

**2003 HSC Notes from
the Marking Centre
Industrial Technology**

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2003 HSC NOTES FROM THE MARKING CENTRE

INDUSTRIAL TECHNOLOGY

Introduction

This document has been produced for the teachers and candidates of the Stage 6 course in Industrial Technology. It provides comments with regard to responses to the 2003 Higher School Certificate Examination, indicating the quality of candidate responses and highlighting the relative strengths and weaknesses of the candidature in each section and each question.

It is essential for this document to be read in conjunction with the relevant syllabus, the 2003 Higher School Certificate Examination, the Marking Guidelines and other support documents which have been developed by the Board of Studies to assist in the teaching and learning of Industrial Technology.

General Comments

In 2003, approximately 3675 candidates attempted the Industrial Technology examination. This candidature represented an increase of approximately 100 candidates compared to the 2002 candidature. The total candidature for the 2003 examination were divided amongst the syllabus focus areas as follows:

Focus area	Candidature
Automotive Industries	95
Building and Construction Industries	0
Electronics Industries	120
Graphics Industries	251
Metals and Engineering Industries	179
Multimedia Industries	258
Plastics Industries	8
Timber and Furniture Products Industries	2764

Teachers and candidates should be aware that examiners may ask questions that address the syllabus outcomes in a manner that requires candidates to respond by integrating knowledge, understanding and skills developed through studying the course. Knowledge, understanding and skills developed through the study of discrete sections should accumulate to a more comprehensive understanding than may be described in each section separately.

In the written examination many candidates were challenged due to their lack of knowledge of syllabus requirements. It appears that many candidates may still be placing too little regard on the written examination. Many candidates failed to read the questions carefully enough in order to determine the intent of the questions. Candidates often struggled with the concepts and terminology that were used in the examination. Improvements can be achieved by practising more examination - style questions and developing a greater understanding of the glossary of key words.

Industrial Technology

2003 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
1 (a)	2	Structural factors	H1.1
1 (b)	2	Environmental factors	H1.1, H7.1
1 (c)	4	Structural factors	H1.1
1 (d)	4	OHS	H1.1, H1.2, H7.1
1 (e)	8	Environ/sociological	H1.1, H1.2, H7.1
2 (a)	2	Technical factors	H1.2
2 (b)	2	Technical factors	H1.2
2 (c)	4	Technical factors	H1.1, H1.2
2 (d)	4	Technical factors	H1.1, H1.2
2 (e)	8	Personal issues/OHS	H1.1, H1.2
3 (a) (i)	1	Workplace communication	H5.1
3 (a) (ii)	2	Workplace communication	H5.1
3 (a) (iii) (1)	3	Workplace communication	H3.1
3 (a) (iii) (2)	2	Workplace communication	H3.1
3 (b)	4	Workplace communication	H5.1, H5.2
3 (c)	8	Workplace communication	H5.1, H5.2
Automotive			
4 (a)	1	Power sources	H6.1
4 (b)	2	Government regulations	H4.3, H6.1
4 (c)	4	Power sources/engine systems	H4.3, H6.1
4 (d)	5	Power source/engine systems	H1.2, H4.3, H6.1
4 (e)	8	Power sources	H1.2, H4.3, H6.1
5 (a)	2	Chassis and related components	H1.2, H2.1, H4.3, H6.1
5 (b)	2	Chassis and related components	H1.2, H2.1, H4.3, H6.1

Question	Marks	Content	Syllabus outcomes
5 (c)	4	Chassis and related components	H1.2, H2.1, H4.3, H6.1
5 (d)	4	Tools and equipment/OHS	H1.2, H2.1, H4.3, H6.1
5 (e)	8	Body	H1.2, H2.1, H4.3, H6.1
Timber products and furniture			
4 (a)	1	Materials	H1.2
4 (b)	3	Tools/processes	H1.2
4 (c)	3	Processes, tools, machinery	H1.2
4 (d)	5	Processes, tools, machinery	H1.2, H4.3
4 (e)	8	Materials	H4.3, H6.1
5 (a)	1	Processes, tools, machinery	H4.3
5 (b)	3	Processes, tools, machinery	H1.2, H4.3, H6.1
5 (c)	3	Processes, tools, machinery	H5.3, H6.1
5 (d)	5	Processes, tools, machinery	H2.1
5 (e)	8	Processes, tools, machinery	H1.2, H4.3, H6.1
Multimedia			
4 (a)	2	Processes, tools, machinery	H1.2
4 (b)	2	Processes, tools, machinery	H1.2
4 (c)	4	Processes, tools, machinery	H1.2
4 (d)	4	Processes, tools, machinery	H1.2, H4.3
4 (e)	8	Processes, tools, machinery	H1.2, H4.3, H6.1
5 (a)	2	Materials and resources	H1.2
5 (b)	2	Materials and resources	H1.2, H4.3
5 (c)	3	Materials and resources	H1.2, H4.3, H6.1
5 (d)	5	Processes, tools, machinery/OHS	H2.1
5 (e)	8	Processes, tools, machinery	H1.2, H2.1, H4.3, H6.1

