

BOARD OF STUDIES
NEW SOUTH WALES

2001 HSC Specimen Paper

**Industrial Technology –
Multimedia Industries**

ACKNOWLEDGEMENTS

Question 3 (b) – Diagram: Work place signs, Shadwick, Brian, Science In Perspective – Book 1, Science Press, 1998

Question 3 (c) – Screen grabs of Microsoft Word: © Microsoft

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Industrial Technology — Multimedia Industries

Introduction

This booklet contains the specimen examination paper for the 2001 Higher School Certificate examination in Industrial Technology — Multimedia Industries. A mapping grid is also included, showing how each question in the examination relates to the syllabus outcomes and content, and to the performance bands.

The specimen paper shows the format of the New HSC examination. It has been printed on A4 paper and side-stapled to make it convenient for use in schools. Actual examination papers will be produced as A4 booklets. All New HSC papers will be printed on white paper.

The 2001 HSC specimen papers have been produced in accordance with the Board's *Principles for Setting HSC Examinations in a Standards-Referenced Framework*, published in Board Bulletin Volume 8 Number 9 (Nov/Dec 99). Questions are closely related to the outcomes of the course, and the paper as a whole is structured to allow for appropriate differentiation of student performance at all levels on the performance scale.

The papers have been designed so that students have a clear understanding of what they are required to do in each question and in working through the paper. Instructions have been standardised, and the demands of the questions have been made explicit. Key words in questions, such as 'discuss', 'analyse', and 'explain', have been used consistently in accordance with the glossary published in the Board's *Assessment Support Document*.

This specimen paper is an example of the type of examination that could be prepared within the examination specifications in the Industrial Technology syllabus. Examinations will be based on the syllabus, and will test a representative sample of syllabus outcomes. Therefore, the range and balance of outcomes tested in HSC examinations in 2001 and subsequent years may differ from those addressed in the specimen paper.

The mapping grid is an important feature of the development of the examination. It aids in ensuring that the examination as a whole samples a range of content and outcomes, and allows all students the opportunity to demonstrate their level of achievement. Where courses have components in the examination other than written papers, the grid indicates the wider range of outcomes that are assessed by including these other components.

There are a number of points to note in considering the Industrial Technology — Multimedia Industries specimen paper:

- The Industrial Technology HSC examination specifications have been changed. The changes are summarised below:
 - The written paper (worth 40% of the total HSC mark) is to be marked out of 100.
 - There will be a separate written examination paper for each Industry Focus Area.

- Students will be required to answer five questions (each worth 20 marks), three from Section I and two from Section II.
- In Section I the first two questions will be common to all Industry Focus Areas, apart from direct references to the appropriate industries. The third question will be based on the Workplace Communication section of the syllabus and will have a similar format but be specific to the Industry Focus Area.
- In Section II students will be required to answer both questions.
- The number of parts to the questions has been kept to a minimum. The questions now require more integrated answers, giving students the opportunity to show higher-order thinking skills.
- All question parts are out of whole marks. This will assist candidates to determine the relative value of questions and parts and to allocate their time accordingly.

Industrial Technology – Multimedia Industries

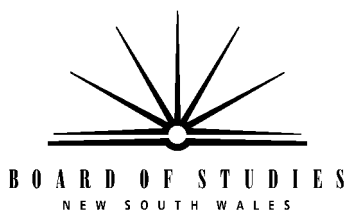
HSC Specimen Examination Mapping Grid

For each item in the examination, the grid shows the marks allocated, the syllabus content and syllabus outcomes it relates to, and the bands on the performance scale it is targeting. The range of bands shown indicates the performance candidates may be able to demonstrate in their responses. That is, if an item is shown as targeting Bands 3 – 5, it indicates that candidates who demonstrate performance equivalent to the Band 3 descriptions should be able to score some marks on the item, while those who perform at Band 5 or above could reasonably be expected to gain high marks. In the case of one-mark items, candidates who demonstrate performance at or above the bands shown generally could be expected to answer the item correctly.

Question	Marks	Content	Syllabus outcomes	Targeted performance bands
1(a)	9	Industry Study – structural factors, technical factors	H1.1	2 – 6
1(b)(i)	3	Industry Study – occupational health and safety, environmental and sociological factors	H1.1, H2.1	2 – 4
1(b)(ii)	3	Industry Study – occupational health and safety, environmental and sociological factors	H1.1, H2.1	2 – 4
1(c)	5	Industry Study – personnel issues, occupational health and safety	H1.1, H2.1	2 – 6
2(a)(i)	2	Industry Study – technical factors	H1.2	2 – 3
2(a)(ii)	4	Industry Study – structural factors, technical factors	H1.1, H1.2	2 – 4
2(b)(i)	2	Industry Study – personnel issues	H7.1	2 – 4
2(b)(ii)	6	Industry Study – personnel issues	H1.1, H7.1	2 – 6
2(c)	6	Industry Study – environmental and sociological factors	H1.1, H1.2, H7.1	2 – 6
3(a)(i)	4	Workplace communication – calculations / literacy	H1.1, H5.1	2 – 4
3(a)(ii)	4	Workplace communication – literacy	H1.1, H5.1	2 – 6
3(b)	6	Workplace communication – graphics	H1.1, H2.1, H5.1	2 – 4
3(c)	6	Workplace communication – literacy	H5.1, H5.2	2 – 4
4(a)(i)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
4(a)(ii)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
4(a)(iii)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
4(b)(i)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
4(b)(ii)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
4(c)	5	Industry-specific content and production	H1.2, H4.3	2 – 6
5(a)	2	Industry-specific content and production	H1.2, H4.3	2 – 4
5(b)(i)	6	Industry-specific content and production	H1.2, H4.3	2 – 6
5(b)(ii)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
5(c)(i)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
5(c)(ii)	3	Industry-specific content and production	H1.2, H4.3	2 – 4
5(d)	6	Industry-specific content and production	H1.2, H4.3	2 – 4

