2007 HSC Notes from the Marking Centre Industrial Technology

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2007 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 contains comments on candidate responses to the 2007 Higher School Certificate examination, indicating the quality of the responses and highlighting their relative strengths and weaknesses.

This document should be read along with the relevant syllabuses, the 2007 Higher School Certificate examinations, 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

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 the knowledge, understanding and skills developed through studying all aspects of 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.

Major Project

The major projects presented in most focus areas showed an increase in both quality and design. Folios have steadily increased in both the level of presentation and the amount of research and planning undertaken by candidates. Better folios were presented in a logical and carefully laid out manner, where the content was easily identifiable. A broader range of information and communication technology (ICT) skills were apparent in their preparation.

Design and Management

Many candidates seemed very capable of producing a quality product, but devoted a disproportionate amount of time and effort to the accompanying folio. Teachers need to highlight the importance of this folio in the marking of the project and its role in the marking process. The major projects, particularly in Multimedia Industries, are shown in their completed form. Much time and effort, as well as a substantial amount of skill, has been utilised in applying the many different processes involved in the development of these projects. From outside appearances much of this is not apparent in the project itself and it is only through the folio that the examiners are able to understand the full input of the candidate.

Candidates should be aware of the marking criteria, available from the Board's website, and be familiar with these criteria and be able to apply them to their projects. Teachers should also make sure candidates understand the relevant standards associated with these criteria.

The **statement of intent** needs to be written as a clear statement of how the student will approach their major project. Candidates are reminded that this statement gives the foundation for their research and planning and should give details of where they are heading with the project. Candidates also need to realise that the project presented is marked in relation to their statement of intent. What the examiner sees should be the same as, or at least similar to, what was intended. Better responses presented the examiners with an answer that related more fully to the major project and what to look for in the folio. Weaker responses need to be more specific and detailed. Simple statements of what they want, intend, or need to make are not sufficient. Candidates need to relate the 'what' to 'why' and 'how' and also give details of 'where'.

Research and information gathering should be relevant to the project as detailed in the statement of intent. Brochures, catalogues, company information and downloads from web pages must relate to the project being constructed, and the candidate must interact with the information in some way. This should be clearly evident. Some candidates, particularly in Graphics Industries, collect great quantities of brochures, especially from project home companies. These are often included as research, but many show little evidence of being used as a basis for the project, being just lumped together in a folio with little, if any, annotations. Better responses showed clearly what information had been gained and how it would be used with the project. They also included a brief, to the point evaluation of the research for each item, process or material, as part of on-going evaluation. This can be presented in a number of ways, eg a PMI analysis.

Timelines and finance plans were usually well presented and in an increasing variety of ways. Most candidates were able to divide their time and allocate processes to it. Candidates need to be sure to add detail in these plans and not restrict them to a few general headings. Research, for example, needs to include details of type, how and/or where. It is also important to note that these time and finance plans must include both a proposed plan and an actual plan and not be written after the event.

Most candidates were able to comment in some detail regarding the personal protective equipment (PPE) aspects of OHS, especially when using machinery in the workshop. Few candidates outlined the OHS concerns associated with the safe handling of materials, both the physical handling and the chemical/dust concerns, not just PPE for machine use and the safe handling of tools, etc.

Communication

In most instances, candidates successfully used a variety of communication techniques to complete the Design, Management and Communication (DMC) folio. Better folios used sophisticated CAD drawings, digital images and a variety of output devices to produce a quality of folio approaching professional desktop publishing. Very few candidates completed the folio with no ICT skills being apparent, even the weakest folios contained evidence of word-processing and spreadsheets.

Sketching of ideas and their development was not particularly strong, with some exceptions. Most candidates included some rough, and in some cases, almost unidentifiable sketches without any annotation. Candidates must remember that this section of the folio communicates to the examiner how they arrived at their final design, or how an original design was modified. All of their sketches should be included and they must be clearly annotated.

Production

Most candidates were able to satisfactorily manage their time and resources to produce a finished project, albeit of varying quality. The quality of the major projects continues to improve, with far fewer candidates either not attempting the major project or presenting incomplete projects.

Projects should also be of sufficient rigour to allow the candidate to fully satisfy the marking criteria for the major project.

Weaker Multimedia Industries responses contained downloaded material from sources found on the internet. This is not a recommended practice and should be discouraged. As is the case with all focus areas, any work that is not the work of the candidate should be acknowledged as such. Markers recognise the different standard of the downloaded material compared to a candidate's own work.

Candidates should present as much supporting material as possible with their projects. Jigs, models, prototypes, preliminary sketches, working rods and all other material used during construction identifies a broader range of skills and techniques that may have otherwise been overlooked.

Multimedia Industries candidates and Electronics Industries candidates must be aware that it is their own responsibility to ensure that their project is fully operational at the time of marking.

Many candidates used some degree of outside help and/or resources. Care must be taken to fully document these outside resources in the folio. Candidates will not be given credit for work done by others. (See the *Industrial Technology Stage 6 Syllabus* p 46 and the *Assessment Certification and Examination Manual* p 151.)

Often, Multimedia Industries responses did not fully show how their projects evolved. They need to present the development of the project and not just the final product. In most cases, responses showed little evidence of storyboarding, sketching or planning. Better responses used screen dumps, dated and initialled by their teachers at regular intervals to give a clear indication of project development. These better responses also used a range of processes that included video, digital imaging and web design.

Written Examination

Section I

General Comments

Better responses demonstrated an understanding of the differing methods of communicating information in their chosen industry. In these responses, candidates gave well-structured answers, supported by appropriate details.

Question 1

(a) Typically, candidates were able to name a method of maintaining quality control. Better responses provided the main features to fully answer the question.

(b) Better responses clearly identified at least two strategies, clearly describing how information could be collected by each method. Weaker responses provided only one strategy.

(c) (i) Better responses identified that automation involved no human intervention. Weaker responses confused mechanisation with automation.

(ii) Typical responses identified one or more effects of automation, and indicated that automation improved efficiency through quicker and more accurate production. Better responses provided clearer, more detailed features of automation and its effect on production.

(d) Better responses discussed two impacts and generally related these to organisation and management. Weaker responses did not fully answer this question, lacking the detail to fully explain the impact.

(e) Typical responses gave two advantages and two disadvantages of involving another organisation in the production process. Weaker responses tended to list factors rather than discuss advantages and disadvantages. Better responses focused on the impacts of providing an outsourced component in the production line, giving appropriate detail.

Question 2

(a) Typical responses identified recycling/reusing as a general means of minimising waste. Better responses identified a different strategy that minimised waste from a specific increase in production perspective.

(b) While typical responses showed some understanding of features of workplace culture, better responses showed an in-depth understanding of the term. Some weaker responses confused ethnic culture with workplace culture and outlined strategies to improve racial harmony in the workplace.

