

**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.

## Section I

### General Comments

Question 1 was generally well answered, but responses to Questions 2 and 3 were of a lesser quality. Many candidates failed to gain marks due to poor interpretation of the question parts and a lack of understanding of the key words.

### Specific Comments

#### Question 1

- (a) This part was well answered, with most candidates identifying two issues that influenced IND-TECH's move.
- (b) This part was well answered. Some candidates confused the present site with the new location. However, many responses indicated a good understanding of the environmental responsibilities.
- (c) Many candidates could identify two factors but failed to go further to discuss these issues.
- (d) Most candidates could identify two OHS issues, but many candidates failed to describe the issues they identified.
- (e) Candidates who could relate cause and effect of the environmental and sociological issues scored well. However many candidates answered with either a cause or an effect and did not relate their response to the community.

#### Question 2

- (a) Most candidates responded with a meaning only, or an example of the item. Very few were able to identify essential qualities as well. Some candidates did not appear to understand the key word 'define'.
- (b) This part was reasonably well answered. However, some candidates failed to identify the aspect of IND-TECH's operations they were dealing with, even though they gave examples of features worthy of upgraded mechanisation.
- (c) Some candidates described the effects of upgraded mechanism but failed to describe specific methods of evaluation. Better candidates were able to use specific technical terms to describe methods of evaluation eg survey, comparison and benchmarking.
- (d) Generally this part was well answered. Better responses addressed advantages for both IND-TECH and its workers. Many candidates made reference either to IND-TECH or its workers.
- (e) This question required candidates to identify and analyse issues. However many candidates, while identifying the issues, were unable to raise their response to an analytical level and merely structured their answer in simple point form.

### Question 3

- (a) (i) Most candidates were able to answer this part of the question correctly.
- (a) (ii) Most candidates were able to identify three or four formatting features. Several responses indicated where the formatting features occurred.
- (a) (iii)(1) The majority of candidates were able to plot the monthly production rates from January to June. Only a few candidates attempted to plot the average monthly production rate.
- (a) (iii)(2) This part was reasonably well answered with the majority of candidates making a correct response.
- (b) Most candidates were able to name a communication procedure but were unable to provide characteristics and features of that communication procedure. Some candidates named multiple procedures. A considerable number of candidates were aware of materials handling strategies but were unable to relate these to a communication procedure. Many candidates failed to differentiate between general OHS strategies and those specifically related to materials handling.
- (c) **Automotive Industries**  
Responses were inconsistent, with a large number of candidates omitting steps in the brake and removal sequence. Many candidates failed to identify the correct tools and equipment and many responses pertaining to the home workshop were evident. Important quality control strategies were often overlooked in checking correct brake operation.

#### **Electronics Industries**

Many candidates showed a reasonable understanding of a school-based process rather than an industrial sequence. Many candidates considered unrelated aspects. Responses indicated a poor knowledge of quality control.

#### **Graphics Industries**

A significant number of candidates did not attempt this section. Those who did failed to show an understanding of CAD packages and were generally unable to sequence the drawing in the question. Candidates showed little or no understanding of quality control in the drawing environment.

#### **Metals and Engineering Industries**

Most candidates responded with non-industrial production methods, with the majority failing to include reference to quality control.

#### **Multimedia Industries**

Candidates in general showed confused responses to the question. Some candidates used technical terms without understanding their function, and named programs without saying what they did. Some candidates addressed the production of the CD label rather than the sequencing of the multimedia presentation on the CD. Understanding of quality control was poor.

### **Plastics Industries**

This part was generally poorly answered. The product was designed to be made as a one-piece injection moulding. Some candidates considered a two-piece moulding and others a fabrication or lay-up. Most candidates showed little appreciation of the sequence involved and did not name the pieces of equipment.

### **Timber Products and Furniture Industries**

Responses to this part were generally poor. Most candidates responded with a non-industrial process with poor graphics and technical descriptions. Quality control was rarely indicated. Most candidates were unaware of industrial processes and equipment.

## **Section II**

### **Focus Area – Automotive Industries**

#### **General Comments**

The responses this year were of a higher standard than last year. There were very few non-attempts. In question 4(c) many candidates achieved full marks.