Major Project				
Component	Marks	Criteria	Syllabus outcomes	Targeted performance bands
Folio	20	Design and Management Workplace Communication	H1.2, H2.1, H3.1, H3.2, H3.3, H4.2, H4.3, H5.1, H5.2, H6.1, H6.2	2 – 6
Product	40	Production	H1.2, H2.1, H3.1, H3.2, H3.3, H4.1, H4.2, H4.3, H6.1, H6.2	2 – 6

Note: The HSC examination in Industrial Technology consists of a written examination paper marked out of 100 and converted to a mark out of 40, and a major project worth 60 marks.



Sample marking guidelines for Industrial Technology (Multimedia Industries)

The following marking guidelines have been developed for selected questions from the 2001 HSC Specimen Examination in Industrial Technology (Multimedia Industries). These guidelines indicate the approach that would be taken to marking questions.

For each question, the following are typically included:

1. The syllabus outcomes that are targeted by the question.
2. The assessment rubric from the specimen paper, where there is one, listing the set of general criteria that are used to assess responses.
3. The marking guidelines, which show the criteria to be applied to responses along with the marks to be awarded in line with the quality of the responses. For extended-response questions, performance is described at a number of levels of performance, each covering a range of marks.
4. A sample answer or some points that answers might include. Sample answers indicate the scope and depth of treatment expected, and are not intended to be prescriptive. Similarly, the points that could be included in answers are not intended to be an exhaustive list, but rather an indication of the considerations that students could include in their responses.

Marking guidelines will generally require some refinement at the Marking Centre to take account of unanticipated responses that students present. For essay-type questions, the standard described at each mark range will be made clear during pilot-marking by the selection of sample scripts.

In a standards-referenced framework, examination questions are closely linked to syllabus content and outcomes. Expectations of the question are to be clear in the wording of the question. Marking guidelines will be developed at the same time as the examination questions, by examination committees. The development of marking guidelines will be guided by the Board's *Principles for Developing Marking Guidelines Examinations in a Standards-Referenced Framework*, published in Board Bulletin Volume 9 Number 3 (May 2000).

Sample Marking Guidelines – Industrial Technology Multimedia Industries

Question 1 (20 marks)

Marks

- (a) A company employing 25 people has operated for a number of years using long-established techniques. The company is now experiencing financial difficulties and a downturn in sales.

9

Identify and describe THREE factors that may be responsible for the company's difficulties. How could managers of the company address each factor and improve the financial position of the company?

Outcome assessed: H1.1

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • One mark each for description of three appropriate factors • Two marks for each suggestion as to how the factor may be addressed with an explanation as to how this suggestion may improve the financial position (one mark only if this explanation does not clearly link the suggestion with the financial position) 	9

Answers could include:

Product(s) no longer appeal to demographic groups of company's local area. Market research would be one way of addressing this factor, leading to a product(s) with more appeal and hence greater sales turnover and profits.

- (b) A business uses hazardous materials or equipment. Explain how the following factors influence the way in which these materials or equipment should be handled in the workplace.

- (i) Government legislation

3

Outcomes assessed: H1.1, H2.1

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Identifies legislation • Explains a range of ways by which this legislation has influenced the use of materials in the workplace 	3
<ul style="list-style-type: none"> • Identifies legislation • Gives limited explanation as to how this legislation has influenced the use of materials in the workplace 	2

Criteria	Marks
<ul style="list-style-type: none"> Identifies legislation OR <ul style="list-style-type: none"> Identifies a hazardous material in the workplace OR <ul style="list-style-type: none"> States the significance of government legislation generally 	1

Answers could include:

Occupational health and safety legislation has improved safe handling of hazardous materials by providing guidelines for: safe working practices; national safety data sheets; storage; and correct processes for using hazardous materials or equipment.

(ii) Workplace communication 3

Outcomes assessed: H1.1, H2.1

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Identifies several workplace communication techniques or examples Explains ways in which these workplace communication techniques or examples influence safe handling 	3
<ul style="list-style-type: none"> Identifies a relevant workplace communication technique or example Explains a way in which this workplace communication technique or example influences safe handling 	2
<ul style="list-style-type: none"> Identifies a relevant workplace communication technique or example 	1

Answers could include:

Signage for safe handling of hazardous materials or equipment; labelling of containers; workplace newsletters; emergency exit labelling and drills.

In many workplaces, signs prohibiting smoking or even the use of mobile phones have been used and standardised, resulting in safer handling of flammable materials.