(c) Better responses demonstrated how issues relating to federal, state and/or local government legislation could impact on employees in the workplace and used more than one point to support their discussion. Mid-range responses identified only one relevant piece of legislation, often not giving more than one point for and/or against its impact. Weaker responses only identified an impact and gave no discussion or examples of the effect on employees.

(d) Better responses made a detailed value judgement on using computers in training employees. Often, however, responses did not make a judgement on the role that computer technology plays in training employees. Instead, they wrote about computers in the workplace and how important it was to be trained in their use. Weaker responses only showed a limited understanding of computer technology in the workplace.

(e) Better responses gave meaningful discussion about several personnel-related issues and used more than one point in support of their answer. Weaker responses only identified issues or gave very limited discussion. This part needed to be answered in terms of personnel issues rather than OHS rules and regulations. Some responses confused personal issues with personnel issues.

Question 3

(a) Typical responses gave a reason for producing production targets. Better responses gave more than one reason for producing production targets.

(b) Better responses drew either a correctly labelled line or bar graph that accurately showed the production targets for the six-month period indicated.

(c) In mid-range responses, candidates related the symbols shown to handling practices. The better responses identified and supported issues relating to the purpose of placing graphical images on packaging.

(d) Typically, candidates were able to calculate the costing for each component of the product packaging. The better responses completed the calculations and calculated the unit price.

(e) Typical responses identified a feature of computer-developed and hand-drawn techniques in the development of graphics for packaging materials. The better responses gave a detailed judgement regarding the use of both methods.

Section II

Focus Area – Automotive Industries

Question 4

(a) Typical responses gave two reasons why a motor vehicle overheats, with the general assumption being that hot air caused overheating.

(b) Mid-range responses displayed a good understanding of brake-cooling principles. Better responses displayed knowledge of state of the art improvements.

(c) Better responses identified liquid and air-cooling systems but weaker responses were limited to listing rather than describing.

(d) Better responses recognised preventative measures that are used today to minimise rust in motor vehicle design.

(e) Weaker responses listed, instead of discussing, the improvements to the interior of the modern motor vehicle. A good awareness of safety was demonstrated by better responses.

Question 5

(a) Better responses provided a comprehensive answer to this part, with engine efficiency, air/fuel mixture and ignition timing being well understood when relating to engine management systems.

(b) Weaker responses tended to list the advantages of a front wheel drive motor vehicle but not compare them to a rear wheel drive motor vehicle.

(c) Typical responses demonstrated accurate knowledge of tyre wear on a motor vehicle.

(d) Mid-range responses listed the obvious advantages of an automatic gearbox but better responses recognised the huge advances in automatic gearboxes which have provided drivers with the ability to select gears manually without the use of a clutch.

(e) Weaker responses simply identified more than one body material but limited their response. Plastics and fibreglass were commonly identified, with the better responses discussing aluminium, carbon fibre and composite materials.

Focus Area – Building and Construction

Question 4

(a) Typical responses demonstrated an understanding of the features related to positioning a house on a site.

(b) Better responses identified the purpose of contour plans. Weaker responses were unable to explain the difficulties of building on a contoured site.

(c) Better responses were familiar with the concept of a site plan and identified some of the features. Weaker responses, however, had difficulty explaining the significance of the features.

(d) Better responses were aware of the appropriate procedures a builder would use to lay out a site before starting to build.

(e) Better responses demonstrated an awareness of environmental regulations that need to be complied with when building a residential home.

Question 5

(a) Typical responses sketched reasons to use licensed tradespeople in general terms.

(b) Mid-range responses identified at least one reason, but better responses identified more than one reason for the importance of standards in the building industry.

(c) Better responses identified and indicated the features of protective measures that can be taken to protect a house from termites.

(d) Weaker responses did not demonstrate an understanding of the concept of rising damp.

(e) Better responses appreciated the need for builders to complete the building process in a correctly sequenced manner.

Focus Area – Electronics Industries

Question 4

(a) Better responses demonstrated an understanding of the manner in which resistance is indicated on a resistor.

(b) Better responses indicated a sound understanding of the importance of using a truth table in the design of a logic circuit.

(c) Better responses provided correct calculations in both parts of the response. They demonstrated a sound understanding of total resistance in series and Ohm's law to determine circuit current

and voltage. Weaker responses did not apply relevant electronic concepts and experienced difficulties in expressing determined values in appropriate units.

(d) Better responses clearly described the difference between AC and DC both in a graphical and written format. Their sketches clearly indicated the correct wave form of both AC and DC.

(e) Better responses provided an accurate description of how a relay operates. Mid-range responses, however, experienced difficulties providing sufficient detail of the relationship between the relay, the light dependent resistor and the bell. Weaker responses did not adequately explain the difference in the function of the two circuits.

Question 5

(a) Better responses gave relevant examples for the use of UHF transmitters/receivers.

(b) Better responses clearly described how a movement switch operated. Weaker responses, however, did not indicate a suitable application for its use.

(c) Better responses adequately described how a variable resistor operates and provided relevant applications of its use.

(d) Weaker responses did not clearly describe the piezoelectric effect within a piezo device. They simply identified a piezo device.

(e) Although typical responses indicated a basic understanding of how an oscilloscope works, better responses adequately provided an in-depth explanation of the workings. The best responses evaluated the use of an oscilloscope in comparison with other electrical equipment.

Focus Area – Graphics Industries

Question 4

(a) Typical responses identified one reason for the use of scale and were often not clearly expressed.

(b) While many responses gave one or two similarities or differences between orthogonal and pictorial drawings, weaker responses confused orthogonal and pictorial drawings with other concepts. Most responses indicated that pictorial drawings were used for presentation and orthogonal drawings were used for plans.

(c) Typical responses demonstrated the layout for third angle projection but the individual views often had detail missing, eg centre lines, hidden detail and holes. Some responses had difficulty transferring the three-dimensional drawing into two-dimensional views.

(d) Typical responses gave one reason for using perspective drawing but had difficulty relating it to architectural design. Better responses discussed perspective drawings, giving architectural design examples.

(e) Typical responses identified the types of drawings suitable for an architectural presentation. Weaker responses lacked depth of explanation when linking to the needs of the council and client.

Question 5

(a) Better responses completed a sketch of the block in isometric projection.

(b) Typical responses differentiated between isometric and oblique projections, but weaker responses only provided basic features of each and not the main differences.

(c)(i) Typical responses sketched the symbol indicating third angle projection.

(ii) Typical responses indicated the primary importance of using drawing symbols. The better responses discussed the wider implications of using symbols beyond the example given in part (i).

(d) Typical responses partially completed the sectional view showing one or more of the required components. Better responses correctly completed the drawing to show all details.