Question	Marks	Content	Syllabus outcomes
Electronics			
4 (a)	2	Electronic principles	H4.3
4 (b)	2	Electronic principles	H4.3
4 (c)	4	Electronic principles	H1.2, H4.3, H6.1
4 (d)	4	Electronic principles	H1.2, H4.3, H6.1
4 (e)	8	Electronic principles	H4.3
5 (a)	2	Electronic processes	H4.3, H6.1
5 (b)	2	Electronic processes	H4.3, H6.1
5 (c)	4	Electronic processes	H1.2, H4.3, H6.1
5 (d)	4	Instrument and test equipment	H1.2, H4.3
5 (e)	8	Instrument and test equipment/OHS	H1.2, H2.1, H4.3, H6.1
Metals and Engineering			
4 (a)(i)	1	Materials	H4.3
4 (a)(ii)	1	Materials	H4.3
4 (b)	2	Materials	H1.2, H4.3
4 (c)	4	Processes, tools, machinery	H1.2, H4.3, H6.1
4 (d)	4	Processes, tools, machinery	H1.2, H4.3, H6.1
4 (e)	8	Processes, tools, machinery	H1.2, H4.3, H6.1
5 (a)	2	Processes, tools, machinery	H4.3
5 (b)	2	Processes, tools, machinery	H1.2, H4.3
5 (c)	3	Processes, tools, machinery	H1.2, H4.3, H6.1
5 (d)	5	Processes, tools, machinery/OHS	H1.2, H2.1, H4.3
5 (e)	8	Processes, tools, machinery/OHS	H1.2, H2.1, H4.3, H6.1
Graphics			
4 (a)	2	Processes	H1.2
4 (b)	2	Processes	H1.2

Question	Marks	Content	Syllabus outcomes
4 (c)	4	Processes	H4.3
4 (d)	4	Principles/standards	H6.1
4 (e)	8	Processes	H4.3, H6.1
5 (a) (i)	1	Processes	H1.2
5 (a) (ii)	1	Processes	H4.3
5 (b)	2	Processes	H4.3
5 (c)	4	Processes	H1.2
5 (d)	4	Equipment/OHS	H1.2, H4.3
5 (e)	8	Processes	H6.1, H4.3
Plastics			
4 (a) (i)	1	Materials	H1.2
4 (a) (ii)	1	Processes	H1.2
4 (b) (i)	2	Materials	H1.2, H4.3
4 (b) (ii)	4	Materials, processes	H1.2, H4.3, H6.1
4 (b) (iii)	4	Materials, processes	H1.2, H4.3, H6.1
4 (b) (iv)	8	Materials, processes and OHS	H1.2, H2.1, H4.3, H6.1
5 (a) (i)	1	Materials	H1.2
5 (a) (ii)	1	Materials	H1.2
5 (b)	3	Materials	H1.2, H4.3
5 (c)	3	Materials, processes	H1.2, H4.3, H6.1
5 (d)	4	Materials, processes	H1.2, H4.3, H6.1
5 (e)	8	Materials, processes	H1.2, H4.3, H6.1

2003 HSC Industrial Technology – Section I Marking Guidelines

Question 1 (a)

Outcomes assessed: H1.1

MARKING GUIDELINES

Criteria	Marks
• Identifies TWO issues that may have influenced the decision to relocate	2
• Identifies ONE issue that may have influenced the decision to relocate	1

Question 1 (b)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of TWO environmental responsibilities that must be addressed when vacating the present site	2
• Indicates the main features of ONE environmental responsibility that must be addressed when vacating the present site	1

Question 1 (c)*Outcomes assessed: H1.1***MARKING GUIDELINES**

Criteria	Marks
• Discusses TWO factors that should be considered when choosing the new site	4
• Discusses ONE factor that should be considered when choosing the new site and identifies ONE other	3
• Identifies more than ONE factor that would need to be considered when choosing the new site	2
• Names ONE factor that would need to be considered when choosing the new site	1

Question 1 (d)*Outcomes assessed: H1.1, H1.2, H7.1***MARKING GUIDELINES**

Criteria	Marks
• Identifies and describes two OHS issues that would need to be reviewed in the new workplace	4
• Identifies but an incomplete description of two OHS issues that would need to be reviewed or identifies and describes one OHS issue and identifies one other	3
• Names two OHS issues that need to be reviewed OR	2
• Names and describes one OHS issues	
• Names one OHS issues that would need to be reviewed	1

Question 1 (e)*Outcomes assessed: H1.1, H1.2, H7.1***MARKING GUIDELINES**

Criteria	Marks
• Relates cause and effect, clearly linking the relocation to environmental and sociological factors	8
• Outlines the possible environmental and sociological effects on the community	6–7
• An explanation showing a possible environmental OR sociological effect on the community	4–5
• Outlines a possible environmental OR sociological effect on the community OR names two environmental and two sociological effects	2–3
• Makes any environmental OR sociological statement that is relevant to the effect on the community	1

Question 2 (a)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
• States meaning of <i>mechanisation</i> and identifies features of <i>mechanisation</i>	2
• Provides an example of <i>mechanisation</i> or a related term OR a meaning only	1

Question 2 (b)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
• Indicates the main features of ONE aspect of IND-TECH's operation	2
• Names ONE aspect of IND-TECH's operation OR gives an example of an area to be upgraded	1