(c) Identify ONE trade union associated with multimedia industries, and evaluate the contribution it has made or could make to the development of safe working practices. 5

Outcomes assessed: H1.1, H2.1

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Identifies one trade union associated with the industry Describes several safe work practices that have developed in the industry Makes a sound judgement, with supporting evidence and explanation, of the value of the union's involvement or potential involvement 	5

Criteria	Marks
<ul style="list-style-type: none"> Identifies one trade union associated with the industry Describes more than one safe work practice in the industry Makes a judgement, with some explanation, of the value of the union's involvement or potential involvement 	4
<ul style="list-style-type: none"> Identifies a trade union associated with the industry Describes one safe work practice in the industry Outlines the union's involvement or potential involvement 	3
<ul style="list-style-type: none"> Identifies a trade union associated with the industry Identifies a safe work practice in the industry 	2
<ul style="list-style-type: none"> Identifies a trade union associated with the industry <p>OR</p> <ul style="list-style-type: none"> Identifies a safe work practice in the industry 	1

Answers could include:

Nominates a trade union appropriate to the industry, and makes a judgement about the union's involvement or potential involvement with: safe use of machinery including protective clothing, barriers and guards, signage, noise protection, legal advice and representation, negotiations with employers/employees, OHS implementation.

Question 5 (20 marks)	Marks
(a) Explain the difference between 16-bit colour and 24-bit colour.	2

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Explains the effect the number of colours has on the image 	2
<ul style="list-style-type: none"> Refers to the increased number of colours without explaining the effect the number of colours has on the image 	1

Sample answer:

The numbers refer to the numbers of colours that an image could possibly have in it. 16-bit colour has 2^{16} colours and is called high colour. 24-bit colour has 2^{24} colours and is called true colour. 24-bit colour images have a greater depth of colour than 16-bit images.

	Marks
(b) Compare and contrast TWO image formats, with references to the advantages and disadvantages of each.	6

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Names two image formats and describes advantages and disadvantages of each of these image formats • Explains the similarities and/or differences between the two image formats 	5 – 6
<ul style="list-style-type: none"> • Names one image format and describes an advantage and a disadvantage of this image format <p>OR</p> <ul style="list-style-type: none"> • Names two image formats and describes an advantage or a disadvantage of one or both of these image formats 	3 – 4
<ul style="list-style-type: none"> • Names one image format and either describes an advantage or a disadvantage of this image format <p>OR</p> <ul style="list-style-type: none"> • Names one or two image formats 	1 – 2

Sample answer:

Two image formats are EPS (encapsulated postscript) and BMP (bitmapped). EPS graphics have a smaller file size than BMP graphics for simple images, but BMP graphics have a smaller file for complicated images. EPS is a vector graphic in which lines are represented by a mathematical expression. BMP graphics are drawn by changing the colour of each pixel on the screen. EPS graphics can be enlarged with no loss of resolution, whereas a BMP graphic will become “jaggy” when it is enlarged.

Marks

- (c) Identify TWO video formats, and state an advantage and a disadvantage of each.

(i) and (ii)

6

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Names a video format • States a relevant advantage • States a relevant disadvantage 	3
<ul style="list-style-type: none"> • Names a video format • States a relevant advantage or disadvantage 	2
<ul style="list-style-type: none"> • Names a video format 	1

Sample answer:

Name	MPEG2	
	Advantage	A small file size due to large compression ratio, it is the standard for digital TV and DVD. It is also used commonly on the Internet.
	Disadvantage	It needs specific hardware to run, a video card with an MPEG decoder or an accelerator card.

Name	.AVI	
	Advantage	This video format can be created by many types of software.
	Disadvantage	As it is an older technology, it cannot be compressed very much so it has a larger file size

- (d) Multimedia files can often be very large. Name TWO external storage devices currently available, and describe TWO advantages of each.

6

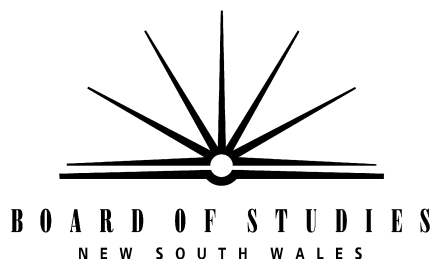
Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
For each external device:	
<ul style="list-style-type: none"> • Names an external storage device • Describes two advantages 	3
<ul style="list-style-type: none"> • Names an external storage device • Describes one advantage 	2
<ul style="list-style-type: none"> • Names an external storage device 	1

Sample answer:

External Storage	Device 1	250MB zip drive
	Advantage 1	zip disc is physically small and is the industry standard
	Advantage 2	zip disc is fast to read and write to.
External Storage	Device 2	Re-writeable CD
	Advantage 1	large data capacity 650MB and is low cost per MB for media
	Advantage 2	once written on it can be read on most computers and so no need for external hardware.



Sample marking guidelines for the Major Project in Industrial Technology

The following sample marking guidelines have been developed for the Major Project component of the HSC Examination in Industrial Technology. In conjunction with the previously published sample marking guidelines for selected questions from the 2001 HSC Specimen Examination paper, they indicate the approach that would be taken to marking student responses for the entire examination.

