit, ecological sustainability and social responsibility.

Above Average response

(a) 'Will the innovation be able to create a profit for the company? eg. profit is a major goal in entrepreneurial activity and so long term profitability is important.

Can the innovation be pushed further and developed into more than one product? eg. Can the equipment and machinery that are going to create a higher initial cost be used to make more than one product that can generate profit?

Is the innovation ethically sound? Are there reasons why the innovation could defame the company? These ethical issues will ultimately render the innovation unsuccessful for the company. Can the innovation be protected as their intellectual property or is it possible the idea has been sold to another company? Therefore the innovations potential for profit is lowered.'

Comment:

The candidate was able to gain high marks in section (a) with a high quality, concise response.

Below Average response

(d) 'The dynamic lifter involved many ethical issues with its release. Farmers were paid for the chicken manure they once had to pay to have removed.

Jobs were created by this new multi-million dollar company and it became a source of income for many suppliers.

A source of pollution was reduced (chicken manure once a source of pollution, now a source vital to plant life).'

Comment:

This candidate had difficulty interpreting the question, was not able to address the issues relating to ethics and did not establish a link between their answer and the question.

Poor response

(b) 'A good marketing strategy could be by company's controlling this innovation to existing technologies and showing the strengths of the innovation and the weakness of the existing technology. Commercials result in the use of this innovation'

Comment:

The candidate misinterpreted the question and failed to show a logical progression of ideas.

Question 4

Innovation and entrepreneurial activities in design and technology have created new opportunities for the entertainment industry. There are many examples in the following areas:

- *theme parks*
- *special effects*
- *game zones*
- *home entertainment*
- *outdoor entertainment.*

Using one or more of the above examples, answer the following questions.

(a) Describe briefly an innovation that has occurred in the entertainment industry.

(b) Discuss positive and negative impacts resulting from the innovation.

(c) Identify and explain the technological developments that have had a significant impact on the area(s) of the entertainment industry selected.

(d) Discuss the aspects an entrepreneur needs to consider when managing an entrepreneurial activity.

General Comments

This was a question that elicited a broad range of responses. Its theme was relevant to the candidates' life experiences and, therefore, a broad array of examples of technology was provided.

Current issues could be addressed.

Some candidates used examples of Dynamic Lifter and refrigeration as entertainment innovations. It was very hard to justify their selection of these examples.

Specific Comments

Parts (a) and (b) were well answered, with valid examples being supplied.

Parts (c) and (d) were answered with difficulty. In (c) the mechanics of the technological development were poorly communicated and in (d) the concept of entrepreneurial management was rarely elaborated upon.

The following items proved difficult for some candidates:

Discuss positive and negative impacts (there was a tendency to list points rather than discuss the issues)

explanation of technological developments (In relation to this, candidates rarely talked about the mechanics of the development.)

managing an entrepreneurial activity.

Marking Guidelines – Question 4 (3 Unit)

17 – 20 marks	**Excellent** – describes the innovation thoroughly and relates to one of the given examples. – provides an in-depth analysis of the effect of the innovations in relation to one or more of environment, society, individual and ethical issues. – justifies and explains the mechanics of at least TWO technological developments. – assesses their effect on the entertainment industry.
13 – 16 marks	**Above Average** – identifies an innovation and describes it in appropriate detail. – describes the technology in accurate terms. – indicates an understanding of entrepreneurial activity, making a link with management processes.
9 – 12 marks	**Average** – identifies the innovation and describes it in general terms. – indicates only one example of a technology and gives a general explanation. – identifies an array of entrepreneurial activity with little relationship to management.

5 – 8 marks	**Below Average** – identifies an innovation. – lists general positive and negative impacts. – mentions a technological development. – compiles a list of unrelated marketing terms.
1 – 4 marks	**Poor** – names an innovation. – names a technological development. – provides no understanding of management.

Typical Answers

Question 4

Excellent response

(a) In the past few years there have been many innovations that have occurred in the entertainment industry, especially in the home entertainment market.

The introduction of mini disc, DVD and now MP3 players are constantly changing the industry. MP3 players are the new step in portable types of entertainment systems often Discman and Mini Disc (MD) players. MP3 are files which are downloaded from the internet and which are usually music and songs from the latest CDs uploaded by other people on the internet. These MP3 files are transferred and recorded onto small discs like a CD. This is an even faster method than having to 'burn' the MP3 files onto a Compact Disc using a CD writer. The MP3 players are smaller than the MD players making it even more portable and easier to carry around. However, an MP3 player stores less than a Minidisc.