(e) The weaker responses listed the advantages of computer software graphics rather than explain the advances in computer software graphics. The best responses used numerous examples to link the advances in computer software packages to design, development and final presentation.

Focus Area – Metals and Engineering Industries

Question 4

(a) Better responses outlined two reasons for the selection of an aluminium alloy in preference to mild steel for the stated application.

(b) Typical responses named a suitable piece of equipment to bend aluminium tubing. Better responses provided a quality description of this piece of equipment.

(c) Typical responses identified an acceptable industrial process for joining the aluminium tubing. Better responses also provided adequate justification for the use of the identified process.

(d) Weaker responses did not fully name the socket head cap screw. Typical responses provided a reason why such a fastener was appropriate for securing the rack to the bicycle frame.

(e) Typical responses identified a range of appropriate industrial processes that could be used to apply a coloured finish to the rack. The best responses included a detailed description of the application of one process. Weaker responses did not provide the necessary detail in relation to the application of a finish.

Question 5

(a) Better responses demonstrated a sound understanding of metric thread terminology. Weaker responses did not identify the abbreviation for the countersunk head.

(b) Typical responses described some part of the process of producing an internal thread. Most responses, however, did not include a description of the entire process of thread production.

(c) Better responses correctly named and described a suitable process for producing a non-slip surface on the handle.

(d) Typical responses identified a suitable process for forming the square section on the wrench head. Better responses described the process.

(e) Typical responses identified one of the ferrous metals used in the construction of the wrench and provided some justification for its selection. Only the best responses supported an argument and conclusion for the use of a number of steel types used in the various components.

Focus Area – Multimedia Industries

General Comments

Candidates are advised to attempt all parts of each question.

Question 4

(a) Typical responses identified two or more suitable graphic file formats.

(b) Typical responses demonstrated knowledge of hypertext, as used in a multimedia presentation. Better responses included more than one advantage.

(c) Weaker responses did not appreciate the unique requirements for publishing to the internet, and many related to generic publishing issues.

(d) Better responses referred to more than one conversion technique to be considered when converting an existing text document to electronic format that can be edited. Weaker responses did not appreciate that the question was asking for a conversion from a text document (non-electronic – hard copy) into an electronic document.

(e) Weaker responses answered this question poorly as they had difficulty interpreting information technologies. Many listed aspects of computer hardware instead of discussing technologies that have enabled the increase of multimedia on the World Wide Web.

Question 5

(a) Weaker responses indicated little knowledge of multimedia authoring systems.

(b) Better responses identified and described one technique for compressing graphics.

(c) Typical responses recognised animation methods. Weaker responses only gave a limited description.

(d) Typical responses indicated some understanding of methods of reducing file size but weaker responses were unable to provide a suitable description of these methods.

(e) Typical responses identified issues related to the development of a website. Better responses related issues and made judgements between web and print media.

Focus Area – Timber Products and Furniture Industries

Question 4

(a) Better responses correctly named a suitable glue and gave a reason for its suitability. Weaker responses provided trade names rather than a glue type.

(b) Typical responses named a suitable support and machining process. Better responses named a machine, the support method and described the machining process.

(c) Typical responses named two suitable joints. The quality of sketches varied greatly. Some responses did not match the joint name with the joint sketch.

(d) Better responses covered the need to mark out, align and clamp, and countersink before driving the screws home.

(e) Better responses clearly identified the process of preparing a timber surface and masking for a non-water-based finish, and outlined the spraying process that included appropriate spray areas and personal protective equipment. Weaker responses found difficulty in linking preparation with spray technique and overall quality of finish.

Question 5

(a) Better responses named and described an industrial tool that would produce a flat tabletop. Weaker responses described an assembly procedure, ie the sequence of steps that could be used to manufacture the tabletop in a school workshop.

(b) Better responses identified the need to allow for movement in the solid timber top and supplied a suitable method of attaching the top, ie button or table clip, and generally provided high quality descriptions and sketches. Weaker responses simply listed woodworking joints or joining methods, eg dowel, biscuit and screw.

(c) Typical responses listed a significant number of considerations in selecting boards for the tabletop.

(d) Better responses described a suitable method of cramping a widening joint. Weaker responses had difficulty completing 3D, or even 2D sketches to adequately illustrate their description. Weaker responses also could not name a sash cramp, and listed a minimal number of steps involved in the cramping method but did not adequately describe the complete process.

(e) Better responses identified the advantages and disadvantages of using manufactured boards in place of the solid timber top. Weaker responses simply listed issues for and against and were unable to discuss the concepts. Some responses concentrated on the advantages and disadvantages of solid boards. A significant number of responses also associated the manufacture of particleboard and MDF with recycling.

Industrial Technology

2007 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
Section I			
1 (a)	2	Technical factors	H1.1, H1.2, H6.1
1 (b)	3	Structural factors	H1.1, H3.2
1 (c) (i)	1	Technical factors	H1.1, H1.2
1 (c) (ii)	3	Technical factors	H1.1, H1.2
1 (d)	4	Structural factors	H1.1, H1.2
1 (e)	7	Technical factors	H1.1, H4.2, H6.1
2 (a)	2	Environmental and sociological factors	H1.1, H7.1
2 (b)	3	Occupational health and safety	H1.1, H7.1
2 (c)	4	Occupational health and safety	H1.1, H7.1
2 (d)	4	Computer applications	H1.1, H1.2
2 (e)	7	Personnel issues	H1.1, H7.1
3 (a)	2	Calculations	H1.1, H5.1
3 (b)	3	Graphics	H3.1, H5.1
3 (c)	4	Graphics	H1.1, H5.1
3 (d)	4	Calculations	H1.1, H5.1
3 (e)	7	Graphics	H1.1, H1.2, H3.3, H5.1

Automotive Industries **Section II**			
4 (a)	2	Engine and related systems	H1.2, H2.1, H4.3
4 (b)	3	Chassis and related components	H1.2, H2.1, H4.3
4 (c)	4	Engine and related systems	H1.2, H2.1, H4.3
4 (d)	4	Body	H1.2, H2.1, H3.2, H4.3
4 (e)	7	Automotive design	H1.2, H2.1, H3.2, H4.3, H7.1
5 (a)	2	Electrical	H1.2, H2.1, H4.3
5 (b)	3	Chassis and related components	H1.2, H2.1, H4.3
5 (c)	4	Chassis and related components	H1.2, H2.1, H3.2, H4.3
5 (d)	4	Chassis and related components	H1.2, H2.1, H4.3
5 (e)	7	Body and Automotive design	H1.2, H2.1, H4.3, H7.1
Building and Construction Industries **Section II**			
4 (a)	2	Building principles/materials	H1.2, H2.1
4 (b)	3	Building principles/materials	H1.2, H2.1, H3.1
4 (c)	4	Building principles/materials	H1.2, H2.1, H4.3
4 (d)	4	Building principles/materials	H1.2, H4.3, H6.1
4 (e)	7	Building principles/materials	H1.2, H4.3, H6.1
5 (a)	2	Building principles/materials	H1.2, H2.1
5 (b)	3	Building principles/materials	H1.2, H2.1, H4.3
5 (c)	4	Processes, tools, machinery and equipment	H1.2, H2.1, H4.3
5 (d)	4	Processes, tools, machinery and equipment	H1.2, H2.1, H4.3
5 (e)	7	Building principles/materials	H1.2, H2.1, H4.3, H6.1