For the practical component(s) of the examination, the following are included:

1. A description of the task, derived from the syllabus
2. The syllabus outcomes that are assessed by the task
3. The criteria, derived from the outcomes, that are used to assess the task
4. The marking guidelines for each component of the task

The marking guidelines describe the full range of performance typically demonstrated by students. Descriptions are given for ranges of marks, representing performances at different levels of achievement. In marking a response, the marker initially assigns it to one of these levels, and the judgement is then refined to decide on the mark to be awarded. Markers use a variety of strategies, including sample responses, to assist them in this process.

For the HSC examinations in 2001 and beyond, marking guidelines for all parts of the examination will be developed by the examination committee. The development of marking guidelines will be guided by the Board's *Principles for Developing Marking Guidelines in a Standards-Referenced Framework*, published in Board Bulletin Volume 9 Number 3 (May 2000).

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HSC Examination Overview

The HSC examination for Industrial Technology consists of a written paper worth 40 marks and a major project worth 60 marks.

Task: Major Project (60 marks)

The major project is the principal means of examining the outcomes of the HSC course, including the content of the candidate's identified focus area.

Each candidate must present a major project consisting of a product (40 marks) and an accompanying management folio (20 marks), which will be examined in conjunction with one another by Board of Studies appointed examiners. The major project is not to be used for internal or external assessment in any other subject.

The major project must be completed by a date to be notified annually by the Office of the Board of Studies. It is not to be commenced until the beginning of the HSC course.

The major project:

- may consist of one or more related items and must be individually produced by the candidate. Group projects are not permitted
- must be certified on the appropriate form, provided by the Board of Studies, as the original work of the candidate and be identifiable only through the candidate and centre numbers
- may have parts completed by the candidate externally to the school. These must be monitored by the supervising teacher and documented in the folio to ensure certification as to being the original work of the candidate.
- must include evidence of the range and depth of skills and knowledge developed in the course
- may incorporate materials, processes and components drawn from other focus areas where appropriate
- must include a management folio where the use of computer software applications is evident.

Any aspect of the major project undertaken by other persons or agencies must be documented in the management folio. Candidates will not be given credit for work completed by others. Justification for, and of, such work will be recognised in the marking process. The management folio will document the development of the project. Included in the folio will be a statement of intent and details relating to design, planning, management, workplace communication and evidence of skills and knowledge associated with the focus areas.

The examiners have the right to call for a demonstration of particular aspects of the major project. This must be provided by a person other than the candidate responsible for the major project.

Component: Management Folio (20 marks)

This component of the major project should be a ‘documentary’ of the development of the project, including the original intent, research, planning, decisions, problems and their solution, and ongoing evaluation of their major project in the light of their original intent.

Assessment criteria

Design and management

- statement of intent
- research
- development of ideas
- selection and justification of materials, components, processes and other resources
- timeline plan – projected order of production and estimate of time allocation
- finance plan – projected cost of materials and services (if applicable)
- use of appropriate industrial processes and equipment
- evidence of safe working practices and OH&S issues

Workplace communication

Documentation of the major project from conception to completion including:

- evidence of ongoing evaluation
- appropriateness of design and/or design modification
- student’s evaluation of the major project and its relationship to the statement of intent
- evidence of a range of communication techniques
- evidence of a range of computer applications, eg word processing, spreadsheets, CAD, multimedia

Outcomes assessed: H1.2, H2.1, H3.1, H3.2, H3.3, H4.2, H4.3, H5.1, H5.2, H6.1, H6.2

MARKING GUIDELINES

Criteria	Marks
<p>Design and Management</p> <ul style="list-style-type: none"> • Clarifies the intent of the major project by explaining clearly what is to be achieved and why • Describes a wide range of research conducted, which is relevant to the intent of the major project • Analyses and evaluates the development and modification of the major project design ideas • Justifies the selection of appropriate materials, components, processes, including industrial processes and equipment, and other resources in the development of the major project • Formulates a comprehensive and appropriate timeline and finance plan • Demonstrates the use of a wide range of appropriate safe working practices through photographic or written evidence <p>Workplace Communication</p> <ul style="list-style-type: none"> • Critically evaluates the major project, in relation to the statement of intent, during the planning and construction phases • Assesses the relationship between the design, and modifications if applicable, materials, components and processes in the development of the major project • Demonstrates a wide range of communication techniques, including computer applications appropriate to the development of the major project 	<p>17 – 20</p>

Criteria	Marks
<p>Design and Management</p> <ul style="list-style-type: none"> • Clarifies the intent of the major project by explaining what is to be achieved and why • Describes research conducted, most of which is relevant to the intent of the major project • Describes the development and modification of the major project design ideas • Describes the selection and use of appropriate materials, components, processes, including industrial processes and equipment, and other resources in the development of the major project • Formulates an appropriate timeline and finance plan • Demonstrates the use of some appropriate safe working practices through photographic or written evidence <p>Workplace Communication</p> <ul style="list-style-type: none"> • Documents the major project during the planning and construction phases, and relates the major project to the statement of intent • Includes details of the design, and modifications if applicable, materials, components and processes in the development of the major project • Demonstrates a range of communication techniques, including some computer applications, most of which are appropriate to the development of the major project <p>Candidates may achieve 13 – 16 marks as indicated above OR by satisfying a combination of the criteria for other mark ranges.</p>	<p>13 – 16</p>