#### **Specific Comments**

#### **Question 4**

- (a) The majority of candidates showed an understanding but failed to qualify their answer eg 'small' rather than better power-to-weight ratio.
- (b) This part was generally well answered; however many candidates failed to give more than one reason.
- (c) This part was generally well answered. Some candidates failed to identify the two processes and only described them.
- (d) There was a large range of responses to this part. Some candidates displayed a detailed knowledge. Others demonstrated a lack of knowledge and only attempted to interpret the diagrams and did not realise that an overhead valve cylinder head does in fact contain two valves per cylinder, or the complexity of working on an overhead cam cylinder head.
- (e) There was a large range of responses to this part. Most candidates were able to give examples of advantages and disadvantages but only the better candidates gave a detailed comparison of the two power sources.

#### **Question 5**

- (a) Candidates generally had a good understanding of this part.
- (b) This part was well answered.



- (c) Most candidates misread the question and gave two advantages of brake technology. Candidates who correctly read the question generally had a sound knowledge of this technology.
- (d) Many candidates only described how to change a wheel on a car rather than outlining safety considerations. Many candidates limited their answer to the car falling off the jack.
- (e) This part was generally well answered with most candidates having a sound knowledge in this area. However many candidates limited their answer to either panel beating or re-painting the damaged panel and rarely gave an outline of both processes.

## **Focus Area – Electronics Industries**

### **General Comments**

Some questions were not well answered by the majority of candidates. However the higher mark question involving calculations was generally well answered by the majority of candidates who attempted it. Part 5(e) required candidates to discuss processes and from the responses it was evident that candidates failed to understand the definition of ‘discuss’.

### **Specific Comments**

#### **Question 4**

- (a) This part of the question was well answered by the majority of candidates. However some candidates confused analogue with sine wave.
- (b) Some candidates had no difficulty in completing the conversion between analogue and digital. Other candidates, however, seemed to lack a basic understanding of binary to decimal conversion.
- (c) Candidates demonstrated a general understanding of the functions of a capacitor, but many lacked knowledge of how a capacitor is charged.
- (d) Most candidates demonstrated an understanding of the relationship between the relay and the globe. However very few could link the operation of the relay to the charging of the capacitor. S2 was generally not provided as a reset switch, but rather as a bypass to R and C.
- (e) There were many good responses to this part. Many candidates displayed a thorough understanding of the calculations required. Some candidates, however, had difficulty converting units, and others with distinguishing between series and parallel resistors.

#### **Question 5**

- (a) This part was generally well answered by the majority of candidates. Responses indicated they had some knowledge of dealing with component operating conditions.
- (b) The majority of candidates answered this part very well. However few candidates appeared to have any real knowledge of the concept of the function of operational amplifiers.

- (c) Responses indicated that generally the operation of ICs was well understood by most candidates but the description of an IC was either inadequate or inappropriate.
- (d) Candidates who appeared to have had ‘hands-on experience’ with setting up and using CROs were able to list the sequence of operations necessary to correctly measure voltage. Few candidates however showed an understanding of reading the CRO signal and scaling it to produce a voltage value.
- (e) This part was not well answered. Many candidates were able to describe the process and issues in some depth, but very few entered into a ‘discussion’ as required in the question. Candidates who have been exposed to industrial practices provided a more realistic view of mass production as well as the OHS and environmental considerations. Other candidates merely repeated school classroom practices.

## **Focus Area – Graphics Industries**

### **General Comments**

Section II was generally well answered and responses indicated that candidates had a general knowledge of most areas that were examined. However some candidates did not read the questions thoroughly, failing to identify the setting up of the question.

### **Specific Comments**

#### **Question 4**

- (a) This part was generally well answered.
- (b) This part was generally poorly answered. The ‘starting point’ was not clearly understood by most candidates.
- (c) Candidates showed little understanding of what rendering was or how it was to be used. The definition of ‘discuss’ was not clearly understood and candidates did not read the whole question as most candidates only attempted part of it. There were only a few candidates who recognised the drawing as a rendered front view.
- (d) Candidates did not read the question fully in order to understand what was required. Responses indicated a poor understanding of a concept drawing. Candidates were also confused about the ‘types of drawings’ and their responses lacked specificity.
- (e) Generally candidates failed to read and understand the question. Few candidates addressed all aspects required in the question.

#### **Question 5**

- (a) (i) Most candidates had difficulty in identifying the type of drawing.  
  
