2008 HSC Notes from the Marking Centre Industrial Technology

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Contents

2008 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 2008 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 syllabus, the 2008 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

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

Both the level of presentation and the amount of research and planning in the folios undertaken by candidates has improved. 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 produced 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 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, have been utilised in applying the many different processes involved in the development of these projects. Much of this is not apparent in the completed project and it is only through the folio that the examiners are able to understand the full input of the candidate.

Candidates should be familiar with the marking criteria, available from the Board's website, 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. Simple statements of what candidates want, intend, or need to make are not sufficient. Better responses related the 'what' to 'why' and 'how' and also gave details of 'where' information would be sought in order to fulfil their requirements and/or where the project would be put to use.

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 it should be clearly evident that the candidate has used the information in some way. 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 ongoing evaluation.

Timelines and finance plans were usually presented well and in an increasing variety of ways. 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 commented in some detail regarding the personal protective equipment (PPE) aspects of OHS, especially when using machinery in the workshop. Better responses 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 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 seem to have satisfactorily managed their time and resources to produce a finished project, albeit of varying quality.

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.

Candidates for Multimedia Industries and Electronics Industries must be aware that it is their 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. Weaker Multimedia Industries 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. Weaker responses used simple hyperlinking techniques to relate imported objects or used only one or two basic software packages.

Weaker Multimedia Industries responses often contained long video presentations that, despite their length, failed to show a range of skills. Candidates should be aware that the length of video presentations has no bearing on the marks awarded. In most cases a lengthy video showing a limited range of skills will merit lower marks than a short, concise presentation showing a wide range of skills in its development, production and presentation. Some weaker Multimedia Industries Design, Management and Communication folios consisted of a conglomeration of information, often without headings or organisation.

As many of the Multimedia Industries major projects use software packages that are not available in the school, it is essential that in such cases the work is presented on either the candidate's own computer, or at least on one capable of running all the software used in its production, not just the final presentation.

Written examination

Section I

Question 1

(a) Most responses identified two sources of finance.

(b) Most responses identified a method of locating an emerging technology. Better responses identified a method of locating and gave methods of evaluation.

(c) Mid-range responses identified issues that may have influenced the decision to establish the facility overseas. Better responses expanded upon this to provide the effect of these issues on the company.

(d) While most responses showed some understanding of marketability, many did not show an in-depth understanding of the term. Better responses provided clear, detailed features of marketability.

(e) Most responses identified more than one method of establishing or monitoring quality control. Better responses evaluated several strategies to both establish and monitor quality control.

Question 2

(a) Most responses sketched in general terms at least one issue relevant to an Environmental Impact Statement. Weaker responses named issues without an outline.

(b) Mid-range responses moved beyond simply naming some OHS practices, and referred to OHS policies in general. The best responses related these policies to the establishment of a new facility overseas.

(c) Mid-range responses demonstrated an understanding of equal employment opportunity (EEO) principles, and showed how these principles could be ensured in the workplace. These responses had difficulties in demonstrating how these principles could be enforced in the recruitment process, with only the best responses giving multiple ways of ensuring an adherence to EEO principles during the recruitment.

(d) Mid-range responses identified more than one method of communication between the local and overseas facilities. Some responses demonstrated confusion with the term ‘computing applications’, only listing or evaluating word-processing or spreadsheet applications, rather than applications that are specifically used for communication. Better responses determined the value of computing applications. The best respondents determined the value of multiple computer-based applications suitable for overseas communications.

(e) Most responses moved beyond simply naming or listing reasons for and/or against sending an employee overseas, and supplied multiple implications from at least the employers or the employees perspective. Better responses provided multiple implications from both perspectives.

Question 3

(a) Most responses named two software applications that could be used to graph production costs.

(b) (i) Correct responses accurately graphed the predicted annual overseas production costs.

(ii) Better responses indicated correctly when overseas costs would match local production costs.

(iii) Most responses described in general terms the trends in the graph for local and overseas production. Better responses fully described the characteristics and features for the trends in the graph for local and overseas production costs.

(iv) Mid-range responses indicated the main factors to be considered when predicting production costs. Better responses fully outlined a variety of factors to be considered when predicting production costs.

(c) In most responses, candidates described the different forms of presenting the information. Weaker responses neglected to make clear the relationship of the operations manual to the overseas facility. Better responses fully related the forms of presenting the information to the purpose of the manual.

Section II

Focus area – Automotive Industries

Question 4

(a) Mid-range responses listed one method of diagnosis. The better responses gave two methods.

(b) Mid-range responses described the location of the differential and listed a method for better traction. The better responses outlined two methods for achieving better traction.

(c) Most responses gave a basic explanation of how a rotary engine and four-stroke piston engine operated. The better responses linked their operation to performance and efficiency.

(d) Most responses gave one method used to minimise gas emissions. Better responses gave clear explanations of two or more methods.

(e) Most responses gave impact for both diesel and electric engines. The better responses gave detailed explanations of the impact of both diesel and electric engines.

Question 5

(a) The better responses demonstrated an understanding that diesel engines run on compression ignition. Most responses described how a glow plug worked, but did not explain that it is only used to initially start the engine.

(b) Better responses described in some detail how electronically controlled devices improve the vehicle occupant safety, relating their explanations to several examples.

(c) Most responses demonstrated a general understanding of the process of bleeding the brakes. Better responses gave a detailed description of the process in the correct sequence.

(d) Most responses described how to diagnose a faulty wheel alignment. Better responses described the process of correcting the alignment.

(e) Most responses listed the registration checks but only the better responses managed to outline these checks to determine the roadworthiness of the motor vehicle. Weaker responses did not distinguish between chassis and body inspection.

Focus area – Building and Construction Industries

Question 4

(a) Most responses gave reasons for finding terrace houses in urban areas rather than in rural areas.

(b) Most responses explained the impact of local government regulations on construction projects.

(c) Most responses outlined methods used to secure a construction site. Better responses provided characteristics and features of this security.

(d) Mid-range responses recognised a method of obtaining levels on a construction site. Better responses provided detailed features of the levelling operation.

(e) Most responses gave reasons for either renovation or knock down and rebuild. Better responses identified the criteria for both renovation and knock down and rebuild.

Question 5

(a) Most responses listed two types of drawing that were required for a development application.

(b) Mid-range responses outlined two strategies to reduce water consumption in the household situation. Better responses outlined three strategies.

(c) Weaker responses named one material used for flooring instead of evaluating a range of materials.

(d) Most responses outlined reasons for using corrugated steel as a roofing material. The better responses could justify several reasons for using corrugated steel as a roofing material.

(e) Most responses gave examples of how tools could be used to reduce construction times. The better responses explained how materials, tools and equipment were able to reduce construction time.

Focus area – Electronics Industries

Question 4

(a) Better responses demonstrated a good understanding of Ohm's law and calculated the correct resistance.

(b) Most responses identified two different power sources but often did not describe them adequately.

(c) Most responses demonstrated an adequate knowledge and understanding of the operation of a transformer. A number of the weaker responses did not relate the primary and secondary windings to the effect on the output voltage.

(d) Only the better responses provided a good explanation of how a variable capacitor works and included a practical application for its use.

(e) Most responses displayed a good knowledge of the components in the circuit but only the better responses explained how these components worked together in the operation of the circuit.

Question 5

(a) Better responses interpreted all of the information on the rechargeable battery. The voltage was well understood but weaker responses did not recognise that 'Ah' referred to 'ampere hours'.

(b) Mid-range responses provided clear sketches but had difficulty explaining how the meters are connected in a circuit.

(c) Most responses identified the characteristics of two methods of producing PCBs but did not show how they were similar or different.

(d) Most responses identified that heat shrink was used for insulation and safety. Weaker responses did not explain how it was applied or confused heat sink and heat shrink.

(e) Better responses provided characteristics and features of a fault-finding process for the circuit. Weaker responses listed a testing device, with a multimeter being the most common, but did not mention how to use it to diagnose the cause of the problem for each component when fault finding.

Focus area – Graphics Industries

Question 4

(a) Most responses gave two benefits of using models.

(b) Most responses demonstrated understanding of the concept of two-dimensional freehand sketches and could identify their main features, but did not give points for and/or against their use in communicating design ideas.

(c) Most responses outlined the issues that confront graphic designers, choosing an OHS point of view as the basis for their answer.

(d) Mid-range responses completed the body and the washer of the crank arm assembly correctly. The hidden detail lines and the handle were often incomplete. Weaker responses did not assemble the crank arm parts.

(e) Most responses identified some technologies but restricted their computer technologies to software. Mid-range responses only described what the technologies could do and did not evaluate their use. Weaker responses only discussed presentation and left out 'develop' as part of their response.

Question 5

(a) Better responses gave two reasons why designers use three-dimensional drawings.

(b) Mid-range responses gave at least one advantage of rendering as a presentation technique but many had difficulty expressing their answer clearly.

(c) Weaker responses had difficulty with the development of the dust pan. Weaker responses did not know what a development was and produced an orthogonal sketch or reproduced the isometric drawing. The rolled safety edge and the flared sides to the top of the pan were often missed.

(d) Mid-range responses drew the outline of the bearing and located the two slotted holes but did not show the hatching lines for the cut surfaces nor the small hole in the top of the bearing.

(e) Most responses identified a range of engineering and product drawings used in the design and manufacture of products. They often failed to evaluate the drawing types. The best responses described and evaluated these drawings.

Focus area – Metals and Engineering Industries

Question 4

(a) Mid-range responses recognised the wall thickness was 2 mm but failed to correctly calculate the internal diameter.

(b) Most responses described a process whereby a single scroll could be produced but failed to describe a process for producing identical pairs of scrolls.