Question 2 (c)*Outcomes assessed: H1.1, H1.2***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Provides characteristics and features of TWO methods of evaluating upgraded mechanisation	4
<ul style="list-style-type: none">Identifies TWO methods used to evaluate upgraded mechanisation with a description of ONE method	3
<ul style="list-style-type: none">Describes ONE method of evaluating upgraded mechanisation OR <ul style="list-style-type: none">Identifies TWO methods of evaluation with no description	2
<ul style="list-style-type: none">Names a method used to evaluate upgraded mechanisation OR <ul style="list-style-type: none">Gives example of an effect	1

Question 2 (d)*Outcomes assessed: H1.1, H1.2***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Outlines more than one advantage for IND-TECH and its workers, on using training programs to train staff on using upgraded mechanisation	4
<ul style="list-style-type: none">Outlines more than one advantage of using training programs to train staff on using upgraded mechanisation for EITHER IND-TECH OR its workers	3
<ul style="list-style-type: none">Outlines features of training programs OR identifies more than one advantage for EITHER IND-TECH OR its workers	2
<ul style="list-style-type: none">Names one advantage of using training programs OR <ul style="list-style-type: none">Names a training program	1

Question 2 (e)*Outcomes assessed: H1.1, H1.2***MARKING GUIDELINES**

Criteria	Marks
• Identifies and analyses more than one issue that could arise between management and workers as a result of upgraded levels of mechanisation	8
• Identifies and gives a description of more than one issue that could arise between management and workers when new machines/processes are introduced	6–7
• Identifies more than one issue that could arise between management and workers when new machines/processes are introduced, describing one in detail	4–5
• Names more than one issue linking management, workers and upgraded mechanisation	2–3
• Names an issue linking management, workers and mechanisation	1

Question 3 (a) (i)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
• Names a suitable software application	1

Question 3 (a) (ii)*Outcomes assessed: H5.1***MARKING GUIDELINES**

Criteria	Marks
• Names FOUR formatting features	2
• Names TWO or THREE formatting features presentation	1

Question 3 (a) (iii) (1)
Outcomes assessed: H3.1
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Produces a graph which shows the monthly production rate • Indicates the months on the horizontal axis • Graphs the current average monthly production rate 	3
<ul style="list-style-type: none"> • Produces a graph which shows the monthly production rate AND <ul style="list-style-type: none"> • Indicates the months on the horizontal axis OR <ul style="list-style-type: none"> • Graphs the correct average monthly production rate 	2
<ul style="list-style-type: none"> • Produces a graph showing the monthly production rate OR <ul style="list-style-type: none"> • Graphs the correct average monthly production rate • OR • Indicates the months on the horizontal axis 	1

Question 3 (a) (iii) (2)
Outcomes assessed: H3.1
MARKING GUIDELINES

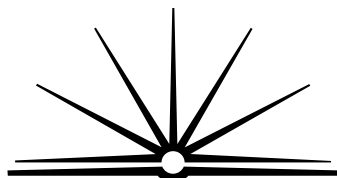
Criteria	Marks
<ul style="list-style-type: none"> • Indicates the production rate for September on the graph 	2
<ul style="list-style-type: none"> • Indicates an upward production trend on the graph 	1

Question 3 (b)
Outcomes assessed: H5.1, H5.2
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Provide characteristics and features of a communication procedure used to improve materials handling 	4
<ul style="list-style-type: none"> • Outlines a procedure of communication used to improve materials handling 	3
<ul style="list-style-type: none"> • Identifies a communication procedure used to improve materials handling 	2
<ul style="list-style-type: none"> • Names a procedure to communicate information 	1

Question 3 (c)*Outcomes assessed: H5.1, H5.2***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Graphical representation showing the sequence of the production process• Names each piece of equipment used• States the process carried out• Indicates where quality control would occur	8
<ul style="list-style-type: none">• Graphical representation of a production process• Names each piece of equipment used• Indicates some quality controls	6–7
<ul style="list-style-type: none">• Non graphical indication of production process covering all areas OR <ul style="list-style-type: none">• Graphical representation of a non-industry production process, naming each piece of equipment and quality checks	4–5
<ul style="list-style-type: none">• Graphical or non-graphical representation of a non-industry production process	2–3
<ul style="list-style-type: none">• Some indication of a production process	1



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

2003 HSC Industrial Technology (Automotive Industries) Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H6.1

MARKING GUIDELINES

Criteria	Marks
• Identifies an advantage that a rotary engine has over reciprocating engine	1

Question 4 (b)

Outcomes assessed: H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Identifies more than one reason why governments need to regulate vehicle modification	2
• Lists a reason	1

Question 4 (c)*Outcomes assessed: H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Correctly identifies both stages and provides features and characteristics of the process that is occurring at each stage	4
<ul style="list-style-type: none">• Correctly identifies both stages and provides features and characteristics of the process at one of the stages OR <ul style="list-style-type: none">• Correctly identifies one stage and provides features and characteristics of the process at both stages	3
<ul style="list-style-type: none">• Correctly identifies both stages OR <ul style="list-style-type: none">• Provides features and characteristics of the process at both stages OR <ul style="list-style-type: none">• Identifies one stage and provides features and characteristics of the process at that stage	2
<ul style="list-style-type: none">• Correctly identifies any stage	1

Question 4 (d)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Correctly identifies and gives a well structured accurate explanation of the advantages of overhead cam system	5
<ul style="list-style-type: none">• Correctly identifies and gives a reasonable explanation of some advantages	4-3
<ul style="list-style-type: none">• Correctly identifies different advantages	1-2