Electronics Industries Section II			
4 (a)	2	Electrical principles	H1.2, H4.3
4 (b)	3	Electrical principles	H4.3
4 (c) (i)	2	Electrical principles	H3.1, H4.3
4 (c) (ii)	2	Electrical Principles	H3.1, H4.3
4 (d)	4	Electrical principles	H3.1, H4.3
4 (e)	7	Electrical principles, processes and graphics	H1.2, H3.1, H4.3
5 (a)	2	Electrical principles	H1.2
5 (b)	3	Electrical principles	H1.2, H4.3
5 (c)	4	Electrical principles	H1.2, H4.3
5 (d)	4	Electrical principles	H1.2, H4.3
5 (e)	7	Instruments and test equipment	H1.2, H2.1, H4.3, H6.1
Graphics Industries Section II			
4 (a)	2	Processes	H3.1, H4.3, H6.1
4 (b)	3	Processes, principles/standards	H3.1, H4.3, H6.1
4 (c)	4	Processes	H2.1, H3.1, H4.3, H6.1
4 (d)	4	Processes, principles/standards	H3.1, H4.3, H6.1
4 (e)	7	Processes, principles/standards	H1.2, H6.1
5 (a)	2	Processes	H3.1, H4.3, H6.1
5 (b)	3	Processes	H3.1, H4.3, H6.1
5 (c)(i)	1	Principles/standards	H3.1, H4.3, H6.1
5 (c)(ii)	3	Principles/standards	H3.1, H4.3, H6.1
5 (d)	4	Processes, principles/standards	H2.1, H3.1, H4.3
5 (e)	7	Equipment	H1.2, H6.1

Metals and Engineering Industries **Section II**			
4 (a)	2	Materials	H1.2, H4.3
4 (b)	3	Processes, tools and machinery	H1.2, H4.3
4 (c)	4	Processes, tools and machinery	H1.2, H4.3
4 (d)	4	Materials	H1.2, H3.2, H4.3
4 (e)	7	Processes, tools and machinery	H1.2, H3.2, H4.3, H6.1
5 (a)	2	Materials	H1.2, H3.1
5 (b)	3	Processes, tools and machinery	H1.2, H4.3
5 (c)	4	Processes, tools and machinery	H1.2, H3.1, H4.3
5 (d)	4	Processes, tools and machinery	H1.2, H3.1, H4.3
5 (e)	7	Materials	H3.1, H3.2, H3.3, H4.3
Multimedia Industries **Section II**			
4 (a)	2	Processes, tools and machines	H1.2
4 (b)	3	Processes, tools and machines	H1.2, H4.3
4 (c)	4	Processes, tools and machines	H1.2, H4.3
4 (d)	4	Processes, tools and machines	H1.2, H4.3
4 (e)	7	Processes, tools and machines	H1.1, H4.3, H5.1, H6.1, H7.1
5 (a)	2	Materials and resources, Processes, tools and machines	H1.2
5 (b)	3	Materials and resources, Processes, tools and machines	H1.2, H4.3
5 (c)	4	Processes, tools and machines	H1.2, H4.3
5 (d)	4	Processes, tools and machines	H1.2, H4.3
5 (e)	7	Materials and resources, Processes, tools and machines	H1.1, H1.2, H4.3, H5.1, H6.1, H7.1

Timber Products and Furniture Industries **Section II**			
4 (a)	2	Materials	H1.2, H4.3
4 (b)	3	Processes, tools and machinery	H1.2, H2.1, H4.3, H5.1
4 (c)	4	Processes, tools and machinery	H1.2, H3.1, H4.3
4 (d)	4	Processes, tools and machinery	H1.2, H3.2, H4.1, H4.3, H5.1
4 (e)	7	Processes, tools and machinery Materials	H1.2, H2.1, H4.2, H5.1, H6.1, H6.2, H7.1
5 (a)	2	Processes, tools and machinery	H1.2, H4.3
5 (b)	3	Processes, tools and machinery	H1.2, H3.1, H3.2, H4.3
5 (c)	4	Processes, tools and machinery Materials	H1.2, H2.1, H4.3, H5.1, H6.1
5 (d)	4	Processes, tools and machinery	H1.2, H4.1, H4.3, H6.1
5 (e)	7	Materials	H1.2, H4.3, H6.1, H7.1

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Marking Guidelines

Section I

Question 1 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of a method of maintaining quality control during increased production	2
• Names a method of maintaining quality control during increased production	1

Question 1 (b)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO strategies that could be used to obtain information for the review of current facilities and practices	3
• Recognises and names a strategy that could be used to obtain information for the review of current facilities and practices OR • Names TWO strategies that could be used to obtain information for the review of current facilities and practices	2
• Names a strategy that could be used to obtain information for the review of current facilities and practices	1

Question 1 (c) (i)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• States meaning and identifies the essential qualities of automation	1

Question 1 (c) (ii)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of automation in improving production practices	3
• Identifies the effects of automation on production	2
• Identifies an effect of automation on production	1

Question 1 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Identifies TWO or more impacts on the organisation and management of the company resulting from increased production and provides points for and/or against at least TWO impacts	4
• Identifies TWO or more impacts on the organisation and management of the company resulting from increased production but only provides points for and/or against one impact	3
• Identifies TWO or more impacts on the organisation and management of the company resulting from increased production OR • Identifies ONE impact on the organisation and management of the company resulting from increased production and provides points for and/or against this impact	2
• Names ONE impact on the organisation and management of the company resulting from increased production	1

Question 1 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Identifies and provides points for and/or against TWO or more advantages and disadvantages of using other specialist organisations to supply some components for the product whilst linking them to the production process	7
• Identifies and provides points for and/or against TWO advantages or TWO disadvantages of using other specialist organisations and links them to the production processes	5–6
• Identifies an advantage and disadvantage of using other specialist organisations OR • Identifies TWO ore more advantages or disadvantages of using other specialist organisations	3–4
• Names an advantage or disadvantage of using other specialist organisations OR • Names an advantage or disadvantage of production processes	1–2

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO strategies to minimise waste from production	2
• Names a strategy to minimise waste from production	1