(ii) This part was generally well answered. Candidates were able to relate the drawings to real life.

- (b) This part was generally poorly answered. Responses indicated only a basic understanding of rendering.
- (c) This part was generally well answered; however many candidates were unable to name the types of architectural drawings. Some candidates did not understand the definition of ‘describe’.
- (d) Most candidates were aware of OHS issues related to computer use. Many candidates had difficulty identifying the issues related specifically to graphic designers as against general computer use.
- (e) This part was generally not fully answered. Many candidates made no reference to a model at all. Annotated steps in the design process were not an obvious response from the candidates. The relationship between a model and the design process was absent in most responses. Candidates seemed unaware of council submission procedure.

## **Focus Area – Metals and Engineering Industries**

### **General Comments**

Question 4 was answered better than Question 5. It was evident that many candidates had a poor understanding of machining techniques and processes. Both questions gave candidates the opportunity to demonstrate their knowledge of some basic metal practices. Unfortunately it was again evident that candidates did not read the questions carefully enough to ensure that they addressed all aspects required in the questions, even though examiners felt that candidates knew more than was demonstrated in answers.

### **Specific Comments**

#### **Question 4**

- (a) (i) Responses to this part indicated a poor understanding of RHS. Many candidates responded with ‘rectangular’ for R and ‘steel’ for S.  
  
(ii) This part was generally well answered. Candidates had an excellent understanding of the meaning of 1.6.
- (b) Candidates generally responded with a reason for an explanation. Most responses related to safety reasons only.
- (c) Candidates generally failed to recognise that the machine needed to be set for length and angle. The majority of candidates were able to identify a suitable machine.
- (d) Too many candidates failed to read this part carefully enough. Many simply listed safety precautions without identifying and justifying a suitable welding process. Candidates also thought that ‘welding process’ meant a description of setting up for welding. Some of these responses would have been suitable for part (e). A wider understanding of safety precautions beyond personal protection equipment was needed.

- (e) Candidates were able to clearly demonstrate knowledge of some of the required stages. This was particularly the case for preparation and finishing. Some candidates were not awarded full marks due to limited description of the welding stage. Candidates need to ensure that answers to these types of questions cover all aspects required by the question.

### **Question 5**

- (a) Candidates demonstrated poor knowledge of the features ‘taper turning’ and ‘knurling’.
- (b) Responses to this part were poor. Many candidates failed to recognise the facing process and that the cutting tool needs to be set on centre for accurate facing. A number of candidates did not understand what was meant by the ‘right hand end’ of the handle.
- (c) Responses to this part were poor and lacking in detail. There were many students who did not attempt this part.
- (d) Candidates demonstrated a sound knowledge of safety checks. However a detailed understanding of the knurling process was lacking. Reference to bringing the back gears into operation or reducing the spindle speed were almost non-existent.
- (e) Candidates must ensure that they read and respond to all aspects of the question. Responses were too general and lacked detail. Both internal and external threading processes needed to be carried out manually, but often candidates described either internal or external threading. Reference needed to be made to M8×1.5.

### **Focus Area – Multimedia Industries**

#### **General Comments**

Most candidates were able to respond to all sections of the questions. However, a number of the candidates demonstrated that they were unfamiliar with the glossary of terms used to develop examination questions.

#### **Specific Comments**

### **Question 4**

- (a) This part was generally well answered.
- (b) The response to ‘examples of manipulation software’ required names/titles of software. However some candidates gave a manipulation process with no mention of software name.
- (c) This part was generally well answered. However, a number of candidates failed to fully explain the responsibilities of an author wishing to use copyright material.
- (d) Many candidates understood jpeg files as well as bmp files but had little or no understanding of tiff files.

- (e) This part was poorly answered. Most candidates identified features but neglected to discuss these. Some candidates concentrated on visual layout only.

### **Question 5**

- (a) Candidates understood ‘bandwidth’ in a very general way relating to speed but responses lacked the essential qualities of bandwidth.
- (b) This part was generally poorly answered. Candidates had little understanding of downloading a multimedia presentation.
- (c) This part was generally poorly answered. While candidates recognised the hardware devices, they failed to outline the factors which affect their performance.
- (d) This part was clearly understood and well answered.
- (e) This part was poorly answered. Candidates generally did not have an understanding of the term ‘analyse’.