**Question 4 (e)***Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• A well structured comparison of both power sources and a logically developed discussion covering a range of advantages and disadvantages	8
• A well structured comparison of both power sources and a logically developed discussion covering a range of advantages or disadvantages	6–7
• A basic discussion of advantages and disadvantages but lacking a comparison of the power sources	4–5
• A basic discussion that is biased toward one or the other power source	2–3
• A list of some advantages and some disadvantages of each	1

Question 5 (a)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Provides more than one reason why differential gears are used in a rear wheel drive vehicle	2
• Provides one reason why differential gears are used in a rear wheel drive vehicle	1

Question 5 (b)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Correctly labels three or four components	2
• Correctly labels one or two components	1

Question 5 (c)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

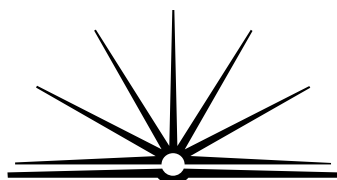
Criteria	Marks
• Correctly identifies two advantages together with a well structured and detailed explanation as to how they have improved efficiency	4
• Correctly identifies two advances with a brief explanation	2–3
• A list of some advances OR • One explanation	1

Question 5 (d)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• A logically presented answer indicating the main features of at least two important safety considerations	4
• A list of more than one safety consideration, indicating the features of one of these	2–3
• A list of more than one safety consideration	1

Question 5 (e)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• A logically sequenced answer indicating the main features of the processes of repairing and refinishing the damaged panel	8
• A logically sequenced answer indicating the main features of most of the processes of repairing and refinishing the panel	6–7
• A logically sequenced answer indicating the main features of the repair or refinishing of the panel	4–5
• An answer indicating the main features of most of the process of the repair or refinishing of the panel	2–3
• A brief list of some steps that are involved in the repair or refinishing process	1



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

2003 HSC Industrial Technology (Electronics) Marking Guidelines

Question 4 (a)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Names two feasible signals	2
• Names one feasible signal	1

Question 4 (b)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Two correctly placed table entries	2
• One correctly placed table entry	1

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Names a function and provides characteristics and features of the charging of a capacitor	4
• Names a function, with some details of how a capacitor is charged	3
• Names a function with some basic understanding of how a capacitor is charged	2
• A relevant statement relating to either the function or charging of a capacitor	1

Question 4 (d)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Provides a detailed explanation of the circuit operation, indicating the correct function of a variety of different components	4
• Provides an explanation of the circuit operation, indicating the correct function of some components	3
• Provides an explanation of the circuit operation, indicating the correct function of a component	2
• Provides a relevant statement relating to the circuit operation	1

Question 4 (e)*Outcomes assessed: H4.3***MARKING GUIDELINES**

Criteria	Marks
• Correct sequence of calculations, with a correct answer, with correct units	8
• Correct sequence of calculations, with a correct answer, without units or with incorrect units OR • Correct sequence of calculations with a minor computation error, with correct units	6–7
• Correct sequence of calculations with computation errors and correct units	4–5
• Some relevant calculations	2–3
• A relevant calculation	1

Question 5 (a)*Outcomes assessed: H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Names two appropriate strategies	2
• Names one appropriate strategy	1

Question 5 (b)
Outcomes assessed: H4.3, H6.1
MARKING GUIDELINES

Criteria	Marks
• Correct value with '+' polarity indicated or implied by calculations	2
• Correct value with '-' sign	1

Question 5 (c)
Outcomes assessed: H1.2, H4.3, H6.1
MARKING GUIDELINES

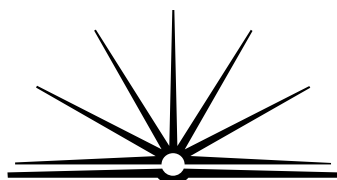
Criteria	Marks
• Provides characteristics and features of an IC, and indicates at least two correct advantages of an IC, giving reasons	4
• Provides characteristics and features of an IC, and indicates a correct advantage of an IC, giving reasons	3
• Provides some characteristics and features of an IC OR • Indicates two correct advantages of an IC, giving reasons	2
• A relevant statement about an IC OR • Names a correct advantage of an IC	1

Question 5 (d)
Outcomes assessed: H1.2, H4.3
MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of: <ul style="list-style-type: none"> – Correct setting up of the oscilloscope – Correct process of measuring voltage across the electronic component 	4
• Provides characteristics and features of: <ul style="list-style-type: none"> – Correct setting up of the oscilloscope – Incorrect process of measuring voltage across the electronic component OR vice versa	3
• Provides characteristics and features of correct setup or correct measurement of voltage	2
• Provides a relevant statement about the process	1

**Question 5 (e)***Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies issues and provides points for and/or against all aspects: production, assembly and testing, including reference to OHS and environmental considerations	8
<ul style="list-style-type: none">Identifies issues and provides points for and/or against two aspects: production, assembly and testing, including reference to OHS and environmental considerations	6–7
<ul style="list-style-type: none">Identifies issues and provides points for and/or against one aspect: production, assembly and testing, including reference to OHS and environmental considerations	4–5
<ul style="list-style-type: none">Provides characteristics and features of one or more aspect: production, assembly and testing, no reference to OHS and environmental considerations <p>OR</p> <ul style="list-style-type: none">Provides characteristics and features of OHS and environmental considerations with no reference to production, assembly and testing	2–3
<ul style="list-style-type: none">Provides a relevant statement about either production, assembly, testing, OHS or environmental considerations	1