Question 2 (b)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of "workplace culture" and sketches in general terms a strategy that could be used to improve a poor workplace culture	3
• Indicates a feature of "workplace culture" and indicates a feature of a strategy that could be used to improve a poor workplace culture OR • Sketches in general terms a strategy that could be used to improve a poor workplace culture OR • Indicates the main features of "workplace culture"	2
• Sketches in general terms "workplace culture" OR • Names a feature of a strategy that could be used to improve a workplace culture	1

Question 2 (c)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Outlines government legislation, identifies issues and provides points for and/or against how they impact on employees	4
• Outlines government legislation, identifies an issue and provides points for and/or against its impact on employees OR • Outlines government legislation, identifies issues and provides a point for and/or against how they impact on employees	3
• Outlines government legislation, identifies an issue and provides a point for and/or against its impact on employees OR • Outlines government legislation, identifies issues with no discussion OR • Identifies issues and gives points for and/or against how government legislation impacts on employees without reference to specific legislation	2
• Identifies government legislation that impacts on employees OR • Identifies an impact of legislation on employees	1

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a detailed judgement of the value of computer technology in training employees	4
• Makes a judgement of the value of computer technology in training employees	3
• Outlines the role of computer technology in training employees	2
• Shows some understanding of computer technology	1

Question 2 (e)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO or more personnel issues, providing points for and/or against that could arise between management and employees in relation to the restructuring of facilities and practices	7
• Recognises and names a personnel issue, providing points for and/or against that could arise between management and employees in relation to the restructuring of facilities and practices	5–6
• Recognises and names personnel issues that could arise between management and employees	3–4
• Names a personnel issue that relates to management or employees	1–2

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO appropriate reasons for producing production targets	2
• Sketches in general terms ONE appropriate reason for producing production targets	1

Question 3 (b)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Produces a graph which shows the production targets • Indicates the months on horizontal axis • Indicates the target units on the vertical axis	3
• Produces a graph which shows the relationship of the monthly production target units	2
• Labels the scale on the axes	1

Question 3 (c)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Identifies more than ONE issue relating to the purpose of placing graphical images on packaging providing points for and/or against	4
• Identifies an issue relating to the purpose of placing graphical images on packaging, providing points for and/or against	3
• Identifies an issue relating to the purpose of placing graphical images on packaging OR • Provides points for and/or against the process	2
• Shows a basic understanding in regard to the purpose of placing graphical images on packaging	1

Question 3 (d)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Provides FIVE correct answers from the table and includes the total cost of packaging (ie. materials, printing, labour and cost of packaging)	4
• Provides THREE correct answers from materials, printing, labour and total cost of packaging	3
• Provides TWO correct answers from materials, printing, labour and total cost of packaging	2
• Provides ONE correct answer from materials, printing, labour and total cost of packaging	1

Question 3 (e)

Outcomes assessed: H1.1, H1.2, H3.3, H5.1

MARKING GUIDELINES

Criteria	Marks
• Indicates main features of computer-developed and hand-drawn techniques in the development of graphics for packaging AND • Provides a detailed judgement/s of the appropriateness of the techniques (related to the value, quality and outcomes)	7
• Indicates some features of computer-developed and hand-drawn techniques in the development of graphics for packaging AND • Provides a clear judgement of the appropriateness of the techniques (related to the value, quality and outcomes)	5–6
• Indicates a feature of computer-developed and hand-drawn techniques in the use of graphics for packaging AND • Provides a vague judgement of the appropriateness of these techniques (related to the value, quality and outcomes)	3–4
• Indicates ONE or more feature of computer-developed OR hand-drawn techniques in the development of graphics for packaging	1–2

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Automotive Industries
Marking Guidelines

Section II

Question 4 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO reasons why a motor vehicle would overheat when being driven in mild weather conditions	2
• Recognises and names ONE reason why a motor vehicle would overheat when being driven in mild weather conditions	1

Question 4 (b)

Outcomes assessed. H1.2, H2.1, H4.3

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of TWO or more brake cooling technologies that have been improved in modern motor vehicles OR • Clearly indicates the main features of ONE brake cooling technology that has been improved in modern motor vehicles	3
• Indicates some features of ONE brake cooling technology that has been improved in modern motor vehicles	2
• Names a brake cooling technology that has been improved in modern motor vehicles	1

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of TWO ways in which heat can be transferred away from the block in an engine cooling system	4
• Provides limited characteristics or features of TWO ways in which heat can be transferred away from the block in an engine cooling system	3
• Provides characteristics and features of ONE way in which heat can be transferred away from the block in an engine cooling system	2
• Recognises ONE way in which heat can be transferred away from the block in an engine cooling system	1

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of at least TWO changes made to motor vehicle design to minimise rust in modern motor vehicles	4
• Indicates the main features of ONE change made to motor vehicle design to minimise rust in modern motor vehicles AND • Identifies at least ONE other change made to vehicle design to minimize rust in modern motor vehicles	3
• Indicates the main features of ONE change made to motor vehicle design to minimise rust in modern motor vehicles OR • Identifies more than ONE change made to motor vehicle design to minimise rust in modern motor vehicles	2
• Identifies ONE change made to motor vehicle design to minimise rust	1

Question 4 (e)

Outcomes assessed: H1.2, H2.1, H3.2, H4.3, H7.1

MARKING GUIDELINES

Criteria	Marks
• Identifies issues and provides points for TWO or more improvements to the interior of the modern motor vehicle that have increased the safety of the occupants	7
• Identifies issues and briefly provides points for TWO improvements to the interior of the modern motor vehicle that have increased the safety of the occupants	5–6
• Identifies issues and provides points for ONE improvement to the interior of the modern motor vehicle that have increased the safety of the occupants	3–4
• Identifies ONE or TWO improvements to the interior of the modern motor vehicle	1–2

Question 5 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Clearly indicates at least TWO features of how the engine management system improves the operation of a motor vehicle	2
• Indicates some features of how the engine management system improves the operation of a motor vehicle	1

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms at least TWO advantages of a front wheel drive motor vehicle compared to a rear wheel drive motor vehicle	3
• Sketches in general terms ONE advantage of a front wheel drive motor vehicle compared to a rear wheel drive motor vehicle	2
• Lists an advantage of a front wheel drive motor vehicle	1

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Recognises and names more than TWO causes of uneven tyre wear on a motor vehicle and provides the characteristics and features of these causes	4
• Recognises and names TWO causes of uneven tyre wear on a motor vehicle and provides the characteristics and features of ONE cause	3
• Recognises and names TWO causes of uneven tyre wear on a motor vehicle OR • Recognises and names ONE cause of uneven tyre wear on a motor vehicle and provides the characteristics and features of this cause	2
• Names ONE cause of uneven tyre wear on a motor vehicle	1