(c) For those better responses that identified a suitable machining process, many displayed a thorough knowledge of CNC machining. There were some responses that suggested a non-machining process to produce identical end caps.

(d) Better responses provided both a clear description and sketch to describe how to shape steel tubes to form a close fitting joint when welded.

(e) Most responses suggested innovative methods to attach the parts to the frame of the shelving unit. Better responses provided appropriate detail.

Question 5

(a) Mid-range responses listed only one suitable material from which to make the head of the hammer.

(b) Weaker responses displayed a limited understanding of how to fix the shaft to the handle of the hammer. Weaker responses also described how to fix the handle to the head of the hammer or gave unsuitable methods of attaching the handle to the shaft.

(c) Weaker responses showed a lack of knowledge of the terminology associated with the taper turning on a lathe. Only the best responses successfully described the adjustments required to produce a taper on a lathe.

(d) Mid-range responses provided a suitable industrial process for modifying the head of the hammer to prevent damage when in use but did not interpret the question correctly. They did not provide reasons in favour of their chosen industrial process.

(e) Mid-range responses listed a range of materials and industrial processes that could be used to mass produce a similar ball pein hammer without any evaluation. Better responses demonstrated an excellent understanding of materials and industrial processes.

Focus area – Multimedia Industries

Question 4

(a) Better responses identified two types of storyboard used in web design, cinematography or other forms of multimedia.

(b) Mid-range responses recognised two formats; however, most only gave a limited comparison.

(c) Better responses demonstrated a good knowledge of audio file formats and determined the value of the formats.

(d) Mid-range responses named two methods of backing up data, with most only providing an outline of the process for each method. Better responses provided the features and characteristics of the processes.

(e) Better responses capitalised on their knowledge of the design and production processes involved in the multimedia industries when attempting this part. Mid-range responses described processes involved in the design area without adequately attempting the production processes.

Question 5

(a) The weaker responses demonstrated very little knowledge of morphing.

(b) Mid-range responses demonstrated knowledge of the term 'hyperlinks'; however, they did not provide a solution to the problem.

(c) Most responses outlined the ethical and copyright issues involved; however, only the better responses described these issues.

(d) Although mid-range responses demonstrated a basic knowledge of animation techniques, only the better responses provided appropriate descriptions of these techniques.

(e) Weaker responses had difficulty discussing the advances in technology that have made video conferencing possible. Many listed aspects of a few pieces of hardware that are appropriate for conferencing but only the best responses could draw together the necessary details for this process.

Focus area – Timber Products and Furniture Industries

Question 4

(a) Mid-range responses provided justifications for selecting a suitable timber. These responses could have been improved by the use of suitable technical terms. Weaker responses simply provided the name of a timber.

(b) Most responses named a suitable machine such as a router. However, many failed to provide a description of how the industrial process could be used to produce a decorative edge to the tabletop.

(c) Mid-range responses identified a suitable industrial product, but many failed to provide an adequate description of how it should be applied to achieve a high quality finish.

(d) Most responses recognised the relative merits of the aesthetics of grain direction, waste generation and cutting out for each orientation method. Better responses acknowledged the significance of short grain.

(e) Better responses clearly identified a range of implications of sourcing timber from both old growth forests and rainforests, as well as providing a full discussion on alternative sources. These included implications such as environmental degradation, habitat and species destruction, the impact on tourism, and the economics of preparing these timbers for use, while alternative sources included plantations, recycling and manufactured boards. However, mid-range responses tended to answer one half of this part adequately while providing a limited, if any, response to the other half.

Question 5

(a) Most responses demonstrated a good working knowledge of design principles. They elaborated on principles of strength and force distribution in relation to angling legs.

(b) Most responses demonstrated understanding of the joining techniques necessary to accomplish the joining of stool members. They sketched joints, but many did not adequately label the diagrams produced.

(c) A number of appropriate solutions were described in candidate responses. Most responses exhibited an understanding of planning and organisation in relation to their cutting method application. Weaker responses lacked the depth of understanding necessary to be able to describe the cutting process in detail.

(d) Better responses exhibited a practical understanding of problem-solving in conjunction with available industrial products and applications. Some mid-range responses were unable to present more than one example of a solution.

(e) Weaker responses demonstrated a lack of understanding of manufacturing and assembly processes that would be undertaken. They acknowledged concepts but lacked depth in their discussion of processes. Weaker responses often misinterpreted the question as being purely about an assembly process. Many sketches were of insufficient detail. Some weaker responses included a list of sequences or information relating back to joint selection in part (c).

Industrial Technology

2008 HSC Examination Mapping Grid

Question	Marks	Content	Syllabus outcomes
Section I			
1 (a)	2	Structural factors, project management	H1.1, H3.2
1 (b)	3	Technical factors, project management	H1.1, H1.2, H7.1
1(c)	4	Structural, technical factors, project management	H1.1, H1.2, H3.2, H7.1
1(d)	4	Structural, technical factors, project management	H1.1, H1.2, H3.2
1 (e)	7	Structural, technical factors, project management	H1.1, H1.2, H3.1, H5.2, H6.2
2 (a)	2	Environmental and sociological factors	H1.1, H7.1
2 (b)	3	OHS, personnel issues	H1.1, H1.2, H7.1
2 (c)	4	Personnel issues	H1.1, H1.2
2 (d)	4	Computer applications	H1.1, H1.2
2 (e)	7	Personnel factors, OHS, environmental and sociological factors	H1.1, H1.2, H6.1, H7.1
3 (a)	2	Literacy, graphics, calculations	H1.1, H5.1
3 (b) (i)	2	Literacy, graphics, calculations	H1.1, H3.1, H5.1
3 (b) (ii)	1	Literacy, graphics, calculations	H3.1, H5.1
3 (b) (iii)	4	Literacy, graphics, calculations	H1.1, H3.1, H5.1
3 (b) (iv)	4	Literacy, graphics, calculations	H1.1, H1.2, H6.1
3 (c)	7	Literacy, graphics, calculations	H1.1, H2.1, H3.1, H5.1
Automotive Industries Section II			
4 (a)	2	Chassis and related components	H1.2, H2.1, H3.2
4 (b)	3	Chassis and related components	H1.2, H4.3
4 (c)	4	Power sources	H1.2, H4.3
4 (d)	4	Engine and related systems	H1.2, H2.1, H4.3
4 (e)	7	Power sources	H1.2, H2.1, H4.3, H6.1
5 (a)	2	Electrical	H1.2, H4.3
5 (b)	3	Electrical	H1.2, H2.1, H6.2
5 (c)	4	Tools and equipment	H1.2, H2.1, H6.2
5 (d)	4	Tools and equipment	H1.2, H2.1, H6.2
5 (e)	7	Government and statutory regulations	H1.2, H2.1, H4.3, H6.1
Building and Construction Industries Section II			
4 (a)	2	Building principles/materials	H1.2
4 (b)	3	Building principles/materials	H4.3
4 (c)	4	Building principles/materials	H2.1

Question	Marks	Content	Syllabus outcomes
4 (d)	4	Processes, tools, machinery and equipment	H1.2, H2.1
4 (e)	7	Processes, tools, machinery and equipment	H1.2, H2.1, H4.3, H6.1
5 (a)	2	Building principles/materials	H3.1
5 (b)	3	Building principles/materials	H1.2, H3.2
5 (c)	4	Processes, tools, machinery and equipment	H4.3, H6.1
5 (d)	4	Processes, tools, machinery and equipment	H1.2, H4.3
5 (e)	7	Processes, tools, machinery and equipment	H1.2, H2.1, H4.3
Electronics Industries Section II			
4 (a)	2	Electrical Principles	H4.3
4 (b)	3	Electrical Principles	H1.2, H4.3, H6.1
4 (c)	4	Electrical Principles	H1.2, H4.3, H6.1
4 (d)	4	Electrical Principles	H3.1, H4.3, H6.1
4 (e)	7	Processes	H1.2, H2.1, H3.1, H4.3, H6.1
5 (a)	2	Electrical Principles	H1.2, H4.3
5 (b)	3	Graphics Instruments and test equipment	H1.2, H2.1, H3.1
5 (c)	4	Processes	H1.2, H2.1, H4.3, H6.1
5 (d)	4	Electrical Principles	H1.2, H2.1, H4.3, H6.1
5 (e)	7	Electrical Principles	H1.2, H2.1, H3.1, H4.3, H6.1
Graphics Industries Section II			
4 (a)	2	Processes – presentation techniques	H1.1, H1.2, H4.3
4 (b)	3	Processes – freehand drawing	H3.1, H4.3, H5.1
4 (c)	4	Equipment	H1.2, H2.1, H7.1
4 (d)	4	Processes – engineering/product drawing	H2.1, H3.1, H4.3, H6.1
4 (e)	7	Processes – presentation techniques	H1.1, H4.3, H5.2, H6.2
5 (a)	2	Principles/standards	H1.1, H1.2, H5.1
5 (b)	3	Processes – presentation techniques	H1.2, H3.1, H5.1, H6.2
5 (c)	4	Processes – freehand drawing	H1.2, H4.3, H6.1
5 (d)	4	Principles/standards	H2.1, H3.1, H4.3
5 (e)	7	Processes	H1.1, H1.2, H3.1, H4.3, H5.1, H6.2
Metals and Engineering Industries Section II			
4 (a)	2	Materials	H1.2, H4.3
4 (b)	3	Processes, tools and machinery	H1.2, H3.2, H4.1, H4.3
4 (c)	4	Processes, tools and machinery	H1.2, H3.2, H4.1, H4.3
4 (d)	4	Processes, tools and machinery	H1.2, H3.1, H3.2, H4.3, H5.1
4 (e)	7	Processes, tools and machinery	H1.2, H2.1, H3.2, H4.3, H6.1