Above Average response

(b) Positive impacts resulting from this innovation of MP3 players.

- MP3 players are more convenient and more portable to carry around.
- They can be easily used and files are usually available on the Internet ready to be down–loaded.
- Save time from having to record onto CDs and tapes.
- Successful miniaturising portable music entertainment systems. Negative impacts resulting from this innovation.
- Some people may not have the Internet on their computers, and this is needed to use the MP3 player to record the files.
- Fewer and fewer people will need to buy CDs as they can make their own at home. This will have a very costly effect in the music industry.

Average response

(d) Aspects which an entrepreneur needs to consider when managing an entrepreneurial activity include proper management skills and knowledge, sufficient resources, both human and financial resources. Entrepreneurs need to have the proper skills and knowledge before undertaking any activities. They are used to perform tasks effectively and efficiently. This can determine whether they will be successful or not. Proper management of resources will improve the efficiency of the activities to be done. Entrepreneurs can often gather useful and relevant information to help them succeed.

Below Average response

(c) The technological development of this innovation is that they have produced a disc that is compact, easy to use and the systems are so easy to operate. It has had a significant impact on the entertainment industry because customers can now record music onto a disc. The discs are very small and portable and allow you to record off anything. Customers and people want this.

Poor response

(c) Computer technology and digital sounds are technological advancements, which have helped to make development of these discs possible.

Part II: Specialised Study

General Comments

The Specialised Study includes both the research and development of a concept related to the 2/3 Unit (Common) Major Design Project (MDP) and the documentation of all the steps involved in this process. It should be impressed upon candidates that the 3 Unit Specialised Study is not a simple rework of the 2 Unit MDP, but must be developed from the MDP as a research and development project.

Overall, the Specialised Study again showed great improvement on those of previous years, with a large proportion of candidates more accurately addressing the subject criteria. Those who scored poorly should check the Support Document (pages 40 to 45). Candidates, on the whole, closely targeted the assessment criteria, which are also supplied in the Support Document.

It must be stressed that the *length* of the study is again an issue. Some were as long as 5500 words, not including the appendices. The candidates were penalised for their excessive verbosity.

Appendices should be only supportive evidence to the body of the study and should not draw any conclusions. If conclusions are drawn within the appendices, they are included in the word count, in this way disadvantaging the candidate.

The following items proved difficult for some candidates:

Several centres had specific structured and regimented formats, which were the same throughout submissions from the centre. This did not allow the candidates at these centres any individual freedom in the development and presentation of the study. The use of plastic sleeve booklets for Specialised Studies should also be discouraged, as these are extremely difficult to mark under lights because of the reflections on the sleeves.

Comments on Above Average responses

Proposal

Candidates who gave above average responses were able to demonstrate a clear correlation between their 2 Unit MPD and the Specialised Study. The aims of their study allowed for quality research and a range of methodologies that could be analysed and through which conclusions could be formed. The criteria to evaluate success often allowed for a third party to verify the process.

Methodology

In the Above Average response, a range of appropriate methodologies is used, evidence of which is shown in the appendix. An analysis of the data collected is carried out, from which conclusions and the generation and/or modification of ideas are developed. An above average candidate has been able to justify fully both the process undertaken and the resources used.

End Result

It is evident that the end result flows from a logical synthesis of the data collected. The above average candidate has referred back to their aims and criteria to evaluate the success of the Specialised Study. Statements on ethical issues and their impact on Society and Environment generally use examples rather than broad statements.

One successful way of presenting a thorough Specialised Study was to focus on covering the points outlined the Specialised Study check list offered in the syllabus. The 2 Unit extracts do not have to be extensive but could include photographs of the completed MDP and a design situation and brief as well as functional and aesthetic evaluations.

To cover adequately the process of the specialised study proposal, candidates should consider setting up a process that will lead them to research and to an end result. Before doing any research the candidate should draw a relationship between 2 Unit and 3 Unit. Better candidates were able to analyse the separate options and then specify which form they would then follow.