### **Focus Area – Plastics Industries**

#### **General Comments**

The majority of candidates appeared to have only an understanding of fibreglass surfboard construction. Responses indicated a poor knowledge of any other polymers and construction methods.

#### **Specific Comments**

#### **Question 4**

- (a) (i) Most candidates were able to name a suitable polymer for the cover.  
  
(ii) There were a variety of responses to this part; however most candidates were able to identify the correct method of moulding.
- (b) (i) Candidates either gave a correct answer and justified their choice well, or could not name a suitable resin.  
  
(ii) Responses indicated that candidates did not understand ‘foam sandwich construction’, by just relating their answers to surfboard manufacture. Some candidates had difficulty in naming more than one core material.  
  
(iii) Responses were limited to the different types of glass fibre mats available and gave general answers relating to the strength and finish achieved. Reference was often not made to the performance of these materials in the skiff.  
  
(iv) Candidates did not understand ‘foam sandwich construction’ and hence could not describe the manufacture of the hull. Answers were limited to surfboard style construction and general safety when working with plastics.

### Question 5

- (a) (i) Most candidates were unable to name a thermoplastic suitable for the outside layer of the sailboard. Their answers related mainly to fibreglass construction.  
  
(ii) Responses were often limited to ‘foam’ with no or limited attempt to name a suitable polymer.
- (b) Many candidates failed to answer (a)(ii) and therefore it was difficult for them to compare the properties. Many responses were limited to weight and strength.
- (c) Knowledge of moulding techniques appeared limited and responses such as ‘smooth finish’ and ‘need to be exact shape of board’ were common.
- (d) Responses for this part varied from injection moulding, resin castings, and building fibreglass moulds. Most candidates knew what to do but their responses lacked detail.
- (e) Most candidates did not realise that the question still related to a sailboard made from thermoplastic with a lightweight core. Many candidates described a process closely related to the construction of a surfboard. It was obvious that the majority of candidates only had an understanding of surfboard construction.

### Focus Area – Timber Products and Furniture Industries

#### General Comments

Question 4 was generally poorly answered. The responses indicated that candidates have limited understanding of uses, impact on society and the environment, and the production methods related to MDF. Candidates also demonstrated a lack of knowledge regarding modern cabinet hardware and CNC machinery.

Candidates performed well in parts of Question 5 but did not recognise the need or the purpose of the clearance hole in part (c). In part (e) candidates had difficulty in identifying and explaining a range of factors for each of the intended areas.

#### Specific Comments

#### Question 4

- (a) This part was poorly answered. Candidates had a poor understanding of the abbreviation MDF.
- (b) This part led to numerous descriptions of traditional joints, with most candidates not fully understanding the concept of assembly by the consumer and the fact that knockdown fittings may be the best solution.
- (c) Most candidates described methods used in the school environment rather than an industry mass production setting. Few candidates had depth of knowledge of industrial machinery.

- (d) Most candidates made a reasonable attempt at the cutting list table. Errors occurred in the thickness of the sides not being removed in the calculations. On the grid drawing, many candidates did not consider the grain direction.
- (e) Many candidates made the error of describing the manufacture of MDF and its properties rather than addressing the impact of its production and use on society and the environment. Many candidates did not have an understanding of the term ‘discuss’.

### **Question 5**

- (a) The majority of candidates were able to name a suitable timber from which to manufacture the letterbox.
- (b) The poor sketching ability of some candidates was evident in this part. A number of candidates simply labelled the sketches rather than detailing an explanation.
- (c) The majority of candidates failed to account for the clearance hole in their explanation of how the timber is prepared for drilling. The countersinking of screws was well understood and explained; however some confusion existed as to the purpose of the pilot hole.
- (d) The majority of candidates could picture an appropriate saw to cut timber squarely. Unfortunately, however, some candidates could not correctly name these tools. The use of PPE appears to be well understood, while identifying machine safety and maintenance checks proved to be more of a challenge to some candidates. The concept ‘prior to its use’ was overlooked by some candidates and safety issues pertaining to operating the tool were highlighted.
- (e) Many candidates had difficulty organising their responses for this part and as a result some responses were repetitive. A significant number of candidates had difficulty in recognising the factors relating to each of the areas, and simply named a material, component or process. As a result, complete areas were missed in some responses.