Question	Marks	Content	Syllabus outcomes
5 (a)	2	Materials	H1.2, H4.3
5 (b)	3	Processes, tools and machinery	H1.2, H2.1, H3.1, H4.3
5 (c)	4	Processes, tools and machinery	H1.2, H2.1, H3.1, H4.3
5 (d)	4	Processes, tools and machinery	H1.1, H1.2, H4.3, H6.1
5 (e)	7	Processes, tools and machinery	H1.1, H1.2, H4.3, H6.1
Multimedia Industries Section II			
4 (a)	2	Processes, tools and machinery	H1.2, H4.3
4 (b)	3	Materials and resources	H1.2, H4.3
4 (c)	4	Materials and resources	H1.2, H4.3
4 (d)	4	Processes, tools and machinery	H1.2, H3.2, H4.3
4 (e)	7	Processes, tools and machinery	H1.1, H1.2, H3.2, H3.3, H4.3
5 (a)	2	Materials and resources	H1.2, H4.3
5 (b)	3	Materials and resources	H3.2, H4.1, H4.2, H4.3
5 (c)	4	Processes, tools and machinery	H3.2, H4.3
5 (d)	4	Materials and resources	H3.2, H4.1, H4.3
5 (e)	7	Processes, tools and machinery	H1.2, H3.2, H4.3, H6.1
Timber Products and Furniture Industries Section II			
4 (a)	2	Materials	H3.1, H4.3, H6.1
4 (b)	3	Materials, processes, tools and machinery	H1.2, H4.3, H6.1
4 (c)	4	Materials, processes, tools and machinery	H1.2, H2.1, H4.1
4 (d)	4	Materials, processes, tools and machinery	H1.2, H2.1, H3.1, H4.3
4 (e)	7	Materials, processes, tools and machinery	H1.2, H4.3
5 (a)	2	Processes, tools and machinery	H1.2, H3.1, H4.3, H6.1
5 (b)	3	Processes, tools and machinery	H1.2, H3.1, H4.3
5 (c)	4	Materials, processes, tools and machinery	H1.2, H2.1, H3.1, H4.3
5 (d)	4	Materials, processes, tools and machinery	H1.2, H2.1, H4.3
5 (e)	7	Materials, processes, tools and machinery	H1.2, H2.1, H3.1, H4.3, H6.1

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NEW SOUTH WALES

2008 HSC Industrial Technology Automotive Industries Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Industrial Technology Automotive Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

(1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and

(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The examination committee develops the marking guidelines concurrently with the examination paper. The 'Sample Answers' or similar advice are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

The information in the marking guidelines is further supplemented as required by the Supervisor of Marking and the senior markers at the marking centre.

A range of different organisations produce booklets of sample answers for HSC examinations, and other notes for students and teachers. The Board of Studies does not attest to the correctness or suitability of the answers, sample responses or explanations provided. Nevertheless, many students and teachers have found such publications to be useful in their preparation for the HSC examinations.

A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

- Business loan
- Float the company to raise funds (shares)
- Own finances from saved profits
- Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
- Industry shows
- Internet
- Industry representatives
- Professional / trade publications

Evaluate:
- Demonstrations by manufacturers / sales representatives
- Investigate the technology in other work sites
- Publications/user feedback/reviews/internet
- Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

- Cheaper labour
- Cheaper materials and material costs/ closer to raw materials
- Less/different/favourable regulations
- Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
- Cheaper price of products
- A global product
- Better quality
- Taxation incentives
- Other overseas government incentives
- New facility —> more efficient facility

Negative impact
- Poor labour conditions (eg sweat shops)
- Negative environmental impact
- Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish
- Recruitment
- Training
- Management from IND-TECH to establish systems
- Use of cutting edge technology
- Automation
- Following specific IND-TECH guidelines/procedures

Monitor
- Automation
- Continual testing of materials
- Continual training of staff
- Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2

• Sketches in general terms ONE issue that may be included in an environmental impact statement OR • Lists issues	1

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
- allows for precise detailing of procedures and specifications
- can be combined with graphics, photographs and charts to emphasise important information

Graphics
- allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
- good for quick reference guides

Photographs
- can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
- usually combined with text and graphics to highlight key information

Charts
- allow for easy cross referencing of information (tables)
- graphs allow for quick interpretation of information

Section II

Question 4 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Lists TWO ways in which a badly worn shock absorber can be diagnosed	2
• Lists ONE way in which a badly worn shock absorber an be diagnosed	1

Sample answer/Answers could include:

- Increase in braking distance
- Instability
- Tyre wear
- Rough ride
- Noise/squeaking
- Pulling to one side
- Oscillating suspension
- Leans to one side
- Test bench

Question 4 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Indicates where a differential is found on a rear wheel drive vehicle AND • Sketches in general terms TWO devices that can achieve more usable traction	3
• Indicates where a differential is found on a rear wheel drive vehicle and sketches in general terms ONE device that can achieve more useable traction	2
• Indicates where a differential is found on a rear wheel drive vehicle OR • Sketches in general terms ONE device that can achieve more usable traction	1

Sample answer/Answers could include:

A differential is found between the drive wheels of a vehicle. It is located in the centre of the motor vehicle between the rear wheels.

- Limited Slip Differential. The side gears are coupled to the carrier via a stack of clutch plates which limits the speed difference between the two wheels
- A locking differential employs a mechanism for allowing the planetary gears to be locked relative to each other
- The torsion differential keeps sending some torque to the wheel with more resistance
- Electronic traction control systems usually use the ABS to detect a spinning wheel and apply the brake to that wheel
- A viscous coupling unit can replace a center differential entirely or be used to limit slip in a normal differential
- Snow chains
- Off road tyres or racing slicks
- IRS

Question 4 (c)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides the difference in operation between the TWO engine types and provides a difference in performance	4
• Provides the difference in operation of the TWO engine types	3
• Outlines the operation of ONE engine type and provides a performance feature	2
• Provides a performance feature of ONE engine type	1

Sample answer/Answers could include:

- A rotary engine has fewer moving parts than a comparable four-stroke engine
- All the parts in a rotary engine spin continuously in one direction rather than changing the directions like pistons going up and down
- In a rotary engine the rotors spin at one-third the speed of the output shaft, the main moving parts of the engine thus move slower than the parts in a piston engine. This helps with reliability
- Has higher rev range
- Fuel consumption: four-stroke generally more fuel efficient

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of more than ONE method used to minimise gas emissions from a motor vehicle exhaust system	4
• Describes methods used to minimise gas emissions from a motor vehicle exhaust system	3
• Outlines methods used to minimise gas emission from a motor vehicle exhaust system	2
• Identifies ONE method used to minimise gas emissions from a motor vehicle exhaust system	1

Sample answer/Answers could include:

- There is an oxygen sensor placed in front of the catalytic converter. This sensor tells the engine computer system how much oxygen is in the exhaust. The computer adjusts the air-to-fuel mixture to decrease the amount of oxygen which reduces harmful emissions
- The catalytic converter also converts harmful gases to less harmful gases

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more recent developments in the design of electric AND diesel engines	7
• Relates the cause and effect of TWO or more recent developments in the design of electric OR diesel engines	5–6
• Outlines the impact of recent development in the design of electric AND diesel engines	3–4
• Identifies a recent development in an electric OR diesel engine	1–2

Sample answer/Answers could include:

Electric hybrid cars use an internal combustion engine with a single or series of electric motors powered by recharged electric batteries. The batteries are recharged through movement or connected to electricity when stationary. The car switches between the two for optimum performance and can operate with both at the same time.

Diesel cars have a small internal combustion engine that uses diesel fuel. This engine does not use a spark plug and the fuel is compressed to form an explosion and operate the pistons. The remainder of the engine operates similar to a typical petrol car engine.

The advantages of an electric/petrol hybrid engine are greater fuel economy, lower emissions, recapture of energy and quieter than diesel or conventional petrol engines.

The advantages of diesel engines are lower fuel consumption, less harmful emissions, more reliable, longer lasting engine life.

Recent design developments of diesel motors
- Improved engine management systems allow for better cold starting, quieter operation, more power, more fuel efficient
- Turbo

Recent design development of electric engines
- Better batteries
- Quick recharge

Impacts of developments
- Cheaper, so more people use them
- Better to drive, so more people willing to use them

Less harmful to the environment so governments may legislate for their use.