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

2003 HSC Industrial Technology (Graphics Industries) Marking Guidelines

Question 4 (a)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none">• Square outline in right-side view indicated AND <ul style="list-style-type: none">• Diagonal in either orientation indicated	2
<ul style="list-style-type: none">• Square outline in right-side view indicated OR <ul style="list-style-type: none">• Diagonal in either orientation indicated	1

Question 4 (b)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none">• Isometric 'rectangular prism' and cut away/detail of front section indicated AND <ul style="list-style-type: none">• Orientation and proportion correctly indicated	2
<ul style="list-style-type: none">• Isometric 'rectangular prism' and cut away/detail of front section indicated, BUT not drawn in proportion or in the correct orientation	1

**Question 4 (c)***Outcomes assessed: H4.3***MARKING GUIDELINES**

Criteria	Marks
• Identifies advantages, for the architect and the client, of using rendered drawings, giving reasons	4
• Identifies an advantage for each, the architect and the client, giving reasons	3
• Identifies an advantage for either the architect or the client, giving reasons	2
• Names an advantage for either the architect or the client	1

Question 4 (d)*Outcomes assessed: H6.1***MARKING GUIDELINES**

Criteria	Marks
• Describes a range of presentation drawings suitable for the product, and • Provides reasons for each type of drawing chosen for the presentation	4
• Describes a type of drawing which could be used to present to the client, and • Provides a reason for the drawing type chosen	3
• Names drawings suitable for presentation to the client OR • Provides reasons why particular types of drawings would be suitable for presentation to the client	2
• Name one type of suitable drawing only	1

**Question 4 (e)***Outcomes: H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Provides why each of the techniques is used• Reasons given for the need to provide 'internal/interior' detail• Provide characteristics and features of a range of benefits of using the computer-assisted technology	8
<ul style="list-style-type: none">• Provides why each of the techniques is used• Reasons given for the need to provide 'internal/interior' detail• Provide characteristics and features of one benefit of computer-assisted technology	6–7
<ul style="list-style-type: none">• Provides why each of the techniques is used• Provide some characteristics and features of using computer-assisted technology	4–5
<ul style="list-style-type: none">• 'Fly through' or sectional views described, and• Provide some characteristic or feature of using computer-assisted technology	2–3
<ul style="list-style-type: none">• Use of computer-assisted technology in producing drawings described OR <ul style="list-style-type: none">• 'Fly through' or sectional views described	1

Question 5 (a) (i)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Identifies correct type of drawing shown in the three examples	1

Question 5 (a) (ii)*Outcomes assessed: H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Lists ONE advantage perspective drawings have over other forms of pictorial drawings	1

**Question 5 (b)***Outcomes assessed: H4.3***MARKING GUIDELINES**

Criteria	Marks
• Identifies at least two graphical rendering techniques which are used to enhance pictorial line drawings	2
• Identifies ONE rendering technique which could be used to enhance pictorial line drawings	1

Question 5 (c)*Outcomes assessed: H1.2***MARKING GUIDELINES**

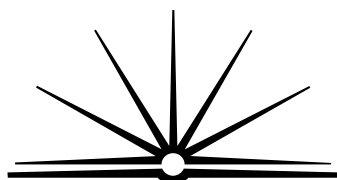
Criteria	Marks
• Provides at least two characteristics/features for each type of drawing	4
• Provides a characteristic/feature for each type of drawing	3
• Names both types of architectural drawing correctly	2
OR	
• Provides characteristics/features (at least two) for ONE type of drawing	
• Names one of the architectural drawings shown	1

**Question 5 (d)***Outcomes assessed: H2.1, H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Identification of OHS issues (at least two) associated with consistent exposure to computer monitors by graphic designers AND <ul style="list-style-type: none">• Proposes solutions relevant to OHS issues identified above	4
<ul style="list-style-type: none">• Identification of one OHS issue associated with consistent exposure to computer monitors by graphic designers AND <ul style="list-style-type: none">• Proposes solutions to OHS issue identified above	3
<ul style="list-style-type: none">• Identification of OHS issues (at least two) associated with consistent exposure to computer monitors by graphic designers OR <ul style="list-style-type: none">• List of solutions to OHS issues	2
<ul style="list-style-type: none">• Only one OHS issue identified OR <ul style="list-style-type: none">• A recognition of OHS issues in general	1

Question 5 (e)*Outcomes assessed: H6.1, H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Identification of steps taken by the architect to develop a model (physical or conceptual) and designs for the redevelopment AND <ul style="list-style-type: none">• Identification of issues faced by the architect in determining redevelopment concepts as indicated on the diagram, providing points for the steps identified	8
<ul style="list-style-type: none">• Identification of steps taken by architect to develop a model (physical or conceptual) or designs for the redevelopment AND <ul style="list-style-type: none">• Identification of an issue/issues faced by the architect in determining redevelopment concepts as indicated on the diagram, providing points for one of the steps identified	6–7
<ul style="list-style-type: none">• Identification of steps taken by architect to develop a model and designs for the redevelopment OR <ul style="list-style-type: none">• Identification of issues faced by architect in determining redevelopment concepts as indicated on the diagram	4–5
<ul style="list-style-type: none">• Names redevelopment items related, as shown on the diagram OR <ul style="list-style-type: none">• Identifies an issue related to their incorporation in the redevelopment	2–3
<ul style="list-style-type: none">• Names a redevelopment item as shown on the diagram	1