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of at least TWO advantages of an automatic gearbox and shows how they are similar or different to a manual gearbox	4
• Provides characteristics and features of at least TWO advantages of an automatic gearbox but only compares ONE advantage to a manual gearbox	3
• Provides characteristics and features of ONE advantage of an automatic gearbox and compares this to a manual gearbox	2
• Lists an advantage of an automatic gearbox	1

Question 5 (e)

Outcomes assessed: H1.2, H2.1, H4.3, H7.1

MARKING GUIDELINES

Criteria	Marks
• Clearly recognises and names more than TWO body materials other than mild steel and provides points for and/or against its uses in modern motor vehicles	7
• Recognises and names at least TWO body materials other than steel and provides points for and/or against their use in modern motor vehicles	5–6
• Recognises and names ONE body material other than steel and provides points for and/or against its use	3–4
• Recognises and names ONE or MORE uses of body material other than steel in modern motor vehicles	1–2

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Building and Construction Industries
Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H1.2, H2.1

MARKING GUIDELINES

Criteria	Marks
• Recognises and names MORE THAN ONE feature that would be discussed	2
• Names ONE feature	1

Question 4 (b)

Outcomes assessed: H1.2, H2.1, H3.1

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of MORE THAN ONE disadvantage of building the house between the contour	3
• Indicates the main features of ONE disadvantage of building the house between contours	2
• Names a disadvantage	1

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Recognises, names and provides reasons why MORE THAN ONE piece of information is on the site plan	4
• Recognises, names and provides reasons why ONE piece of information is on the plan	3
• Lists TWO pieces of information, giving a reason for each	2
• Names a piece of information that would be on a site plan	1

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides detailed characteristics and features of MORE THAN ONE appropriate procedure the builder would use	4
• Provide limited characteristics and features of MORE THAN ONE procedure the building would use	3
• Provides characteristics and features of ONE procedure the builder would use	2
• Names a procedure	1

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of MORE THAN ONE environmental regulation that must be complied with when building a home	7
• Provides characteristics and features ONE environmental regulation that must be complied with when building a home	5–6
• Provides reasons to indicate why regulations are required	3–4
• Provides a reason for a regulation	1–2

Question 5 (a)

Outcomes assessed: H1.2, H2.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms MORE THAN ONE reason and indicates why it is important to use licensed trades	2
• Sketches in general terms ONE reason why it is important to use licensed trades	1

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides MORE THAN ONE reason why it is important to have building standards	3
• Provides ONE reason why it is important to have building standards	2
• Lists standards, without giving a reason	1

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of TWO methods of protecting a house from termites	4
• Indicates the main features of ONE method of protecting the house from termites	3
• Names TWO methods of protecting a house from termites OR • Names ONE method, giving some supporting information	2
• Names ONE method of protecting a house from termites	1

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and feature of MORE THAN ONE precaution the builders must take to prevent rising damp	4
• Provides characteristics and feature of ONE precaution the builders must take to prevent rising damp	3
• Lists TWO precautions	2
• Lists ONE precaution	1

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides reasons why it is important to have specialised services completed in the correct sequence	7
• Provides ONE reason why it is important to have specialised services completed in the correct sequence	5–6
• Identifies issues related to specialised services	3–4
• Identifies an issue related to a specialised service	1–2

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Electronics Industries
Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides an accurate description of resistor identification for each colour band	2
• Provides some reference to colour bands	1

Question 4 (b)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of truth tables in the planning process	3
• Indicates a feature of truth tables during planning	2
• Indicates a general feature of truth tables OR • An example of a truth table	1

Question 4 (c) (i)

Outcomes assessed: H3.1, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides correct calculations with correct units	2
• Provides calculations with minor error	1

Question 4 (c) (ii)

Outcomes assessed: H3.1, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides correct calculations with correct units	2
• Provides calculations with minor error	1

Question 4 (d)

Outcomes assessed: H3.1, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides accurate characteristics and features of the differences between AC and DC with correct diagrams	4
• Provides accurate characteristics and features of both AC and DC and one correct diagram OR • Provides both correct diagrams and only one accurate description	3
• Provides accurate characteristics and features with diagram of either AC or DC OR • Provides two correct diagrams or two correct descriptions of AC and DC	2
• Provides a characteristic or feature of either AC or DC OR • Provides a correct diagram of AC or DC	1

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of how a relay operates AND • Makes relationships between the functions of both circuits	7
• Provides characteristics and features of how a relay operates AND makes a relationship between the function of both circuits OR • Provides a characteristic and feature of how a relay operates AND makes a relationship between the functions of both circuits	5–6
• Provides a characteristic/feature of how a relay operates AND makes a relationship between the functions of both circuits OR • Provides characteristics and features of how a relay operates OR • Makes relationships between the functions of both circuits	3–4
• Provides a basic statement about a relay OR • Indicates a function of a component in the circuit	1–2

Question 5 (a)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides appropriate examples	2
• Provides one example	1

Question 5 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of movement switch operation and sketches in general terms an appropriate application	3
• Provides characteristics and features of movement switch operation OR • Provides a characteristic or feature of movement switch operation and an application	2
• Provides a feature of movement switch operation OR an application	1

Question 5 (c)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the workings of a variable resistor and sketches in general terms an application of its use	4
• Provides a feature of the workings of a variable resistor and sketches in general terms an application of its use	3
• Sketches in general terms the workings of a variable resistor AND • Indicates the use of a variable resistor	2
• Sketches in general terms the workings of a variable resistor OR • Indicates the use of a variable resistor	1

Question 5 (d)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the piezoelectric effect within a piezo device	4
• Provides a characteristic and feature of the piezoelectric within a piezo device	3
• Identifies a feature of the piezoelectric effect	2
• Identifies a piezo device	1

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides an indication of how components of the oscilloscope operate AND • Makes a judgement between the use of oscilloscope and other electrical testing equipment	7
• Provides an indication of how a component of the oscilloscope operates AND • Makes a judgement between the use of oscilloscope and other electrical testing equipment	5–6
• Sketches in general terms how an oscilloscope operates AND • Outlines uses of the oscilloscope and other electrical testing equipment	3–4
• Sketches in general terms how an oscilloscope operates OR • Outlines uses of the oscilloscope and other electrical testing equipment	1–2

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Graphics Industries
Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Identifies TWO reasons for the use of scale	2
• Identifies ONE reason for the use of scale	1

Question 4 (b)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Indicates TWO or more similarities and/or differences	3
• Indicates ONE similarity and/or difference	2
• Gives a feature of orthogonal and pictorial drawings	1