Question 5 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Lists TWO differences between a diesel engine and a petrol engine during ignition	2
• Lists ONE difference between a diesel engine and a petrol engine during ignition	1

Sample answer/Answers could include:

- Diesel engines do not have a spark plug but petrol engines do
- Heat and compression ignites the fuel in a diesel engine with no electrics
- The spark plug provides a regulated spark through a wire in a petrol engine
- Older diesel engines use a glow plug when the engine is cold to help starting

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features, using examples, of how the electrical system of a motor vehicle can improve the safety of the occupants	3
• Provides characteristics and features, using an example, of how the electrical system of a motor vehicle can improve the safety of the occupants	2
• Provides characteristics and features of a motor vehicle electrical system, with only limited reference to safety	1

Sample answer/Answers could include:

- Lights in doors when open so following traffic can see
- Immobiliser prevents car being started without the key
- Headlights turn off after a set time when the engine is not on
- Interior lights turn on and off automatically after a set time when the door is opened or closed
- Alarms sound if seat belts not on when car started
- Keyless entry
- Electronic stability control – car handles better in emergencies
- ABS
- Rain sensitive windscreen wipers

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the steps used in the correct sequence when bleeding a brake system on a motor vehicle	4
• Provides characteristics and feature of more than ONE step when bleeding a brake system on a motor vehicle	3
• Provides characteristics and features of ONE step when bleeding a brake system on a motor vehicle	2
• Provides a characteristic or feature of a motor vehicle brake system with limited reference to bleeding the brakes	1

Sample answer/Answers could include:

- One person pumps the brake pedal to compress the air, then holds the pressure
- The other person opens the bleed valve on the passenger rear wheel first and closes the valve after the pedal has reached the floor of the vehicle. The first two processes are repeated until there is no air in the system
- Steps 1 and 2 are repeated in the following sequence, rear driver's side, front passenger side and finally front driver's side
- It is important that the brake fluid reservoir is kept as full as possible to prevent air getting into the system

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the process used to diagnose a faulty wheel alignment and procedures used to correct a faulty wheel alignment	4
• Provides characteristics and features of the process used to diagnose a faulty wheel alignment and shows some understanding of how to correct faulty wheel alignment OR • Show some understanding of how to diagnose a faulty wheel alignment and provides characteristic and features of how to correct a faulty wheel alignment	3
• Provides characteristics and features of the process used to diagnose a faulty wheel alignment OR • Provides characteristics and features of how to correct a faulty wheel alignment	2
• Indicates a feature of a wheel alignment process OR • Recognises a wheel alignment problem	1

Sample answer/Answers could include:

Diagnose a faulty wheel alignment

- Excessive tyre wear
- Uneven tyre wear
- Steering shakes
- Vehicle does not track straight
- Vehicle pulls to one side
- Vehicle wanders over the road
- Thrust alignment

The following adjustments are made manually with the help of electrical equipment:

- Toe in / Toe out. The direction the front wheels are pointing towards is measured from the centre and adjustments are made when pointing forwards so that the distances are the same for the front and rear of the tyre on each side
- Castor adjustment – this is the angle of the steering pivot and is adjusted to when the vehicle has problems in straight line tracking
- Camber adjustment – this is the angle of the wheel and is adjusted to stop one side of the wheel from wearing out.

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Indicates TWO or more main features of checks undertaken on the chassis, engine and body of a motor vehicle	7
• Indicates TWO or more main features of checks undertaken on TWO of the following: chassis, engine or body	5–6
• Indicates the main features of ONE check undertaken on the chasis, engine and body of a motor vehicle OR • Indicates the main features of checks undertaken on the chassis OR engine OR body of a motor vehicle	3–4
• Identifies problems with a motor vehicle that makes it unroadworthy OR • Names more than ONE check undertaken to check if a car is roadworthy	1–2

Sample answer/Answers could include:

Chassis

Brakes: A machine is attached to the brake pedal and the vehicle is taken for a drive. When the inspector puts his foot on the brakes a reading is taken and printed out. The results tell if the braking system is satisfactory or not.

Steering: The inspector jacks the car up off the ground at the front and checks the steering for 'free play'. If there is excess movement it could mean worn components.

Tyres: A visual check is made of tyres to see if they are faulty or 'bald'.

Engine

Exhaust: No excess noise. Hearing/visual examination

Block: No visible signs of oil leaks.

Cooling system: Visual check to see if there are any leaks

Exhaust: Visual check on smoke emission

Body

Panels: Visual check to see if there is any rust.

Trim: Visual check to see if there are any loose or missing components
Lights
Seat belts.

BOARD OF STUDIES
NEW SOUTH WALES

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(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

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A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

- Business loan
- Float the company to raise funds (shares)
- Own finances from saved profits
- Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
- Industry shows
- Internet
- Industry representatives
- Professional / trade publications

Evaluate:
- Demonstrations by manufacturers / sales representatives
- Investigate the technology in other work sites
- Publications/user feedback/reviews/internet
- Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

- Cheaper labour
- Cheaper materials and material costs/ closer to raw materials
- Less/different/favourable regulations
- Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
- Cheaper price of products
- A global product
- Better quality
- Taxation incentives
- Other overseas government incentives
- New facility —> more efficient facility

Negative impact
- Poor labour conditions (eg sweat shops)
- Negative environmental impact
- Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish
- Recruitment
- Training
- Management from IND-TECH to establish systems
- Use of cutting edge technology
- Automation
- Following specific IND-TECH guidelines/procedures

Monitor
- Automation
- Continual testing of materials
- Continual training of staff
- Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2

• Sketches in general terms ONE issue that may be included in an environmental impact statement OR • Lists issues	1

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
- allows for precise detailing of procedures and specifications
- can be combined with graphics photographs and charts to emphasise important information

Graphics
- allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
- good for quick reference guides

Photographs
- can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
- usually combined with text and graphics to highlight key information

Charts
- allow for easy cross referencing of information (tables)
- graphs allow for quick interpretation of information

Section II

Question 4 (a)

Outcomes assessed: H1.2

MARKING GUIDELINES

Criteria	Marks
• Gives TWO reasons why terrace houses are found in urban rather than rural Australia	2
• Gives ONE reason why terrace houses are found in urban rather than rural Australia	1

Sample answer/Answers could include:

- Terrace houses provide greater density in city
- Rural areas don't require high density housing

Question 4 (b)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides why and/or how local government regulations can impact on construction projects AND • Provides TWO or more examples	3
• Provides why and/or how local government regulations can impact on construction projects AND • Provides ONE example	2
• Identifies or lists a government regulation that could impact on construction projects. No examples provided	1

Sample answer/Answers could include:

• Waste removal	• Size
• Tree preservation	• Roofing material
• Landscaping	• Flora and fauna
• Access	• Visual intrusion
• Construction hours	• Colour
• Night restrictions	

Question 4 (c)

Outcomes assessed: H2.1

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of TWO or more methods a builder can use to secure a construction site	4
• Outlines TWO or more methods a builder can use to secure a construction site	3
• Outlines ONE method a builder can use to secure a construction site	2
• Names ONE method that can be used to secure a construction site	1

Sample answer/Answers could include:

• Fencing	• Hording
• Security lighting	• Lockup shed
• Guards	
• Alarm systems	
• Signage	

Question 4 (d)

Outcomes assessed: H1.2, H2.1

MARKING GUIDELINES

Criteria	Marks
• Recognises, names and provides characteristics and features of the operation of an appropriate tool that can be used to determine and transfer levels	4
• Recognises, names and outlines the operation of an appropriate tool that can be used to determine and transfer levels	3
• Recognises and names a tool that can be used to determine or transfer levels with limited reference to its operation	2
• Lists a tool that can be used to determine or transfer levels	1

Sample answer/Answers could include:

- Laser level – laser on tripod allows a direct level
- Dumpy level – optical method of transferring heights
- Line level
- Spirit level

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Identifies criteria and makes a good judgement on the options to renovate and knock down/rebuild	7
• Makes a judgement with some reference to identified criteria on the options to renovate and knock down/rebuild	5–6
• Outlines issues on the option to renovate and knock down/rebuild	3–4
• Outlines an issue which relates to either renovate or knock down/rebuild	1–2

Sample answer/Answers could include:

Renovation:
- keep existing structure
- keep front of home
- heritage listing

Knock down:
- new building
- use of new material
- better access
- new services

Question 5 (a)

Outcomes assessed: H3.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO types of drawings that are generally required when lodging a development application to local government	2
• Lists ONE type of drawing generally required when lodging a development application to local government	1

Sample answer/Answers could include:

- Site plan
- Architectural plans (Building plans)
- Drainage plan
- Shadow diagram
- Landscape/contour plan

Question 5 (b)

Outcomes assessed: H1.2, H3.2

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of THREE strategies home owners could employ to effectively reduce water consumption	3
• Indicates the main features of TWO strategies home owners could employ to effectively reduce water consumption OR • Identifies THREE methods of reducing water consumption	2
• Identifies a strategy home owners could employ to reduce water consumption	1

Sample answer/Answers could include:

- Install water tanks (recycle rainwater)
- Reuse grey water, eg toilet
- Drip irrigation
- Flow limiters in showers, etc
- Water-efficient appliances

Question 5 (c)

Outcomes assessed: H4.3, H6.1

MARKING GUIDELINES

Criteria	Marks
• Determines the value of TWO or more flooring materials for common use in domestic dwellings	4
• Determines the value of ONE flooring material and describes another to determine their suitability for common use in domestic dwellings	3
• Describes flooring materials suitable for common use in domestic dwellings, with limited evaluation	2
• Identifies a suitable flooring material	1

Sample answer/Answers could include:

- Solid timber aesthetically pleasing
- Manufactured boards cheaper
- Manufactured boards quicker to lay
- Solid timber expensive
- Click lock panels cheaper

Question 5 (d)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Supports an argument for using corrugated steel as a roofing material on commercial buildings	4
• Outlines reasons for using corrugated steel as a roofing material on commercial buildings	3
• Outlines reasons for using corrugated steel roofing	2
• Lists a reason for using steel roofing	1

Sample answer/Answers could include:

- Cost effective
- Easy to lay
- Low maintenance
- Attractive colours
- Easily repaired
- Lightweight
- Good weathering properties

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides why and/or how construction time can be reduced by considering materials, tools and equipment. TWO or more examples	7
• Describes characteristics and features how construction time can be reduced relating the cause and effect between examples of materials, tools and equipment to time. ONE example	5–6
• Indicates how construction time relates with either materials, tools or equipment	3–4
• Lists a range of materials, tools or equipment	1–2

Sample answer/Answers could include:

Materials – Pre-fabricated/large sheet material quicker to lay
Equipment – Use of cranes easier and quicker to lift
Tools – Concrete pumps/electric power tools/pneumatic tools

BOARD OF STUDIES
NEW SOUTH WALES

2008 HSC Industrial Technology
Electronics Industries
Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Industrial Technology Electronics Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

(1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and

(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The examination committee develops the marking guidelines concurrently with the examination paper. The 'Sample Answers' or similar advice are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

The information in the marking guidelines is further supplemented as required by the Supervisor of Marking and the senior markers at the marking centre.