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

2003 HSC Industrial Technology (Metals and Engineering Industries)

Marking Guidelines

Question 4 (a) (i)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Correct identification of RHS	1

Question 4 (a) (ii)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Correct identification of feature of 1.6	1

Question 4 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides reasons why the tubing has rounded corners	2
• Provides a reason why the tubing has rounded corners	1

Question 4 (c)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Names a suitable machine and provides characteristics and features of a method to ensure consistent length and angle of the components	4
<ul style="list-style-type: none">Names a suitable machine. Outlines a method used to ensure consistent length and angle of the components	3
<ul style="list-style-type: none">Names a suitable machine. Outlines a method used to ensure consistent length or angle of the components	2
<ul style="list-style-type: none">Names a suitable machine OR <ul style="list-style-type: none">Outlines a method used to ensure consistent length or angle of the components	1

Question 4 (d)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Names a suitable welding process giving reasons for its suitabilityIndicates the safety precautions that must be used with the operation	4
<ul style="list-style-type: none">Names a suitable welding process giving a reason for its suitability OR <ul style="list-style-type: none">Names a suitable welding process indicating the safety precautions that must be used when using the process	3
<ul style="list-style-type: none">Names a suitable welding process and indicates a safety precaution that must be observed when using the process OR <ul style="list-style-type: none">Indicates suitable safety precautions used with the process only	2
<ul style="list-style-type: none">Names a suitable welding process	1

Question 4 (e)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Provides characteristics and features of the stages in each of preparation, welding and finishing relating to the welding process in part (d)	8
<ul style="list-style-type: none">Provides characteristics and features of stages in any TWO of preparation, welding or finishing	6–7
<ul style="list-style-type: none">Indicates the main features of the stages in any one of preparation, welding or finishing <p>OR</p> <ul style="list-style-type: none">Lists the steps in all three stages of preparation, welding and finishing	4–5
<ul style="list-style-type: none">Lists the steps in any two of preparation, welding and finishing	2–3
<ul style="list-style-type: none">Lists some steps in preparation, welding or finishing	1

Question 5 (a)*Outcomes assessed: H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Names feature <i>A</i> and <i>B</i>	2
<ul style="list-style-type: none">Names feature <i>A</i> or <i>B</i>	1

Question 5 (b)*Outcomes assessed: H1.2, H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Provides characteristics and features of the process	2
<ul style="list-style-type: none">Lists steps used in the process	1

**Question 5 (c)***Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

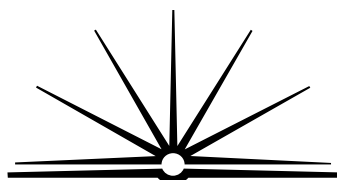
Criteria	Marks
<ul style="list-style-type: none">Names all relevant parts of lathe that must be adjustedProvides characteristics and features of the process used	3
<ul style="list-style-type: none">Names all the parts of the lathe that must be adjustedNames the process used	2
<ul style="list-style-type: none">Names some parts of the lathe that must be adjusted OR <ul style="list-style-type: none">Names the process used	1

Question 5 (d)*Outcomes assessed: H1.2, H2.1, H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Provides characteristics and features of the knurling process. Identifies safety checks	5
<ul style="list-style-type: none">Provides characteristics and features of the knurling process. Identifies a safety check	4
<ul style="list-style-type: none">Outlines the knurling process OR <ul style="list-style-type: none">Identifies safety checks	3
<ul style="list-style-type: none">Names the process and identifies a safety check	2
<ul style="list-style-type: none">Names the process or indicates a safety check	1

**Question 5 (e)***Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Describes the internal and external threading process, naming all the tools used. Reference to M 8 × 1.5	8
• Describes the internal and external threading process, gives an incomplete list of tools used. Reference to M 8 × 1.5	6–7
• Describes the internal or external threading process, naming all the tools used. Reference to M 8 × 1.5	4–5
• Lists the stages in either the internal or external threading process. No reference to M 8 × 1.5	2–3
• Names a process or some tools used	1



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

2003 HSC Industrial Technology (Multimedia Industries) Marking Guidelines

Question 4 (a)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• State the meaning of the term multimedia, identifying an essential quality	2
• State the meaning of the term multimedia	1

Question 4 (b)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Correct completion of table	2
• Correct answer for either camera or scanner	1

Question 4 (c)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• States meaning of <i>copyright</i> with an explanation of more than one responsibility of the author	4
• States meaning of <i>copyright</i> with an explanation of ONE responsibility of the author	3
• An understanding of <i>copyright</i> with an understanding of the responsibilities of the author	2
• Some idea of <i>copyright</i> or responsibilities of the author	1

Question 4 (d)*Outcomes assessed: H1.2, H4.3***MARKING GUIDELINES**

Criteria	Marks
• Show how the three file types are similar or different	4
• Shows how two of the file types are similar or different	3
• Identifies two file types and their characteristics or features	2
• Identifies two of the file types	1