Criteria	Marks
<p>Design and Management</p> <ul style="list-style-type: none"> • Gives a brief description of what is to be achieved and why • Describes research conducted, some of which is relevant to the intent of the major project • Describes some aspects of the development and modification of the major project design ideas • Lists materials, components, processes, including simple industrial processes and equipment, and other resources in the development of the major project • Proposes a basic timeline and finance plan for aspects of project production • Demonstrates the use of one or two safe working practices through photographic or written evidence <p>Workplace Communication</p> <ul style="list-style-type: none"> • Basic documentation of the major project during the planning and/or construction phases, with references to the statement of intent • Includes details of the design, and modifications if applicable, materials, components and processes in the development of the major project • Demonstrates some communication techniques, including limited computer applications, appropriate to the development of the major project <p>Candidates may achieve 9 – 12 marks as indicated above OR by satisfying a combination of the criteria for other mark ranges.</p>	<p>9 – 12</p>
<p>Design and Management</p> <ul style="list-style-type: none"> • Gives a brief or incomplete description of what is to be achieved • Minimal reference to appropriate research conducted • Briefly describes some aspect of the development and modification of the major project design ideas • Lists some of the materials, components, processes and other resources in the development of the major project • Timelines and finance plans are without sufficient detail • Refers to the use of a safe working practice <p>Workplace Communication</p> <ul style="list-style-type: none"> • Minimal documentation of the major project during the planning and/or construction phases • Lists some details of the design, materials, components and processes in the development of the major project • Demonstrates few communication techniques, including a computer application, which are appropriate to the development of the major project <p>Candidates may achieve 5 – 8 marks as indicated above OR by satisfying a combination of the criteria for other mark ranges.</p>	<p>5 – 8</p>

Criteria	Marks
<p>Design and Management</p> <ul style="list-style-type: none"> • Gives an incomplete description of what is to be achieved • Appropriate research not evident • Minimal description of the development and modification of the major project design ideas • Lists some of the materials, components, simple processes and other resources in the development of the major project • Timelines and finance plans are either not appropriate or not evident • No reference to the use of safe working practices <p>Workplace Communication</p> <ul style="list-style-type: none"> • Minimal documentation of the major project during the planning and/or construction phases • Details of the design, materials, components and processes in the development of the major project not evident • Minimal evidence of communication techniques, including computer applications, appropriate to the development of the major project <p>Candidates may achieve 1 – 4 marks as indicated above OR by satisfying a subset of the criteria for other mark ranges.</p>	<p>1 – 4</p>

Component: Production (40 marks)

The major project product provides practical evidence of the student’s level of achievement in their chosen focus area. Of particular relevance will be the range and depth of skills and knowledge evident in choosing materials and technologies, executing processes and solving problems.

Assessment criteria

- quality of the product
- evidence of a range of skills
- degree of difficulty
- links between planning and production
- evidence of industrial processes
- use of appropriate materials
- use of industrial technologies
- evidence of solutions to problems in production

Outcomes assessed: H1.2, H2.1, H3.1, H3.2, H3.3, H4.1, H4.2, H4.3, H6.1, H6.2

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates very high quality in all aspects of the major project production • A highly demanding project, with evidence of high quality in the application of a wide range of skills and techniques in the planning and production of the major project • Completed project relates closely to what was intended. Close links between actual construction processes, management and thorough research and planning are evident and clearly articulated • Demonstrates and describes the use of a wide range of appropriate industrial processes and materials in the production of the major project • Uses and documents a range of appropriate industrial technologies in the production of the major project • Demonstrates and critically evaluates how solutions to problems in major project production were addressed 	33 – 40

Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates high quality in most aspects of the major project production • A project of substantial difficulty, with evidence of high quality in the application of most skills and techniques in the planning and production of the major project • Completed project relates to what was intended. Some links between actual construction processes, management and thorough research and planning are evident • Demonstrates and describes the use of appropriate industrial processes and materials in the production of the major project • Uses and documents some appropriate industrial technologies in the production of the major project • Demonstrates and explains how solutions to some problems in major project production were addressed <p>Candidates may achieve 25 – 32 marks as indicated above OR by satisfying a combination of the criteria for other mark ranges.</p>	25 – 32
<ul style="list-style-type: none"> • Demonstrates substantial quality in most aspects of the major project production • A project of moderate difficulty, with evidence of high but inconsistent quality in the application of skills and techniques in the planning and production of the major project • Completed project relates loosely to what was intended. Minimal links between actual construction processes, management and thorough research and planning are evident • Demonstrates and describes the use of some industrial processes and a limited range of materials in the production of the major project • Uses and documents some basic industrial technologies in the production of the major project • Demonstrates solutions to some problems in major project production <p>Candidates may achieve 17 – 24 marks as indicated above OR by satisfying a combination of the criteria for other mark ranges.</p>	17 – 24
<ul style="list-style-type: none"> • Demonstrates basic quality in most aspects of the major project production • A project of minimal difficulty, with evidence of basic quality in the application of skills and techniques in the planning and production of the major project • Links between planning and production are not clear • Demonstrates and describes the use of a limited range of common industrial processes and materials in the production of the major project • Uses and documents some basic industrial technologies in the production of the major project • Demonstrates partial solutions to some simple problems in major project production <p>Candidates may achieve 9 – 16 marks as indicated above OR by satisfying a combination of the criteria for other mark ranges.</p>	9 – 16