A range of different organisations produce booklets of sample answers for HSC examinations, and other notes for students and teachers. The Board of Studies does not attest to the correctness or suitability of the answers, sample responses or explanations provided. Nevertheless, many students and teachers have found such publications to be useful in their preparation for the HSC examinations.

A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

– Business loan
– Float the company to raise funds (shares)
– Own finances from saved profits
– Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
– Industry shows
– Internet
– Industry representatives
– Professional / trade publications

Evaluate:
– Demonstrations by manufacturers / sales representatives
– Investigate the technology in other work sites
– Publications/user feedback/reviews/internet
– Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

– Cheaper labour
– Cheaper materials and material costs/ closer to raw materials
– Less/different/favourable regulations
– Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
– Cheaper price of products
– A global product
– Better quality
– Taxation incentives
– Other overseas government incentives
– New facility —> more efficient facility

Negative impact
– Poor labour conditions (eg sweat shops)
– Negative environmental impact
– Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish
- Recruitment
- Training
- Management from IND-TECH to establish systems
- Use of cutting edge technology
- Automation
- Following specific IND-TECH guidelines/procedures

Monitor
- Automation
- Continual testing of materials
- Continual training of staff
- Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2

• Sketches in general terms ONE issue that may be included in an environmental impact statement OR • Lists issues	1

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
– allows for precise detailing of procedures and specifications
– can be combined with graphics, photographs and charts to emphasise important information

Graphics
– allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
– good for quick reference guides

Photographs
– can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
– usually combined with text and graphics to highlight key information

Charts
– allow for easy cross referencing of information (tables)
– graphs allow for quick interpretation of information

Section II

Question 4 (a)

Outcomes assessed: H4.3

MARKING GUIDELINES

Criteria	Marks
• Correctly calculates the resistance	2
• Evidence of using Ohm's law OR error in calculations	1

Sample answer/Answers could include:

$$R = \frac{V}{I} = \frac{24V}{1.2A} = 20\Omega$$

Question 4 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of TWO different 12 volt power sources	3
• Identifies TWO power sources and provides characteristics and features of only ONE	2
• Identifies TWO power sources OR • Indicates the main features of ONE power source	1

Sample answer/Answers could include:

- Dry cell battery
- Wet cell battery
- 24V transformer (steps down to 12V)
- Solar cells
- Wind generator

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Provides an outline of the function of the induction coils to step up or step down the voltage, making reference to the number of windings on the primary and secondary coils	4
• Provides an outline of the function of the induction coils to step up or step down the voltage, making reference only to primary and secondary coils	3
• Provides an outline of the function of the induction coils to step up or step down the voltage, with no reference to primary and secondary coils	2
• Provides a basic outline of the induction coils	1

Sample answer/Answers could include:

A transformer includes a ferromagnetic core around which multiple coils, or windings, of wire are wrapped. The input line connects to the 'primary coils', while the output lines connect to 'secondary coils'. The voltage at each of the secondary coils is directly related to the primary voltage by the turns ratio, or the number of turns in the primary coil divided by the number of turns in the secondary coil. Thus, a transformer can be used to increase voltage, 'step up', (more turns on the secondary than the primary), or decrease voltage, 'step down' (more turns on the primary coil than the secondary), depending upon the amount of turns of wire in the primary and secondary coils.

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides, using a diagram, an explanation of how a variable capacitor operates, and gives a practical application of its use	4
• Provides characteristics and features of the workings of a variable capacitor with a diagram, and sketches in general terms an application of its use	3
• Outlines the workings of a variable capacitor with no diagram AND • Indicates the use of a variable capacitor OR • Provides a diagram with a limited understanding of how a variable capacitor works	2
• Sketches in general terms the workings of a variable capacitor OR • Indicates the use of a variable capacitor	1

Sample answer/Answers could include:

A variable capacitor works by altering the overlap between a fixed set of metal plates and a moving set, separated by a dielectric of air. Capacitance increases when the plates come closer, resulting from an increase in surface area of dielectric air. A practical application could be a tuner on a radio receiver.

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of each component AND • Relates cause and effect of the components in the circuit	7
• Provides characteristics and features of most components	5–6
• Relates cause and effect of the components in the circuit AND provides characteristics and features of some components	3–4
• Provides characteristics and features of TWO or more components	1–2

Sample answer/ Answers could include:

Solar panel – Provides power source/converts photons to electrical signals
Regulator – Regulates voltage/current to ensure a stable/safe supply
LDR – Switch when night-time. Low resistance at night, thus allowing current to flow to the light
Light – Illuminates at night when dark as it then receives current
Fuse – Protects components from excess current/short circuit

Battery – Rechargeable power source at night

Question 5 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Draws meaning from the information, linking 12V to 1.3Ah	2
• States the meaning of either 12V or 1.3Ah	1

Sample answer/Answers could include:

12 volts at 1 amp for 1.3 hours

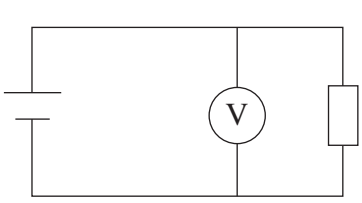
Question 5 (b)

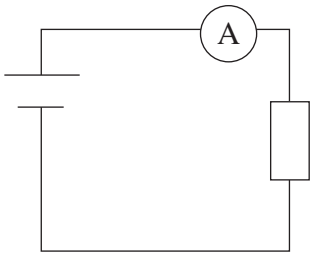
Outcomes assessed: H1.2, H2.1, H3.1

MARKING GUIDELINES

Criteria	Marks
• Correct placement of meters in diagrams and provides characteristics and features of the circuits	3
• Correct placement of meters in diagrams with no characteristics or features OR • Provides characteristics and features of using a voltmeter and ammeter to test a circuit	2
• Correct placement of a meter or some knowledge of 'In Series' or 'In Parallel'	1

Sample answer/Answers could include:





- Amp meter needs to be in series
- Volt meter needs to be in parallel

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Show how TWO methods of PCB manufacture are similar or different	4
• Provides characteristics and features of TWO different PCB manufacturing methods	3
• Identifies TWO different PCB manufacturing methods OR • Provides characteristics and features of ONE PCB manufacturing method	2
• Identifies ONE method of PCB manufacturing	1

Sample answer/Answers could include:

- Ferric chloride/Ammonium persulphate
- UV (light sensitive)
- Wave manufacturing (mass production)
- Vero board (prototypes)
- Press-n-peel sensitized laminate
- Software design using CAD
- PCB manufacture using CIM, CNC, CAM and robotics

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides a clear reason as to why heat shrink is used • Provides an accurate method of applying heat shrink	4
• Provides a clear reason as to why heat shrink is used • Demonstrates a limited understanding of how heat shrink is applied OR • Demonstrates a limited understanding as to why heat shrink is used • Provides an accurate method of how heat shrink is applied	3
• Provides a limited reason for using heat shrink • Provides a basic explanation of how heat shrink is applied	2
• Shows a limited understanding of heat shrink	1

Sample answer/Answers could include:

- Tidy, ordered, organised
- Insulation
- Safety
- Heat reduction
- Slide over wires prior to connecting after planning
- Apply heat eg via hot air (hair dryer)

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of a fault finding process for each component AND refers to the use of appropriate test equipment	7
• Provides characteristics and features of a fault finding process for most components AND refers to the use of appropriate test equipment	5–6
• Provides an outline of a fault finding process for some components AND some reference to testing equipment	3–4
• Identifies a fault finding process OR • Outlines the use of testing equipment	1–2

Sample answer/Answers could include:

- Continuity testing of battery connections using a multimeter – broken wire, polarity
- Continuity testing of switch using a multimeter – overheated when soldered in
- Use a multimeter to check the value of the resistor – incorrect size resistor could have been fitted, affecting the flow of effective current
- Faulty buzzer – replace buzzer with one that is known to be working
- Battery energy level – use a multimeter to check the voltage
- Use a voltmeter to check the voltage across components

BOARD OF STUDIES
NEW SOUTH WALES

2008 HSC Industrial Technology
Graphics Industries
Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Industrial Technology Graphics Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

(1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and

(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The examination committee develops the marking guidelines concurrently with the examination paper. The 'Sample Answers' or similar advice are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

The information in the marking guidelines is further supplemented as required by the Supervisor of Marking and the senior markers at the marking centre.

A range of different organisations produce booklets of sample answers for HSC examinations, and other notes for students and teachers. The Board of Studies does not attest to the correctness or suitability of the answers, sample responses or explanations provided. Nevertheless, many students and teachers have found such publications to be useful in their preparation for the HSC examinations.