### **Major Project**

There was a general improvement in the overall standard of projects presented by candidates with a wide variety of projects presented. For the first time since the introduction of the new syllabus candidates attempted the Plastics Industries Focus Area.

### **Design and Management**

The standard of the Design, Management and Communication folio (DMC) has shown marked improvement, giving an indication that many schools were using the standards packages from 2001 and 2002. It was interesting to note that candidates followed the layout of the DMCs provided in the 2001 package and were able to use the internal breakdown of the examination criteria in the 2002 package.

The Statement of Intent was poorly attempted by most candidates. The statement should reflect sound reason for the development of the major work. Candidates should state what they are trying to achieve and not just reiterate what they are going to make.

As in previous years, the research that candidates undertook was difficult to relate to the project being undertaken. The relevance of the research was not necessarily clearly stated and justified. There was a general lack of understanding of appropriate research and what the candidates had gained or how they were able to use this information. A collection of pamphlets and other unexplained research is still prevalent.

Candidates demonstrated a greater understanding of the development of ideas criterion. Candidates continue to show a lack of understanding of the process of design development. They should demonstrate a process that incorporates a progression from their initial ideas through research, critical analysis, modification and evaluation, leading to the development of the practical project. They need to make a greater use of notes to explain sketches and photographs.

The selection and the justification of components, processes and other resources must be related to the project. The most popular methods used to demonstrate a knowledge and understanding of this criterion was to present a table with choice justification headings, while others were able to diffuse the process throughout the folio document. The use of a table is limiting and most of the candidates who used this method presented a simplification of what is required.

The Timeline and the Finance Plan were generally well done with many candidates showing a sound knowledge of task-specific software. Most candidates related the research component of the folio to the development of the proposed Timeline and Finance Plan although many of these lacked sufficient detail to assist with the project construction. Many candidates had difficulty in applying time management skills. It was also evident from the language used that many candidates attempted the timeline plan post-production. Some candidates found planning challenging, even in broad terms.

In general, Occupational Health and Safety (OHS) was well covered with a growing knowledge of issues related to OHS. Candidates were able to deal with issues beyond Personal Protective Equipment (PPE) and machine safety but there was a lack of understanding of the processes involved in Risk Management. Candidates provided evidence of OHS by presenting a table with a list of machine tools and their specific safety requirements, while others presented photographic evidence throughout their folio.

### **Communication**

In general there was an improvement in the range and quality of communication skills presented by candidates although there were still some DMC folios that were completely handwritten.

In many cases appropriate design modifications were integrated with evaluative processes throughout the DMC folio. Candidates demonstrated changes in design, construction methodology or problem-solving methods as evidence of ongoing evaluation.

Evaluation of the major project was generally well done with many candidates using evaluation strategies throughout their DMC folio. Some candidates did not address this component at all. Most candidates attempted an evaluation of the major project at the end of the DMC folio; however in the better DMC folios there was also evidence of ongoing evaluation as defined by the statement of intent.

Candidates used a variety of communication techniques. In general the better candidates were able to present a variety of methods that were found in various parts of the folio and ranged from



written evidence and sketches through to more formal techniques including technical drawings and CAD. There was an increased use of videos and powerpoint presentations.

Computer application was generally well addressed with most candidates using a range of software that included word processing, spreadsheets and CAD software. There were many more candidates demonstrating proficiency in the use of digital equipment while most were able to import files from a variety of applications.

## **Production**

Production was generally of a better standard than in previous years. There were fewer low quality projects. Candidates should design and present projects which challenge their abilities and give opportunities to demonstrate the range of skills required to successfully complete the course. There were still a significant number of candidates whose projects were too 'basic' and who therefore limited themselves in the marks they could obtain. There was strong evidence that the number and range of machine tools used by candidates had affected the overall quality of the projects.

Those candidates who provided jigs, models, prototypes, preliminary sketches, working rods and all other material that was used during construction demonstrated a broader range of skills and techniques that otherwise may not have been evident. It is imperative that all the work required to make the project needs to be displayed at the time of marking.

It was also evident that many candidates did not, or were unable to, acknowledge outside assistance in the design, construction or finishing of their project. This information is usually evident in the photographic record of the construction processes. The syllabus outcomes indicate that this is a legitimate process, although candidates are required to complete the major part of the project themselves.