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches all THREE views correctly and aligned in third angle projection	4
• Sketches TWO views correctly and aligned in third angle projection OR • Sketches all THREE views with some details incorrect but correctly aligned in third angle projection	3
• Sketches TWO views correctly and aligned in third angle projection OR • Sketches all THREE views with some details incorrect but correctly aligned in third angle projection	3
• Sketches ONE view correctly only OR • Sketches TWO OR MORE incomplete views	1

Question 4 (d)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Identifies issues and provides points for and/ or against using perspective drawing in architectural design	4
• Identifies issues and provides points for and/or against an issue related to the use of perspective drawings in architectural design	3
• Identifies ONE issue and provides points for and/or against the use of perspective drawings in architectural design OR • Identifies issues related to the use of perspective drawings	2
• Identifies an issue related to the use of perspective drawings	1

Question 4 (e)

Outcomes assessed: H1.2, H6.1

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO or more different types of drawings and provides why and/or how they are appropriate for both the council and the client	7
• Recognises and names TWO different types of drawings and briefly provides why and/or how they are appropriate for both the council and the client OR • Recognises and names TWO or more different drawings types and provides clearly why and/or how they are appropriate for either the council OR the client	5–6
• Recognises and names ONE drawing type and provides why and/or how it is appropriate for both the council and the client	3–4
• Recognises and names ONE drawing type and indicates the main features of why it is appropriate for the council OR the client	1–2

Question 5 (a)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in isometric with the shape and proportions correct	2
• Sketches in isometric with the – shape and/or proportions incorrect OR • Sketches in another drawing method, but the shape and proportions are correct	1

Question 5 (b)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Clearly indicates the main features of TWO or more differences between isometric and oblique projections	3
• Briefly indicates TWO differences between isometric and oblique projections	2
• Indicates ONE difference between isometric and oblique projections OR • Identifies more than TWO features of either projection	1

Question 5 (c) (i)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Sketches the symbol correctly	1

Question 5 (c) (ii)

Outcomes assessed: H3.1, H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Identifies TWO or more issues and provides points for the importance of symbols	3
• Identifies ONE issue and provides points for the importance of symbols	2
• Identifies an issue related to the use of symbols	1

Question 5 (d)

Outcomes assessed: H2.1, H3.1, H4.3

MARKING GUIDELINES

Criteria	Marks
• Completes the sketch to show the washer, nut, bolt and thread details	4
• Completes the sketch to show any THREE of the washer, nut, bolt and thread	3
• Incomplete sketch showing the washer, nut, bolt and thread – badly aligned or with parts missing OR • Incomplete sketch with only TWO of the thread, washer, nut, or bolt shown correctly	2
• Incomplete sketch with only ONE of the nut, bolt, washer, thread shown correctly OR • Partial details sketched correctly	1

Question 5 (e)

Outcomes assessed: H1.2, H6.1

MARKING GUIDELINES

Criteria	Marks
• Provides why and/or how advances in software packages have given greater scope in the design, development and final presentation of products • Uses examples to illustrate answer	7
• Provides why and/or how advances in software packages have given greater scope in the design, development and final presentation of products	5–6
• Provides why and/or how advances in software packages have given greater scope in the design OR development OR final presentation of products	3–4
• Recognises the use of software design in design OR development OR final presentation OR • Gives an example of the use of recent advanced software packages	1–2

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Metals and Engineering Industries
Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms reasons why aluminium alloy is preferable to mild steel	2
• Sketches in general terms a reason why aluminium alloy is preferable to mild steel	1

Question 4 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Names and provides characteristics and features of a piece of equipment used to bend tube	3
• Names and provides a characteristic or feature of a piece of equipment used to bend tube OR • Provides characteristic/features of a piece of equipment used to bend tube	2
• Names a piece of equipment used to bend tube OR • Provides a characteristic or feature of a piece of equipment used to bend tube	1

Question 4 (c)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Names a suitable industrial process and supports an argument outlining reasons why the process is suitable for joining aluminium tubing	4
• Names a suitable industrial process and supports an argument outlining a reason why the process is suitable for joining aluminium tubing	3
• Names and describes features of an industrial process suitable for joining aluminium tubing OR • Names a suitable industrial process and a related feature	2
• Names a suitable industrial process	1

Question 4 (d)

Outcomes assessed: H1.2, H3.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Fully names the fastener and provides reasons why the fastener is appropriate for securing the rack to the bicycle frame	4
• Fully names the fastener and provides a reason why the fastener is appropriate for securing the rack to the bicycle frame OR • Partially names the fastener and provides reasons why the fastener is appropriate for securing the rack to the bicycle frame	3
• Partially names the fastener and provides a reason why the fastener is appropriate for securing the rack to the bicycle frame OR • Fully names the fastener	2
• Partially names the fastener OR • Provides a reason why the fastener is appropriate for securing the rack to the bicycle frame	1

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Determines the value of a number of appropriate industrial processes AND • Provides characteristics and features of the application of one appropriate industrial processes	7
• Determines the value of a number of industrial processes AND • Provides a feature of an application of a process	5–6
• Identifies a number of appropriate industrial processes AND • Provides a feature of an application of a process **OR** • Identifies an appropriate industrial process AND • Provides features of the application of a process	3–4
• Identifies an appropriate industrial process **OR** • Provides a feature of the application of an appropriate process	1–2

Question 5 (a)

Outcomes assessed: H1.2, H3.1

MARKING GUIDELINES

Criteria	Marks
• Outlines the meaning of BOTH nominated features	2
• Outlines the meaning of ONE nominated feature	1

Question 5 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the complete process required to product the M6 thread	3
• Provides features of steps in the process required to produce the M6 thread	2
• Provides features of a step in the process required to produce the M6 thread	1

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Names the process and indicates the main features of the procedures used to produce the finish	4
• Names the process and indicates the main features of TWO procedures used to produce the finish	3
• Names the process and indicates the main features of a procedure used to produce the finish OR • Indicates the main feature of a procedure used to produce the finish	2
• Names the process OR • Indicates a feature of a procedure used to produce the finish	1

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Recognises and names a suitable process and provides characteristics and features of the process	4
• Recognises and names a suitable process and provides a characteristic and feature of the process	3
• Names a suitable process AND • Provides a feature of the process	2
• Names a suitable process OR • Provides a feature of the process	1

Question 5 (e)

Outcomes assessed: H3.1, H3.2, H3.3, H4.3

MARKING GUIDELINES

Criteria	Marks
• Supports an argument or conclusion for the use of a number steel types in the components	7
• Supports an argument or conclusion for the use of a steel type used in the components OR • Outlines reasons for selecting steel types for a number of components	5–6
• Outlines reasons for selecting a steel type for a particular component	3–4
• Outlines a reason for selecting a steel type for a particular component	1–2