A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

– Business loan
– Float the company to raise funds (shares)
– Own finances from saved profits
– Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
– Industry shows
– Internet
– Industry representatives
– Professional / trade publications

Evaluate:
– Demonstrations by manufacturers / sales representatives
– Investigate the technology in other work sites
– Publications/user feedback/reviews/internet
– Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

– Cheaper labour
– Cheaper materials and material costs/ closer to raw materials
– Less/different/favourable regulations
– Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
– Cheaper price of products
– A global product
– Better quality
– Taxation incentives
– Other overseas government incentives
– New facility —> more efficient facility

Negative impact
– Poor labour conditions (eg sweat shops)
– Negative environmental impact
– Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish
- Recruitment
- Training
- Management from IND-TECH to establish systems
- Use of cutting edge technology
- Automation
- Following specific IND-TECH guidelines/procedures

Monitor
- Automation
- Continual testing of materials
- Continual training of staff
- Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2
• Sketches in general terms ONE issue that may be included in an	1

environmental impact statement OR • Lists issues	

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
– allows for precise detailing of procedures and specifications
– can be combined with graphics, photographs and charts to emphasise important information

Graphics
– allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
– good for quick reference guides

Photographs
– can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
– usually combined with text and graphics to highlight key information

Charts
– allow for easy cross referencing of information (tables)
– graphs allow for quick interpretation of information

Section II

Question 4 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Provides TWO benefits of using models	2
• Provides ONE benefit of using models	1

Sample answer/Answers could include:

- Presentation of a copy of the end product
- Promotional and selling aspects
- Enlarged or reduced at the actual size
- Evaluation and testing aspects
- Prototype during early stages of development (reduces costs of production)
- To evaluate form of the structure
- To evaluate its suitability in the surrounding environment
- Easily understood by non-technical viewers

Question 4 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Identifies more than one issue and provides points for and/or against, in relation to using two-dimensional freehand sketches in communicating design ideas	3
• Identifies an issue and provides points for and/or against, in relation to using two-dimensional freehand sketches in communicating design ideas OR • Identifies TWO issues or provides points for and/or against, in relation to using two-dimensional sketches in communicating design ideas	2
• Identifies ONE issue OR • Provides a point for or against in relation to using two-dimensional sketches in communicating design ideas	1

Sample answer/Answers could include:

Two-dimensional sketches

- Size and dimensional details could be shown
- Can view from a variety of individual faces/angles
- Drawn accurately to scale therefore displays exact proportion
- Finer details and features can be presented
- Part of the ongoing design process
- Sectioned/auxiliary or part views

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of TWO issues that confront graphic designers who work many hours in front of a computer monitor	4
• Indicates the main features of ONE issue and identifies one feature of another issue that confront graphic designers who work many hours in front of a computer monitor	3
• Indicates the main features of ONE issue that confronts graphic designers OR • Identifies TWO issues	2
• Identifies ONE issue	1

Sample answer/Answers could include:

OHS Issues:
Ergonomic issues related to work environment
Desk, chairs, hardware/software, screen, keyboard (work routine) indoor climate

Computers can cause health problems/issues
Eyestrain, headaches, backaches, fatigue, muscle pain, repetitive strain injury (RSI)
Circulation problems due to inadequate movement
Electromagnetic radiation exposure (lighting in workplace).

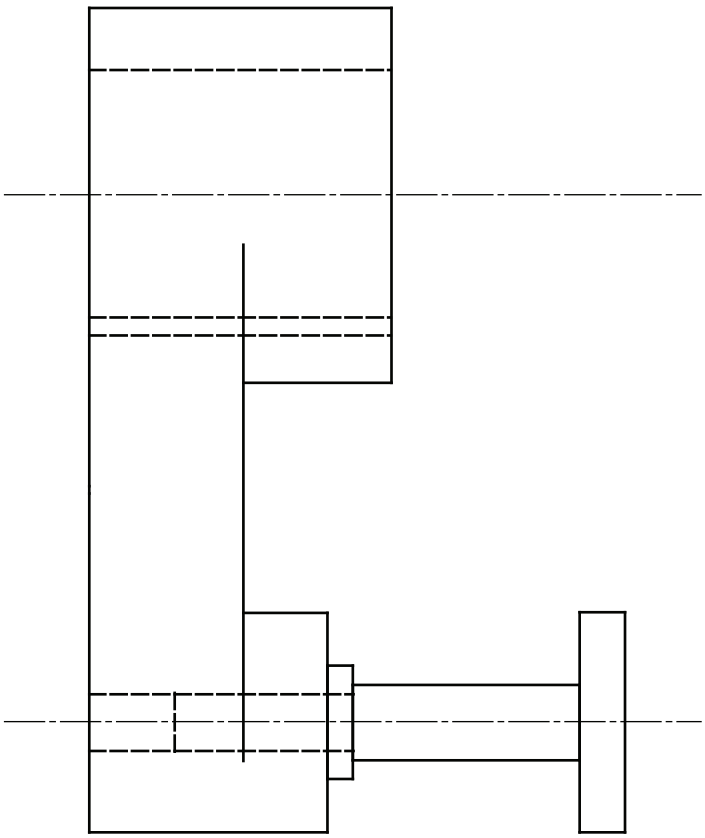
Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Completes the sketch to show the body, washer, handle and hidden-line details	4
• Completes the sketch to show any THREE of the body, washer, handle or hidden-line details	3
• Incomplete sketch showing the body, washer and handle are badly aligned or with parts missing OR • Incomplete sketch with only TWO of the body, washer, handle or hidden-line details shown correctly	2
• Incomplete sketch with only ONE of the body, washer, handle and hidden-line details shown correctly OR • Partial details sketched correctly	1

Sample answer/Answers could include:



Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides a detailed response that determines the value of TWO or more computer technologies that could be used to develop and present a proposal to council	7
• Indicates TWO or more computer technologies. Determines the value of ONE and describes the other of these technologies to develop and present a proposal to council	5–6
• Determines the value of ONE technology and describes its contribution to the proposal or submission to council OR • Determines the value of ONE computer technology that could be used to develop and present a proposal to council	3–4
• Describes a technology that could be used to develop or present a proposal to council	1–2

Sample answer/Answers could include:

1. CAD software: conceptual and pictorial presentations drawings 20/30
2. Modelling – software
3. Software – fly-over, walk/fly through etc, network connections/also internet/e-mail connections
4. Cross platform technology
5. Hardware
6. Laser colour/plotter printers
7. DVD/CD presentation
8. Large LCD screens
9. Powerful processors
10. Digitiser boards
11. GPS
12. Survey technology

Question 5 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Gives TWO reasons why designers use three-dimensional drawings	2
• Gives ONE reason why designers use three-dimensional drawings	1

Sample answer/Answers could include:

Three-dimensional sketches
1. To convey original design concept
2. Overall size and proportional image
3. A more pictorial and visual image can be presented
4. Initial design process/concept could use 3D
5. Overall displays the form and proportion of the concept and shows its (pictorial) appearance

Question 5 (b)

Outcomes assessed: H1.2, H3.1, H5.1, H6.2

MARKING GUIDELINES

Criteria	Marks
• Provides TWO or more advantages of rendering as a presentation technique related to the graphics industry	3
• Provides ONE advantage of rendering as a presentation technique in the graphics industry	2
• Provides an issue related to rendering	1

Sample answer/Answers could include:

- Improved visualisation image
- Can enhance and highlight features on concepts/drawings
- Aesthetically pleasing for promotional purposes
- Focus on specific areas of a concept/image in various mediums
- Variety of textured images for presentation
- 3D pictorial views – shade, tone etc
- Gives appearance of various materials (to increase attractiveness/colour)

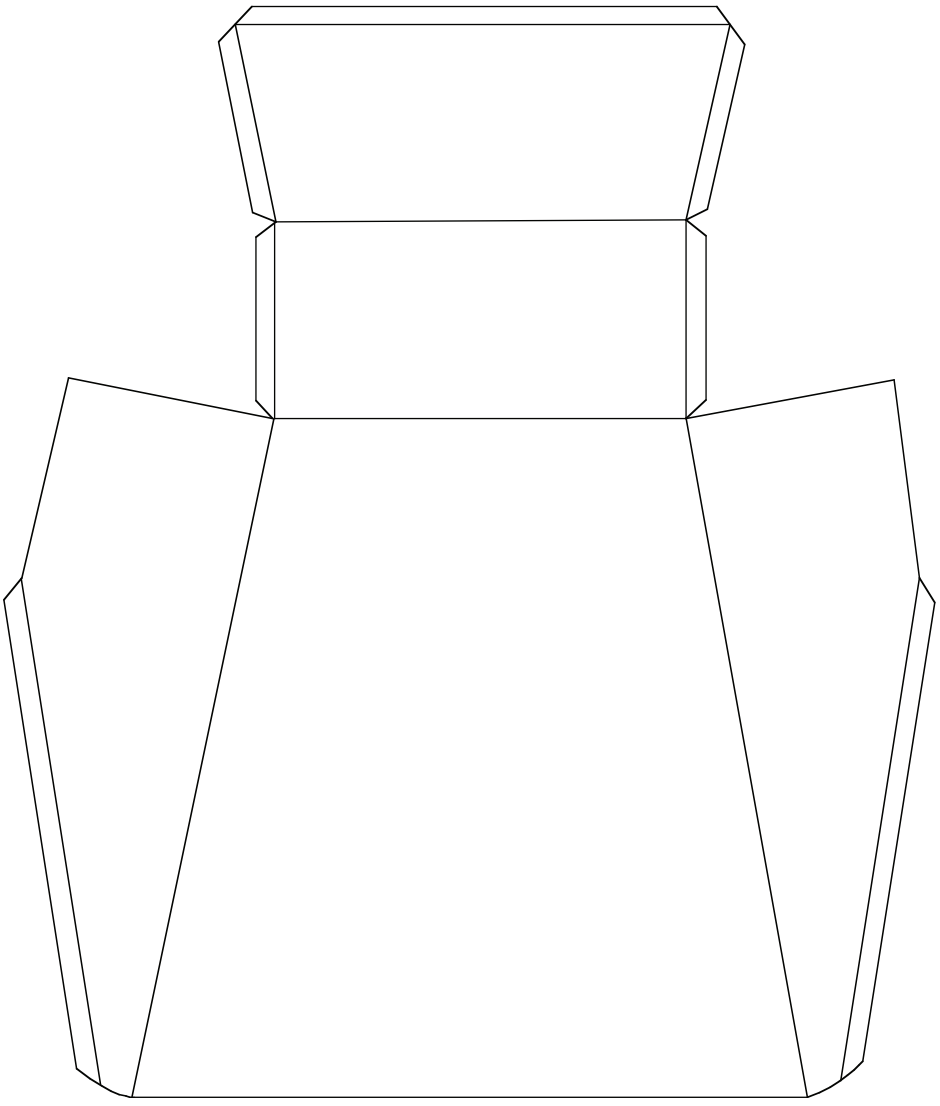
Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• A good development sketch of the dust pan body, showing all folded edges (tabs) and drawn in proportion	4
• A development sketch of the dust pan body, not showing folded edges (tabs) but drawn in proportion OR • A development sketch of the dust pan body, showing folded edges (tabs) but not drawn in proportion	3
• A development sketch of the dust pan body not showing folded edges (tabs) and not in proportion	2
• A poor development sketch of the dust pan body	1