Question 4 (e)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Names and provides points for and/or against features that need to be addressed in the development of the website	8
• Names and provides points for and/or against a feature that needs to be addressed in the development of the website	6–7
• Names a feature and lists some of the issues that need to be considered with no discussion	4–5
• Names issues that need to be considered with no discussion	2–3
• Names an issue or feature that needs to be considered	1

Question 5 (a)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
• States the meaning and identifies essential qualities of bandwidth	2
• A limited understanding of bandwidth	1

Question 5 (b)*Outcomes assessed: H1.2, H4.3***MARKING GUIDELINES**

Criteria	Marks
• Provides the characteristics/features of a method to download from the web site	2
• Recognises and names a method	1

Question 5 (c)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

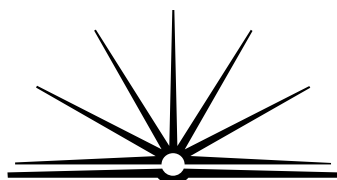
Criteria	Marks
• Indicate the features of at least two different factors that affect the performance of the three hardware devices	3
• Indicate the features of two different factors that affect the performance of two hardware devices listed	2
• Indicate two factors that affect the performance of one of the devices	1

Question 5 (d)*Outcomes assessed: H2.1***MARKING GUIDELINES**

Criteria	Marks
• Names a variety of different poor work practices illustrated in the diagram. Describes methods of rectifying them.	5
• Names some poor work practices illustrated in the diagram and describes methods of rectifying them	4
• Names a poor work practice illustrated in the diagram and describes a method of rectification	3
• Names a poor work practice illustrated in the diagram	2
• Names at least one poor work practice	1

Question 5 (e)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Identify more than one method and relate the implication of using them to efficiently transmit large files over the internet	8
• Identify more than one method but not fully relating the implication of using them to efficiently transmit large files over the internet	6–7
• Identify one method and relate the implication of using the method to effectively transmit large files over the internet	4–5
• Name more than one method, with little or no understanding of the implication involved	2–3
• Name a method that could be used to transmit large files	1



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

2003 HSC Industrial Technology – Plastics Industries Marking Guidelines

Question 4 (a) (i)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Names a suitable material	1

Question 4 (a) (ii)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Names a suitable moulding process	1

Question 4 (b) (i)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Names a resin giving a reason for its use	2
• Names a resin	1

Question 4 (b) (ii)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Names more than one suitable core material and recognises the differences between them	4
• Names more than one suitable core material but does not fully recognise the differences between them	3
• Names more than one suitable core material	2
• Names a core material	1

Question 4 (b) (iii)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Names two suitable reinforcing fabrics, making a judgement as to their suitability/performance	4
• Names two suitable reinforcing fabrics but only makes a judgement on the suitability/performance of one	3
• Names two suitable reinforcing fabrics	2
• Names one suitable reinforcing fabric	1

Question 4 (b) (iv)*Outcomes assessed: H1.2, H2.1, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• A comprehensive description of foam sandwich construction method, and main features of safe work practices indicated	8
• Provides a brief description of the foam sandwich construction and main features of safe work practices indicated	6–7
• Provides some features of the foam sandwich method with safe work practices identified	4–5
• Provides steps in the foam sandwich method of manufacture with no safe work practices identified	2–3
• Shows limited understanding of the foam sandwich method of manufacture	1

Question 5 (a) (i)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
• Names a suitable polymer for outer layer	1

Question 5 (a) (ii)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
• Names a suitable polymer for core	1

Question 5 (b)*Outcomes assessed: H1.2, H4.3***MARKING GUIDELINES**

Criteria	Marks
• Comparison of the properties of the materials identified in (a) (i) and (a) (ii)	3
• Comparison of only one property of the materials	2
• Does not relate materials to properties	1

Question 5 (c)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

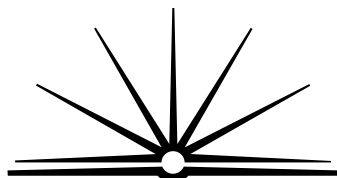
Criteria	Marks
• Identifies the main features that need to be considered when designing the mould	3
• Indicates some features that need to be considered when designing the mould	2
• Indicates a feature of the mould design	1

**Question 5 (d)***Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Describes fully a suitable process for the manufacture of the sailboard fin	4
• A brief description of a suitable manufacturing process for the sailboard fin	3
• Lists the steps of a suitable manufacturing process	2
• Names a suitable manufacturing process	1

Question 5 (e)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
• Names and describes the steps used in the process of manufacturing the sailboard	8
• Names and provides an incomplete description of the steps used in the process of manufacturing the sailboard	6–7
• Lists the steps used in the process of manufacturing the sailboard	4–5
• An incomplete list of steps used in the manufacturing process	2–3
• Names the process of manufacturing the sailboard	1



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

2003 HSC Industrial Technology (Timber and Furniture) Marking Guidelines

Question 4 (a)

Outcomes assessed: HI.2

MARKING GUIDELINES

Criteria	Marks
• Correct answer	1

Question 4 (b)

Outcomes assessed: HI.2

MARKING GUIDELINES

Criteria	Marks
• Suitable method – named, sketched. All correct	2
• Suitable method – named or sketched	1