BOARD OF STUDIES
NEW SOUTH WALES

2007 HSC Industrial Technology
Multimedia Industries
Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO suitable graphic file formats	2
• Recognises and names ONE suitable graphic file format	1

Question 4 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of TWO advantages when using hypertext in a multimedia presentation	3
• Indicates the main features of ONE advantage when using hypertext in a multimedia presentation	2
• Names an advantage/feature when using hypertext in a multimedia presentation	1

Question 4 (c)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Identifies TWO or more factors related to preparing a document for electronic publication on the internet	4
• Identifies ONE factor related to preparing a document for electronic publication on the internet	3
• Identifies issues related to publishing	2
• Identifies an issue related to publishing	1

Question 4 (d)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
Detailed response • Recognises and names TWO methods of converting an existing text document to an electronic format that can be edited • Provides TWO or more characteristics/features of this method	4
• Recognises and names a method of converting an existing text document to an electronic format that can be edited • Provides ONE characteristic/feature of this method	3
• Recognises and names a method of converting an existing text document to an electronic format that can be edited OR • Provides TWO characteristics/features of a method	2
• Outlines a method of converting an existing text document to an electronic format that can be edited OR • Provides a characteristic/feature of a method	1

Question 4 (e)

Outcomes assessed: H1.1. H4.3. H5.1, H6.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Detailed response • Recognises and names TWO or more information technologies and identifies issues and provides points for and/or against for the increased use of multimedia on the World Wide Web	7
• Recognises and names ONE information technology and identifies issues and provides points for and/or against for the increased use of multimedia on the World Wide Web OR • Recognises and names TWO information technology issues and provides an outline of issues involved with the increased use of multimedia on the World Wide Web	5–6
• Identifies issues and provides points for and/or against for the increased use of multimedia on the World Wide Web	3–4
• Names ONE information technology OR • Outlines an issue/point for and/or against for the increased use of multimedia on the World Wide Web	1–2

Question 5 (a)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Lists TWO or more components of a multimedia authoring system	2
• Lists ONE component of a multimedia authoring system	1

Question 5 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Recognises and names ONE suitable compression technique used to save storage space and provides TWO characteristics/features of this technique	3
• Name ONE suitable compression technique used to save storage space and provides ONE characteristic/feature of this technique	2
• Names a suitable compression technique	1

Question 5 (c)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Detailed response • Recognises and names TWO or more basic principles of a method to produce an animation • Provides TWO characteristics/features of this method	4
• Recognises and names ONE basic principle of a method to produce an animation • Provides TWO characteristics/features of this method	3
• Outlines a method to produce an animation OR • Provides TWO characteristics/features of this method	2
• Recognises and names ONE basic principle of a method to produce an animation OR • Provides a characteristic/feature of a method	1

Question 5 (d)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides detailed characteristics/features of TWO or more methods of reducing file size of a multimedia production	4
• Provides detailed characteristics/features of ONE method of reducing file size of a multimedia production	3
• Recognises and names TWO or more methods of reducing file size of a multimedia production	2
• Recognises and names ONE method of reducing file size of a multimedia production	1

Question 5 (e)

Outcomes assessed: H1.1, H1.2, H4.3, H5.1, H6.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Provides a detailed response indicating in-depth issues related to website development and a printed catalogue. Inquires into and determines the value of these issues	7
• Indicates issues related to website development. Inquires into and determines the value of these issues	5–6
• Indicates an issue related to website development and printed catalogue concept. Inquires into and determines the value of this issue OR • Outlines a number of web and printed catalogue issues	3–4
• Indicates an issue related to website development and printed catalogue concept	1–2

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Marking Guidelines

Section II

Question 4 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Names a suitable glue and gives a reason for its use in the clock assembly	2
• Names a suitable glue OR • Provides a reason for its use in the clock assembly	1

Question 4 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides a good description of a suitable method to support AND machine the decorative edge on part A	3
• Provides a brief description of a suitable method to support AND machine the decorative edge on part A OR • Provides a detailed description of a suitable machining method OR • Provides a detailed description of a suitable support method	2
• Names a suitable machining method ONLY OR • Provides a brief description of a suitable support method ONLY	1

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Names TWO suitable joints and provides correct sketches for these joints	4
• Names TWO suitable joints with ONE correct sketch OR • Names ONE suitable joint with TWO correct sketches	3
• Names TWO suitable joints ONLY OR • Sketches TWO suitable joints ONLY OR • Names and sketches ONE suitable joint ONLY	2
• Names ONE correct joint OR • Correctly sketches ONE suitable joint	1

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides a complete outline of the main steps in the countersunk screw attachment process	4
• Provides an outline of most steps in the countersunk screw attachment process	3
• Provides a limited outline of some steps in the countersunk screw attachment process	2
• Provides a relevant step in the countersunk screw attachment process	1

Question 4 (e)

Outcomes assessed: H1.2, H2.1, H4.2, H5.1, H6.1, H6.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Provides a full description of preparation AND spraying procedures that can be used to produce a quality finish	7
• Provides a limited description of preparation AND spaying procedures that can be used to produce a quality finish	5–6
• Provides a brief description of preparation AND spraying procedures that can be used to produce a finish OR • Describes procedures for preparing the clock for spraying OR • Describes procedures for spraying the clock	3–4
• Lists some aspects of preparing the clock for spraying OR • Lists some aspects of spraying the clock	1–2

Question 5 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Names and describes an industrial process that produces a flat top	2
• Names OR describes an industrial process that produces a flat top	1

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides a suitable sketch, names and describes a method of attaching the solid timber top to the rails	3
• Provides a suitable sketch AND names OR briefly describes a method of attaching the solid timber top to the rails	2
• Provides a suitable sketch OR names OR briefly describes a method of attaching the solid timber top to the rails	1

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Identifies a detailed range of factors that needs to be considered when selecting solid timber boards for the table top	4
• Identifies a range of factors that needs to be considered when selecting solid timber boards for the table top.	3
• Lists/identifies one factor that is related to selecting solid timber boards for the table top	2
• Lists/identifies one factor that is related to selecting any timber for the table top	1

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Describes AND sketches a suitable method of cramping the solid timber boards together	4
• Briefly describes AND sketches a suitable method of cramping the solid timber boards together	3
• Describes OR sketches a suitable method of cramping the solid timber boards together	2
• Names a suitable method of cramping the solid timber boards together	1

Question 5 (e)

Outcomes assessed: H1.2, H4.3, H6.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Discusses, in depth, the advantages AND disadvantages of using manufactured board in place of solid timber for the table top	7
• Discusses the advantages AND the disadvantages of using manufactured board in place of solid timber for the table top	5–6
• Discusses the advantages OR the disadvantages of using manufactured board in place of solid timber for the table top	3–4
• Lists the advantages OR disadvantages of using manufactured board OR solid timber for the table top	1–2