Some of the better candidates presented the methodology clearly by putting information into a table in point form. Others described the rationale for the selection of these methodologies. A realistic analysis of the study is important to the end result. It is just as valid to evaluate the study and consider the project to not be viable. It is important to be critical with an analysis to be truly realistic.

An Above Average response thoroughly addresses all sections within the proposal, in particular the justification of the study (which poor to average candidates fail to address correctly). Many Above Average candidates are undertaking simple pilot studies to determine whether their idea has market potential before launching fully into the methodology section.

An Above Average candidate's end result addresses the viability and impact of the marketing strategy, new resource or innovation rather than the 2 Unit MDP.

Excerpt from an Above Average response

Aims of the study

- To develop an appropriate strategy to market my product.
- To identify the target market for my product.
- Investigate and evaluate any competition within the market.
- Determine the marketing mix.
- Product - to find which qualities are most appealing to the customers.
- Price - to investigate how much people would be willing to pay and therefore using this as a guide to set the price for my product.
- Place - feedback from the consumer as to where they would expect to purchase this product.
- Promotion - identify an appropriate method for promoting my product.
- Analyse weaknesses, strengths, opportunities for and threats to my design.
- Identification of where my product should be sold.
- Determine the feasibility of my product.

Criteria established to evaluate success

- A number of methods will be used to measure the success of the study, these include: personal evaluation, consumer evaluation, expert evaluation.
- This study will be successful if the following are identified through my research: target market, appropriate price level, a place to sell my product.

- Which designs and colour schemes are most popular?
- Through the study I will be able to determine how successful my product will be within the market place.
- The study will be successful if it is able to determine the need for such a product within the market place
- The Specialised study will be successful if I am able to develop an appropriate marketing strategy for my product.
- Through formal and informal surveys, interviews and questionnaires these will help me identify the positive and negative features of the specialised study and hopefully identify alternative methods that will need to be utilised.
- I will know that my specialised study is successful if all aims have been met and feasibility determined that is if there is a suitable market to purchase the product.

Innovative Application

Graphical database for library 2 Unit MDP were adapted to find products on supermarket shelves for 3 Unit.

Comments on Average responses

Within the proposal, average candidates are failing to justify the chosen application. Average candidates are not conducting pilot studies, which are simple methods that can justify the further investigation of the study.

Some average candidates are including large amounts of textbook notes into their methodology sections and are failing to relate that information directly to their chosen application.

Some average candidates are not using a wide range of methodologies; many are relying solely on the information gained from one simple survey. Often candidates are surveying only their family and friends and not a broad cross-section of their proposed target market.

Many of the average to good scripts are failing in their end result section. The majority of average scripts are receiving approximately half or less of the marks available for this section. Often the end result addresses the viability and potential impact of the 2 Unit MDP rather than the strategy or the innovative resource, etc.

Excerpts from Average responses

Justification for the study

The marketing strategy must be researched in order to gain the most beneficial and practical use out of the OZCON poster and merchandise by establishing the ideal target group at which to direct the promotion.

The other options are not viable in relation to my 2 Unit MDP, due to the changing needs of the convention.

Rationale for research methodologies selected

Type of Research	**Techniques**	**Rationale**
Descriptive Research	Survey	Surveying the large comic/commercial stores from the OZCON last year will enable me to determine a target market, the biggest 'sellers', and possible promotional methods.

Critical Analysis of the effectiveness of the study

The research used in designing the marketing strategy has been effective as it has addressed each of my aims, and suited the criteria for the strategy to be effective. Through my research I have achieved the following:

- I have established my target market.
- I have investigated past OZCON advertisements and posters.

End Result

The potential impact on society and environment: The environment will not be affected as my product is made from a small portion of pine. All other features are created using recycled materials to benefit the environment.

Comments on Below Average responses

Candidates refer to their MDP and give reference to Specialised Study only by stating that if more of their MDP were produced as a result of the specialised study, it would have an impact on society/environment/ethical issues.

Excerpts from Below Average responses

Justification for the study

I thought that with an effective marketing strategy I could find a niche market.

To do this I will study, identify and target a particular niche market, make sure advertising reaches the target market, ensure marketing strategy is cost effective. Need to convince the potential purchasers that my product is better than similar products.

Methodology

After gathering my information I decided it would be too expensive to advertise on TV.