As in previous years, the better candidates demonstrated a broad range of skills, from traditional hand skills to an increasing use of machine skills or computer-related technology. Many candidates demonstrated sound knowledge of a range of materials and were able to apply this knowledge to appropriate construction processes. Poorer candidates were unable to delineate the range of skills required in the syllabus and presented repetitive manufacturing processes. It needs to be noted that the presentation of repetitive skills is a limiting factor in the marks of many candidates.

In the main, Multimedia Focus Area candidates were reticent in their evidence of design development. It is essential that each candidate show that their project was developed through a process of ideas sketches, even storyboarding, through to a completed project. The better candidates used a range of processes that included video, digital imaging, web design and development, applications of Flash and other Macromedia products and real-time video. The poorer candidates used simple hyper-linking techniques to relate imported objects.

Many Multimedia Focus Area candidates had difficulty in delineating the DMC from their project. Candidates need to show a related DMC that provides the markers with the information needed to assess their project.

The presentation of Multimedia Focus Area projects is still causing concern. Schools need to provide the facilities that are required to allow for an efficient marking process. It is important that at least two, if not more, computers are made available to allow markers to mark each project independently. The computers provided must have the capabilities to run, in some cases, complex

and memory-consuming software. It also needs to be noted that candidates must provide a hard copy of their project. Technology failure does not represent a misadventure, and for candidates to eliminate problems with computer technology a hard copy is required.

# 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
<b>Automotive</b>			
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
<b>Timber products and furniture</b>			
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
<b>Multimedia</b>			
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
<b>Electronics</b>			
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
<b>Metals and Engineering</b>			
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
<b>Graphics</b>			
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
<b>Plastics</b>			
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**

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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**

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

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

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

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

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• Names a suitable software application	1

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

<b>Criteria</b>	<b>Marks</b>
• Names FOUR formatting features	2
• Names TWO or THREE formatting features presentation	1

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

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

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

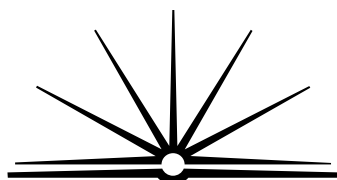
<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>• Indicates the production rate for September on the graph</li></ul>	2
<ul style="list-style-type: none"><li>• Indicates an upward production trend on the graph</li></ul>	1

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

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

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

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



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## **2003 HSC Industrial Technology (Automotive Industries) Marking Guidelines**

### **Section II**

#### **Question 4 (a)**

*Outcomes assessed: H6.1*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• Identifies an advantage that a rotary engine has over reciprocating engine	1

#### **Question 4 (b)**

*Outcomes assessed: H4.3, H6.1*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• 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**

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

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

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

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

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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**

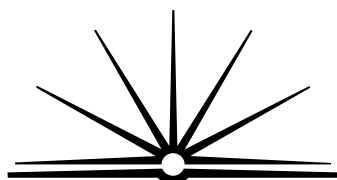
<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>• Correctly identifies two advantages together with a well structured and detailed explanation as to how they have improved efficiency</li></ul>	4
<ul style="list-style-type: none"><li>• Correctly identifies two advances with a brief explanation</li></ul>	2–3
<ul style="list-style-type: none"><li>• A list of some advances</li></ul> OR	1
<ul style="list-style-type: none"><li>• One explanation</li></ul>	

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

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>• A logically presented answer indicating the main features of at least two important safety considerations</li></ul>	4
<ul style="list-style-type: none"><li>• A list of more than one safety consideration, indicating the features of one of these</li></ul>	2–3
<ul style="list-style-type: none"><li>• A list of more than one safety consideration</li></ul>	1

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

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>• A logically sequenced answer indicating the main features of the processes of repairing and refinishing the damaged panel</li></ul>	8
<ul style="list-style-type: none"><li>• A logically sequenced answer indicating the main features of most of the processes of repairing and refinishing the panel</li></ul>	6–7
<ul style="list-style-type: none"><li>• A logically sequenced answer indicating the main features of the repair or refinishing of the panel</li></ul>	4–5
<ul style="list-style-type: none"><li>• An answer indicating the main features of most of the process of the repair or refinishing of the panel</li></ul>	2–3
<ul style="list-style-type: none"><li>• A brief list of some steps that are involved in the repair or refinishing process</li></ul>	1



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## 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**