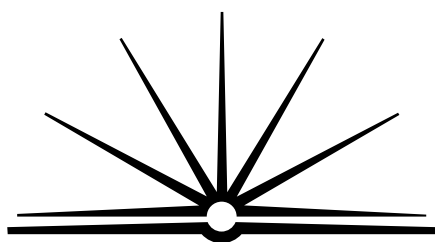
Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates poor quality in all aspects of the major project production • An undemanding project, with minimal or no evidence of quality in the application of skills and techniques in the planning and development of the major project • No links between planning and production are evident • Demonstrates the use of one or two basic processes and inappropriate use of materials in the production of the major project • Uses a very limited range of basic industrial technologies in the production of the major project • Demonstrates inappropriate solutions to some simple problems in major project production <p>Candidates may achieve 1 – 8 marks as indicated above OR by satisfying a subset of the criteria for other mark ranges.</p>	<p>1 – 8</p>

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Centre Number

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Student Number



B O A R D O F S T U D I E S
NEW SOUTH WALES

2001
HIGHER SCHOOL CERTIFICATE
SPECIMEN EXAMINATION

Industrial Technology – Multimedia Industries

General Instructions

- Reading time – 5 minutes
- Working time – $1\frac{1}{2}$ hours
- Board-approved calculators may be used
- Write using blue or black pen
- Write your Centre Number and Student Number at the top of this page and page 15

Section I Pages 2 – 13

Total marks **(60)**

- Attempt Questions 1 – 3
- Allow about 55 minutes for this section

Section II Pages 15 – 20

Total marks **(40)**

- Attempt Questions 4 – 5
- Allow about 35 minutes for this section

Section I

Total marks (60)

Attempt Questions 1 – 3

Allow about 55 minutes for this section

Answer the questions in the spaces provided.

Marks

Question 1 (20 marks)

- (a) A company employing 25 people has operated for a number of years using long-established techniques. The company is now experiencing financial difficulties and a downturn in sales. **9**

Identify and describe **THREE** factors that may be responsible for the company's difficulties. How could managers of the company address each factor and improve the financial position of the company?

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Question 1 continues on page 3

Question 1 (continued)

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(b) A business uses hazardous materials or equipment. Explain how the following factors influence the way in which these materials or equipment should be handled in the workplace.

(i) Government legislation

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(ii) Workplace communication

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Question 1 continues on page 4

Marks

Question 1 (continued)

- (c) Identify ONE trade union that is associated with multimedia industries, and evaluate the contribution it has made or could make to the development of safe working practices.

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End of Question 1

Question 2 (continued)

- (b) (i) What is meant by the term *equal employment opportunity* (EEO)? **2**

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- (ii) How might a business in the multimedia industries implement EEO principles in its workplace? **6**

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Question 2 continues on page 7

Question 2 (continued)

- (c) Sustainable development is an increasingly important concept, owing to growing concerns about non-renewable resources. **6**

To what extent have multimedia industries responded to the need for sustainable development?

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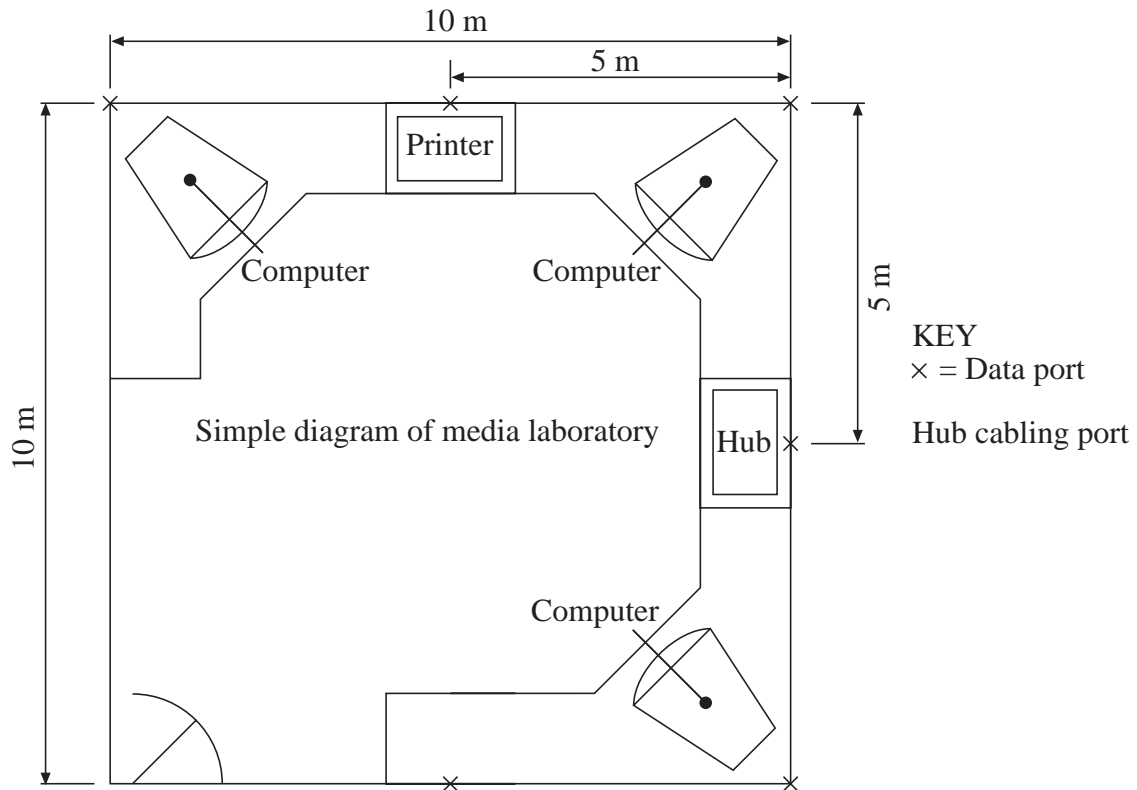
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End of Question 2