Question 4 (c)*Outcomes assessed: H1.2***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies a suitable mass production process explaining how it ensures accuracy and consistency	4
<ul style="list-style-type: none">Identifies a suitable mass production process with some reference to accuracy and consistency	3
<ul style="list-style-type: none">Identifies a suitable mass production process explaining how it ensures accuracy or consistency <p>OR</p> <ul style="list-style-type: none">Identifies a non-mass production process explaining how it ensures accuracy and consistency	2
<ul style="list-style-type: none">Identifies a production process relating to the drilling of holes	1

Question 4 (d)*Outcomes assessed: H1.2, H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Cutting table correct with all parts listed and cutting layout consistent with cutting list and grain direction	5
<ul style="list-style-type: none">Incorrect sizing of one dimension on cutting list, but cutting layout consistent with cutting list (all items listed) <p>OR</p> <ul style="list-style-type: none">Correct cutting list but layout has incorrect grain direction or some components omitted	4
<ul style="list-style-type: none">Cutting list with parts omitted or more than one incorrect dimension/component, but cutting layout correct and consistent with cutting list <p>OR</p> <ul style="list-style-type: none">Cutting list correct	3
<ul style="list-style-type: none">Incorrect sizing of one dimension on cutting list or one component omitted <p>OR</p> <ul style="list-style-type: none">Cutting layout correct	2
<ul style="list-style-type: none">Some areas of the cutting list correct <p>OR</p> <ul style="list-style-type: none">Incorrect sizing of one dimension on cutting list	1

Question 4 (e)*Outcomes assessed: H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Discusses the impact of the production and use of MDF on society and the environment	8
<ul style="list-style-type: none">• Discusses the impact of both the production and use of MDF on either society or the environment OR <ul style="list-style-type: none">• Discusses the impact of either production or use on both society and the environment	6–7
<ul style="list-style-type: none">• Outlines of the impact of the production and use of MDF on society and the environment	4–5
<ul style="list-style-type: none">• Discusses the impact of either the production or use of MDF on either society or the environment• Outlines the impact of the production and use of MDF on either society or the environment	2–3
<ul style="list-style-type: none">• Discusses the production process OR <ul style="list-style-type: none">• Outlines some impact on society or the environment	1

Question 5 (a)*Outcomes assessed: H4.3***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Suitable timber named	1

Question 5 (b)*Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Explanation, clear sketches	2
<ul style="list-style-type: none">• Written explanation only OR <ul style="list-style-type: none">• Sketches only with no clear explanation OR <ul style="list-style-type: none">• Unclear sketch with unclear explanation	1

**Question 5 (c)***Outcomes assessed: H5.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Correct sketch showing pilot, clearance and countersink holes; explanation of how and why this is done	4
<ul style="list-style-type: none">• Correct sketch with some explanation of both how and why for each hole OR <ul style="list-style-type: none">• Correct sketch with explanation of either how or why for each hole OR <ul style="list-style-type: none">• Correct explanation of how and why for two holes with a matching sketch OR <ul style="list-style-type: none">• Correct explanation of how and why for each hole with no sketch	3
<ul style="list-style-type: none">• Correct explanation of how or why for two holes with no sketch OR <ul style="list-style-type: none">• Correct sketch with a partial explanation of how or why OR <ul style="list-style-type: none">• Incomplete sketch with a partial explanation of how and why	2
<ul style="list-style-type: none">• Correct sketch with no explanation of how or why OR <ul style="list-style-type: none">• Explanation of how and why for one hole only with no sketch OR <ul style="list-style-type: none">• Poor explanation	1

**Question 5 (d)***Outcomes assessed: H2.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Appropriate saw named, safety/maintenance checks identified and two or more precautions to be observed by the operator	5
<ul style="list-style-type: none">• Appropriate saw named, two safety/maintenance checks identified and two safety precautions to be observed by the operator OR <ul style="list-style-type: none">• Appropriate saw named and more than two safety/maintenance checks identified, but no personal safety mentioned	4
<ul style="list-style-type: none">• Appropriate saw named and one maintenance/safety check identified and two personal safety precautions identified OR <ul style="list-style-type: none">• No saw or incorrect saw is named but more than two safety and maintenance checks identified and two safety precautions to be observed by the operator identified	3
<ul style="list-style-type: none">• Appropriate saw named with one safety/maintenance check identified OR <ul style="list-style-type: none">• Appropriate saw named with only two personal safety precautions identified	2
<ul style="list-style-type: none">• Appropriate saw named OR <ul style="list-style-type: none">• One safety/maintenance check identified OR <ul style="list-style-type: none">• Two personal precautions identified	1

**Question 5(e)***Outcomes assessed: H1.2, H4.3, H6.1***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">Identifies and clearly explains more than one factor that must be considered when selecting materials, components and processes for the letterbox	8
<ul style="list-style-type: none">Identifies and partially explains more than one factor that must be considered when selecting materials, components and processes for the letterbox OR <ul style="list-style-type: none">Identifies factors for all three areas, and clearly explains more than one factor that must be considered for any two of the three areas	6–7
<ul style="list-style-type: none">Identifies one factor that must be considered for each of the three areas with no explanation for each factor	4–5
<ul style="list-style-type: none">Identifies factors relating to all three areas with no explanation OR <ul style="list-style-type: none">Identifies factors relating to two areas with some explanation OR <ul style="list-style-type: none">Identifies factors relating to one area only with clear explanation	2–3
<ul style="list-style-type: none">Names factors relating to only one area OR <ul style="list-style-type: none">Only gives a general explanation for selection or choices	1