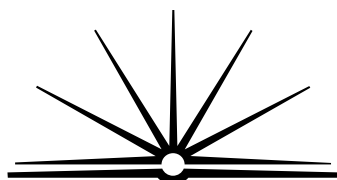
Criteria	Marks
• Provides characteristics and features of an IC, and indicates at least two correct advantages of an IC, giving reasons	4
• Provides characteristics and features of an IC, and indicates a correct advantage of an IC, giving reasons	3
• Provides some characteristics and features of an IC 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"> <li>– Correct setting up of the oscilloscope</li> <li>– Correct process of measuring voltage across the electronic component</li> </ul>	4
• Provides characteristics and features of: <ul style="list-style-type: none"> <li>– Correct setting up of the oscilloscope</li> <li>– Incorrect process of measuring voltage across the electronic component</li> </ul> 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**

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



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

### Question 4 (b)

*Outcomes assessed: H1.2*

#### MARKING GUIDELINES

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

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

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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	2
• Provides reasons why particular types of drawings would be suitable for presentation to the client	
• Name one type of suitable drawing only	1

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

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

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

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

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

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



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

<b>Criteria</b>	<b>Marks</b>
• 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**

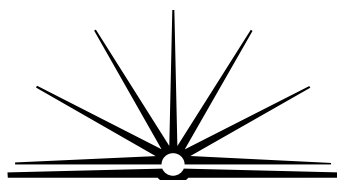
<b>Criteria</b>	<b>Marks</b>
• Provides at least two characteristics/features for each type of drawing	4
• Provides a characteristic/feature for each type of drawing	3
• Names both types of architectural drawing correctly	2
OR	
• Provides characteristics/features (at least two) for ONE type of drawing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

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

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

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

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



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## **2003 HSC Industrial Technology (Metals and Engineering Industries)**

### **Marking Guidelines**

#### **Question 4 (a) (i)**

*Outcomes assessed: H4.3*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• Correct identification of RHS	1

#### **Question 4 (a) (ii)**

*Outcomes assessed: H4.3*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• Correct identification of feature of 1.6	1

#### **Question 4 (b)**

*Outcomes assessed: H1.2, H4.3*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• 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**

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

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

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

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

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

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

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

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

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

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

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

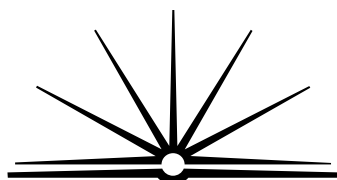
**Question 5 (d)***Outcomes assessed: H1.2, H2.1, H4.3***MARKING GUIDELINES**

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

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

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





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## 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**

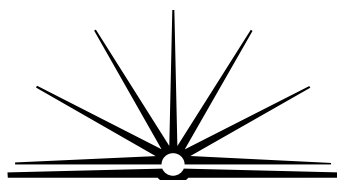
Criteria	Marks
• Indicate the features of at least two different factors that affect the performance of the three hardware devices	3
• Indicate the features of two different factors that affect the performance of two hardware devices listed	2
• Indicate two factors that affect the performance of one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



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## 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**

<b>Criteria</b>	<b>Marks</b>
• Names a suitable polymer for outer layer	1

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

<b>Criteria</b>	<b>Marks</b>
• Names a suitable polymer for core	1

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

<b>Criteria</b>	<b>Marks</b>
• 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**

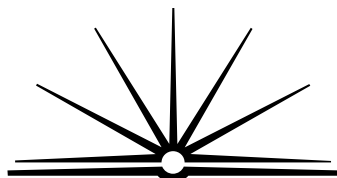
<b>Criteria</b>	<b>Marks</b>
• Identifies the main features that need to be considered when designing the mould	3
• Indicates some features that need to be considered when designing the mould	2
• Indicates a feature of the mould design	1

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

<b>Criteria</b>	<b>Marks</b>
• 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**

<b>Criteria</b>	<b>Marks</b>
• 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



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## **2003 HSC Industrial Technology (Timber and Furniture) Marking Guidelines**

### **Question 4 (a)**

*Outcomes assessed: HI.2*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• Correct answer	1

### **Question 4 (b)**

*Outcomes assessed: HI.2*

#### **MARKING GUIDELINES**

<b>Criteria</b>	<b>Marks</b>
• Suitable method – named, sketched. All correct	2
• Suitable method – named or sketched	1



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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