Question 3 (20 marks)

(a) A multimedia laboratory is to be set up as shown.



There are to be three computers and one printer, each individually cabled from its data port to the hub.

The following equipment will be used in the laboratory. Computers cost \$3800 each, a printer costs \$320, a hub costs \$840, and the cable costs \$5.70 per metre.

The cabling is to run around the room along the skirting board. An allowance of 1 metre of cable is to be made to reach each item from the skirting board.

(i) Complete the costing list.

4

<i>Description</i>	<i>Number required</i>	<i>Item cost</i>	<i>Cost</i>
Computer			
Printer			
Hub			
Cable	metres		
Total cost			

Question 3 continues on page 9

Question 3 (continued)

- (ii) Prepare a job description outlining the steps to be taken to set up the laboratory. **4**

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Question 3 continues on page 10

Question 3 (continued)

- (b) Safety in the workplace is of major concern in all areas of industry. Signs are used to draw attention to potentially dangerous areas or practices. What does each sign below indicate to staff? What features of each sign add to its effectiveness in communicating the intended message?

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Question 3 continues on page 11

Question 3 (continued)

- (c) Daniel is preparing his Folio for the Major Project using word-processing software. Figure 1 is the first draft of his cover page. Figure 2 is his final draft of the cover page. 6

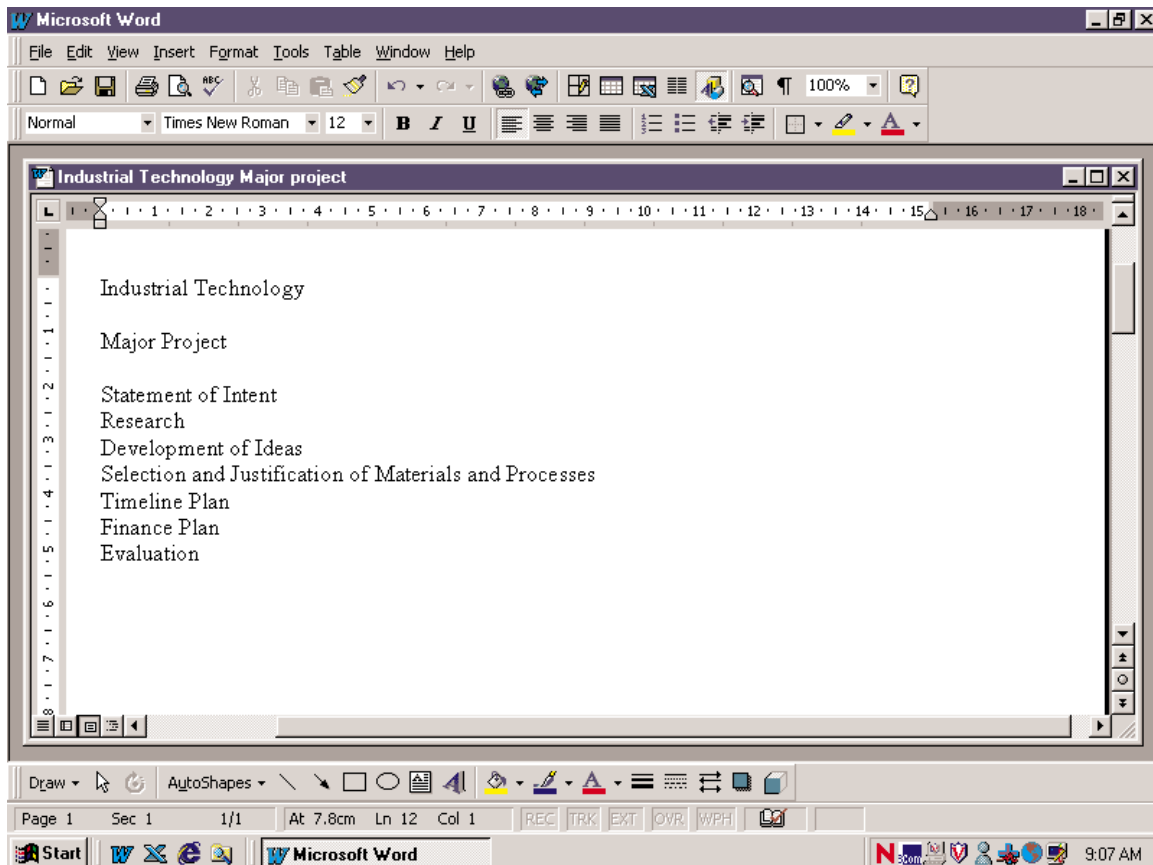


Fig. 1 Cover page, first draft

Question 3 continues on page 12

Question 3 (continued)

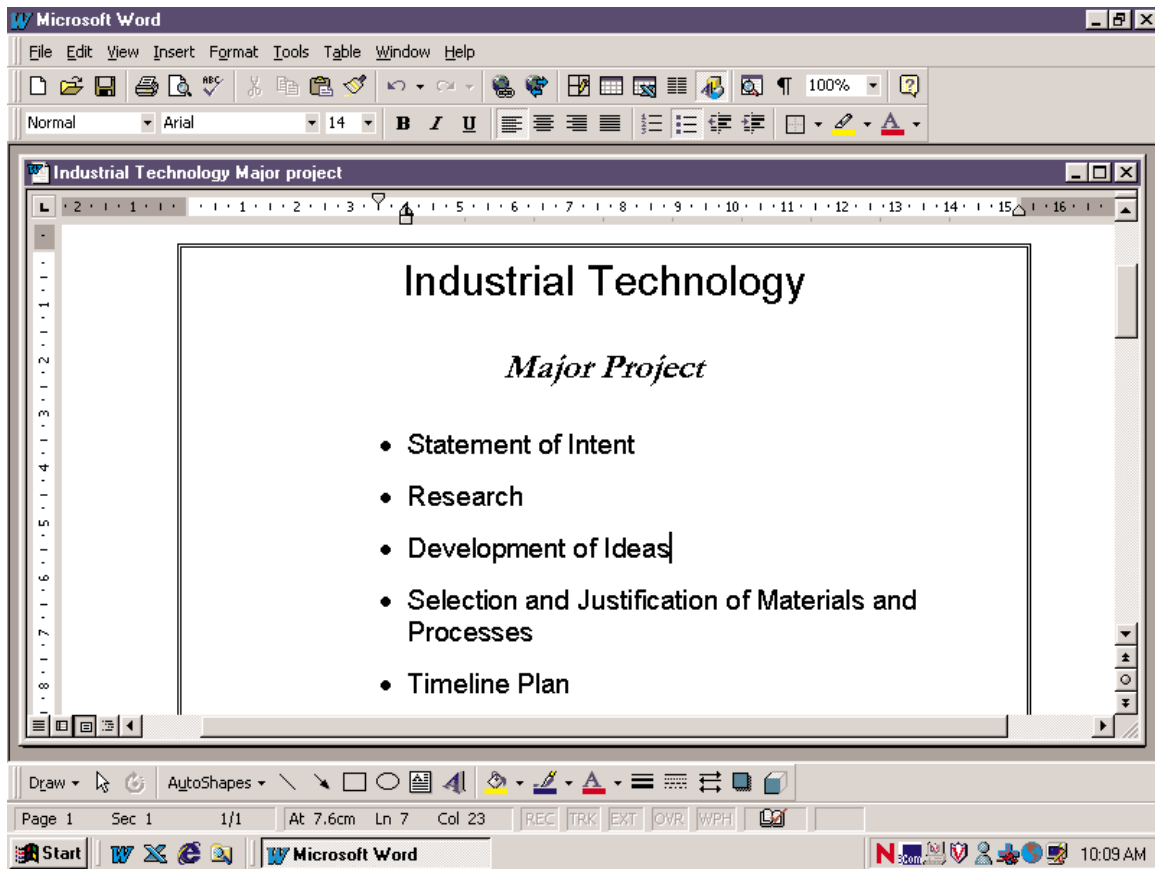


Fig. 2 Cover page, final draft

Identify THREE changes made to the cover page, and describe how the changes were made using word-processing software.

Change 1:

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Question 3 continues on page 13

Question 3 (continued)

Change 2:

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Change 3:

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End of Question 3

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Student Number

Section II

Total marks (40)

Attempt Questions 4 – 5

Allow about 35 minutes for this section

Answer the questions in the spaces provided.

Marks

Question 4 (20 marks)

(a) Define the following terms, giving examples from your study of multimedia industries.

(i) Copyright

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(ii) Authoring

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Question 4 continues on page 16

Question 4 (continued)

(iii) Image resolution

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(b) Explain how storyboarding is used in

(i) training and development.

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(ii) information.

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Question 4 continues on page 17

Question 4 (continued)

- (c) Explain the difference between a wav-file and a midi-file with respect to the use of sound multimedia presentation. **5**

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End of Question 4

Question 5 (20 marks)

- (a) Explain the difference between 16-bit colour and 24-bit colour. **2**

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- (b) Compare and contrast TWO image formats, with references to the advantages and disadvantages of each. **6**

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Question 5 continues on page 19

Question 5 (continued)

(c) Identify TWO video formats, and state an advantage and a disadvantage of each.

(i) Name **3**

Advantage

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Disadvantage.....

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(ii) Name **3**

Advantage

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Disadvantage.....

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Question 5 continues on page 20

Question 5 (continued)

- (d) Multimedia files can often be very large. Name TWO external storage devices currently available, and describe TWO advantages of each. **6**

External storage device 1

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External storage device 2

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End of paper