Sample answer/Answers could include:



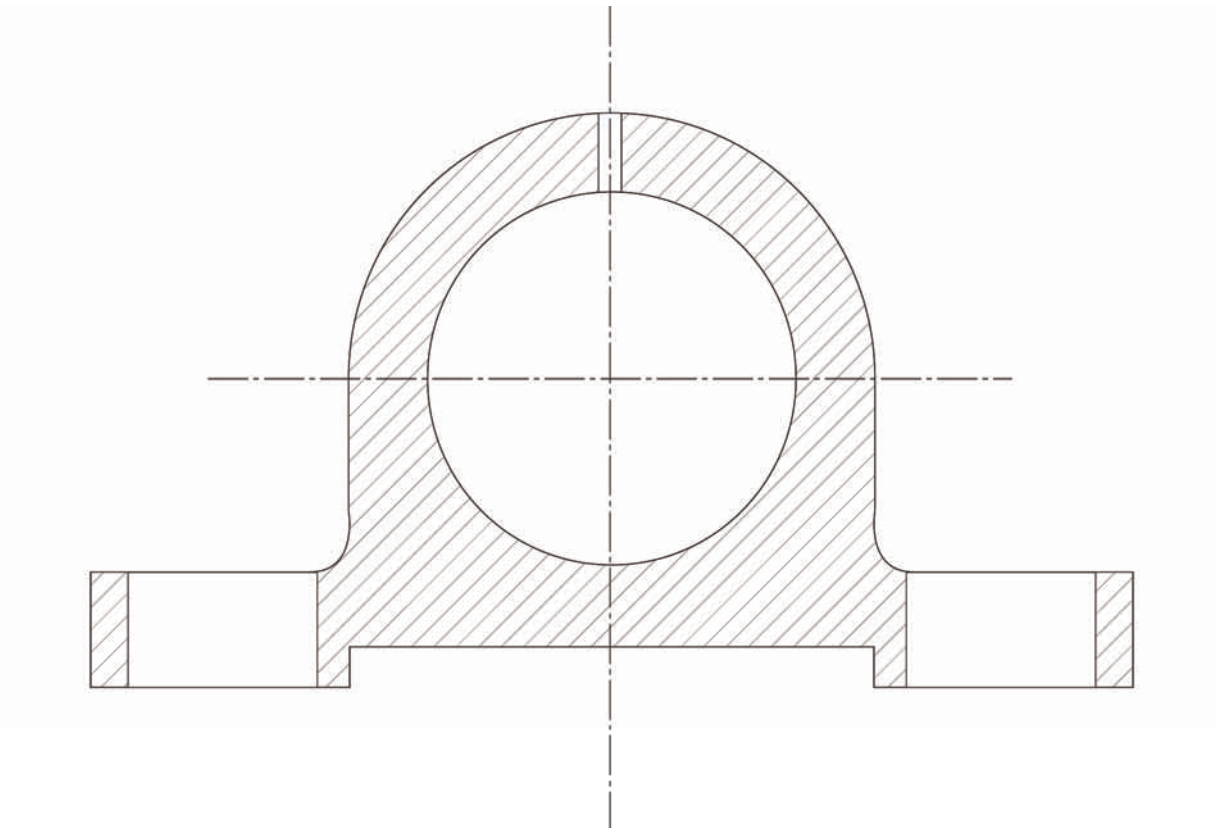
Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Completes the full sectional front sketch. Indicates all details, overall shape, correct sectioned area and drawn in correct proportion	4
• Completes the full sectional front sketch. Indicates THREE of: overall shape, correct sectioned area, all details and drawn in correct proportion	3
• Incomplete sketch with only TWO of: overall shape, correct sectioned area, all details and drawn in correct proportion	2
• Incomplete sketch with only ONE of: overall shape, correct sectioned area, all details and drawn in correct proportion OR • Partial or correct detailed sketch	1

Sample answer/Answers could include:



Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features AND determines the value of TWO or more drawing types in the design and manufacture of products	7
• Provides characteristics and features OR determines the value of TWO or more drawing types in the design and manufacture of products	5–6
• Provides characteristics and features AND determines the value of ONE drawing type in the design AND manufacture of products OR • Provides characteristics and features and determines the value of TWO drawing types in the design OR manufacturing of products	3-4
• Provides characteristics and features and determines the value of ONE drawing type in the design OR manufacturing of products OR • Indicates the main features of ONE drawing type	1–2

Sample answer/Answers could include:

CAD – used in design, converted to machine code for manufacturing
Pictorial Drawings
– Perspective: parallel (one point), angular (two point)
– Isometric
– Sketching
– Oblique – general/planometric/axonometric

Engineering drawings
– Orthogonal–orthographic
– 1st/3rd angle
– Section view
– Assembly/exploded view
– Developments
– Mechanical
– Detail/working
– Architectural drawing

Freehand drawings
– 2D and 3D
– Orthogonal
– Isometric
– Rendering

Product drawings
– Freehand sketching
– Indicates form, proportion and function
– Orthogonal
– Rendering: texture, colour etc
– Perspective
– Section view
– Exploded pictorial

BOARD OF STUDIES
NEW SOUTH WALES

2008 HSC Industrial Technology Metals and Engineering Industries Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Industrial Technology Metals and Engineering Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

(1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and

(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

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A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

- Business loan
- Float the company to raise funds (shares)
- Own finances from saved profits
- Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
- Industry shows
- Internet
- Industry representatives
- Professional / trade publications

Evaluate:
- Demonstrations by manufacturers / sales representatives
- Investigate the technology in other work sites
- Publications/user feedback/reviews/internet
- Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

- Cheaper labour
- Cheaper materials and material costs/ closer to raw materials
- Less/different/favourable regulations
- Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
- Cheaper price of products
- A global product
- Better quality
- Taxation incentives
- Other overseas government incentives
- New facility —> more efficient facility

Negative impact
- Poor labour conditions (eg sweat shops)
- Negative environmental impact
- Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish
- Recruitment
- Training
- Management from IND-TECH to establish systems
- Use of cutting edge technology
- Automation
- Following specific IND-TECH guidelines/procedures

Monitor
- Automation
- Continual testing of materials
- Continual training of staff
- Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2

• Sketches in general terms ONE issue that may be included in an environmental impact statement OR • Lists issues	1

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
- allows for precise detailing of procedures and specifications
- can be combined with graphics, photographs and charts to emphasise important information

Graphics
- allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
- good for quick reference guides

Photographs
- can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
- usually combined with text and graphics to highlight key information

Charts
- allow for easy cross referencing of information (tables)
- graphs allow for quick interpretation of information

Section II

Question 4 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates the wall thickness AND inside diameter	2
• Correctly indicates the wall thickness OR inside diameter	1

Sample answer/Answers could include:

- 2 mm wall
- 26 mm inside diameter

Question 4 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of a method of producing pairs of identical scrolls	3
• Provides characteristics and features of a method of producing pairs of scrolls OR • Provides features of a method of producing pairs of identical scrolls	2
• Provides a characteristic or a feature of a method of producing scrolls	1

Sample answer/Answers could include:

- Forming jig – manufactured jig specifically made to bend the scrolls. The metal is bent around a formed shape. The metal is cut to the same length before bending occurs to produce identical pairs. The metal is bent cold to minimize distortion
- Secure in scroll bender, form desired scroll to a predetermined setting, repeat exact process for subsequent scrolls after metal has been cut to exact lengths. This is quick and accurate.

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Provides a detailed explanation of how to manufacture the end caps AND names the tools involved	4
• Provides a detailed explanation of how to manufacture the end caps AND provides limited names of the tools involved OR • Provides a brief explanation of how to manufacture the end caps AND names the tools involved	3
• Outlines how to manufacture the end caps OR • Names the tools involved OR • Provides a feature of the processes involved to manufacture the end caps AND provides a name of a tool involved	2
• Provides a feature of a process involved to manufacture the end caps OR • Provides a name of a tool used to manufacture the end caps	1

Sample answer/Answers could include:

- Face the end on the lathe with a facing tool
- Parallel turn the knob (spigot) measuring with either calipers, verniers or micrometer
- Hold turned end in chuck
- Form turn the end using a profile/form tool manufactured to required shape
- Set up blank in CNC lathe
- Start lathe which has been programmed to profile cut the correct shape
- Both end caps will be produced to the same shape

Question 4 (d)

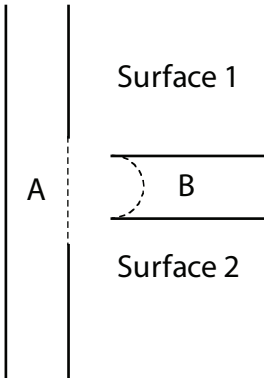
Outcomes assessed: H1.2, H3.1, H3.2, H4.3, H5.1

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of an appropriate method of preparing the tube with a correct sketch	4
• Provides some characteristics and features of an appropriate method of preparing the tube with a correct sketch	3
• Provides some characteristics and features of an appropriate method OR • Correct sketch	2
• Incomplete sketch with at least ONE part correctly prepared OR • Provides a characteristic or feature of suitably prepared mild steel tube	1

Sample answer/Answers could include:

- Scale to be removed from both pieces to enable correct penetration
- The end of the tube can be shaped to allow for a close fit prior to welding, either by filing or using a grinder
- The tube can be prepared by closing one end to allow the required gap for welding



Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics AND features of an appropriate method of attaching the shelf, end caps and the scrolls to the frame. Provides correct sketches of attaching the shelf, end caps and the scrolls to the frame	7
• Provides some characteristics OR features of an appropriate method of attaching the shelf, end caps and the scrolls to the frame AND • Provides correct sketches of attaching the shelf, end caps and the scrolls to the frame	5–6
• Outlines appropriate methods of attaching the timber shelf, end caps and the scrolls to the frame without sketches OR • Provides correct sketches of attaching the shelf, end caps and the scrolls to the frame	3–4
• Outlines an appropriate method of attaching the timber shelf OR end caps OR scrolls OR provides sketches	1–2

Sample answer/Answers could include:

Timber Shelf

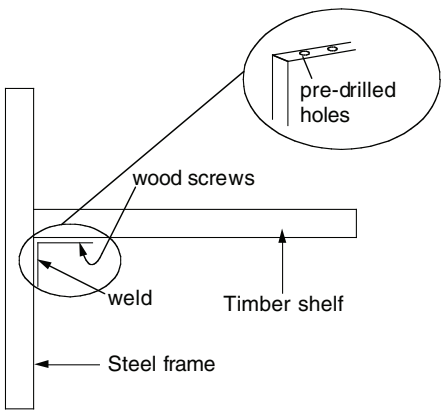
- Small tabs welded to the frame with holes in which screws will be used to anchor the shelf
- Screws at regular intervals used to secure shelf through the metal frame

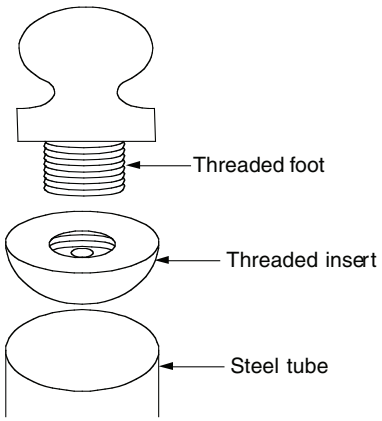
Brass End Cap

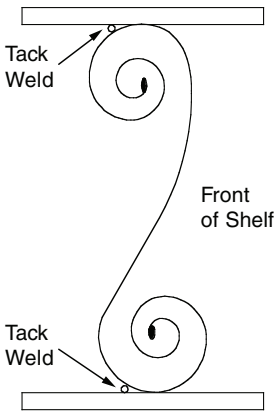
- Friction fit where the knob is tapped into the tube end
- A small pin or rivet drilled and inserted through the tube into the brass knob
- Threaded

Scroll

- Arc, MIG, brazed, silver solder scrolls to frame







Question 5 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Lists TWO suitable materials	2
• Lists ONE suitable material	1

Sample answer/Answers could include:

- Mild steel
- Bright mild steel

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Names a suitable method AND provides characteristics and features of a suitable method for fixing the shaft to the handle	3
• Names a suitable method AND provides some characteristics and features of a suitable method for fixing the shaft to the handle OR • Provides characteristics and features of a suitable method for fixing the shaft to the handle	2
• Indicates a feature or characteristic of fixing the shaft to the handle OR • Names a suitable method	1

Sample answer/Answers could include:

- Sweating
- Brazing
- Silver solder
- The shaft is to be inserted into the handle. The metal heated to the appropriate temperature with solder and flux added

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the process of cutting the taper AND correctly identifies the adjustments to be made to the lathe	4
• Provides some characteristics and features of cutting the taper AND correctly identifies the adjustments to be made to the lathe	3
• Outlines some characteristics and features of the process of cutting the taper AND correctly identifies some of the adjustments to be made OR • Provides characteristics and features of the process of cutting the taper OR • Correctly identifies the adjustments to be made to the lathe	2
• Sketches in general terms the process of cutting the taper OR • Identifies some of the adjustments to be made	1

Sample answer/Answers could include:

- Adjust compound slide to 7.5°, lock compound slide into place. Lock carriage into place. Adjust desired depth by cross slide. Cut taper using compound slide
- Adjusting tailstock
- Using a taper turning attachment

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides reasons in favour of a suitable industrial process that can be applied	4
• Provides a reason in favour of a suitable industrial process that can be applied	3
• Provides characteristics and features of a suitable industrial process	2
• Names or lists a suitable industrial process	1

Sample answer/Answers could include:

Case hardening – Carbon content increased in the surface layer. The head is heated to cherry red dipped in case hardening compound (high in carbon), and allowed to cool a little, then heated again to a cherry red and quenched in cold, clean water.

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Determines the value of a range of materials and industrial processes used to manufacture all components of the hammer	7
• Determines the value of a range of materials and industrial processes used to manufacture some components of the hammer	5–6
• Outlines a range of materials or industrial processes used to manufacture the hammer	3–4
• Sketches in general terms some materials or processes	1–2

Sample answer/Answers could include:

- Drop forging of head
- Induction hardening of head
- CNC lathe for handle/shaft
- Free machining steel for handle/shaft
- Nitriding of head
- Use of appropriate steel for head
- New handle material ie wood/fibreglass

BOARD OF STUDIES
NEW SOUTH WALES

2008 HSC Industrial Technology Multimedia Industries Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Industrial Technology Multimedia Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

(1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and

(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The examination committee develops the marking guidelines concurrently with the examination paper. The 'Sample Answers' or similar advice are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

The information in the marking guidelines is further supplemented as required by the Supervisor of Marking and the senior markers at the marking centre.

A range of different organisations produce booklets of sample answers for HSC examinations, and other notes for students and teachers. The Board of Studies does not attest to the correctness or suitability of the answers, sample responses or explanations provided. Nevertheless, many students and teachers have found such publications to be useful in their preparation for the HSC examinations.

A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

BOARD OF STUDIES
NEW SOUTH WALES

2008 HSC Industrial Technology
Multimedia Industries
Marking Guidelines

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

- Business loan
- Float the company to raise funds (shares)
- Own finances from saved profits
- Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
- Industry shows
- Internet
- Industry representatives
- Professional / trade publications

Evaluate:
- Demonstrations by manufacturers / sales representatives
- Investigate the technology in other work sites
- Publications/user feedback/reviews/internet
- Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

- Cheaper labour
- Cheaper materials and material costs/ closer to raw materials
- Less/different/favourable regulations
- Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
- Cheaper price of products
- A global product
- Better quality
- Taxation incentives
- Other overseas government incentives
- New facility —> more efficient facility

Negative impact
- Poor labour conditions (eg sweat shops)
- Negative environmental impact
- Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish – Recruitment
– Training
– Management from IND-TECH to establish systems
– Use of cutting edge technology
– Automation
– Following specific IND-TECH guidelines/procedures

Monitor – Automation
– Continual testing of materials
– Continual training of staff
– Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2
• Sketches in general terms ONE issue that may be included in an environmental impact statement OR • Lists issues	1

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
- allows for precise detailing of procedures and specifications
- can be combined with graphics, photographs and charts to emphasise important information

Graphics
- allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
- good for quick reference guides

Photographs
- can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
- usually combined with text and graphics to highlight key information

Charts
- allow for easy cross referencing of information (tables)
- graphs allow for quick interpretation of information

Section II

Question 4 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Names TWO types of storyboard	2
• Names ONE type of storyboard	1

Sample answer/Answers could include:

- Linear
- Non-linear
- Hierarchical
- Combination
- Sequential
- Narrative

Question 4 (b)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Shows how TWO different formats are similar or different	3
• Outlines TWO different formats OR • Describes ONE format	2
• Names an audio file format	1

Sample answer/Answers could include:

- JPEG
- GIF
- TIFF
- PICT
- EPS
- WMF
- Lossy
- Lossless

Question 4 (c)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Determines the value of TWO types of audio file formats	4
• Determines the value of ONE audio file format and outlines the features of another audio file format	3
• Outlines the features of TWO audio file formats	2
• Names an audio file format	1

Sample answer/Answers could include:

- WAV
- Midi
- MP3

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of TWO methods that can be used to back up data	4
• Provides characteristics and features of ONE method that can be used to back up data and outlines a second method that can be used to back up data	3
• Outlines TWO methods that can be used to back up data	2
• Lists ONE method that can be used to back up data OR • Lists a piece of hardware that can be used to back up data	1

Sample answer/Answers could include:

- Tape back-up
- External HDD
- Flash Drive
- CD
- DVD

Question 4 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of the processes in the design and production of the website	7
• Provides characteristics and features of some processes in the design and production of the website	5–6
• Provides a characteristic and feature of TWO processes in the design and production of the website OR • Provides TWO characteristics and features of ONE process in the design and production of the website	3–4
• Provides ONE characteristic and feature of a process in the design or production of the website OR • Lists some steps in the design and/or production process	1–2

Sample answer/Answers could include:

- Define requirements
- Quote
- Content
- Plan
- Development and test
- Acceptance
- Publish
- Promote
- Maintain

Question 5 (a)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Indicates the main features of morphing	2
• Indicates a feature of morphing	1

Sample answer/Answers could include:

- Smooth changes between different images
- Transforms shapes, sizes, dimensions, colours

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms a possible cause AND solution to the problem	3
• Sketches in general terms a possible cause OR solution to the problem	2
• Identifies a possible cause OR solution to the problem	1

Sample answer/Answers could include:

Possible causes:

- Compatibility problems between browsers
- Created a series of web pages at home, not a 'project', hyperlinks point to pages on the home computer
- Compatibility problems with software

Question 5 (c)

Outcomes assessed: H3.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of ethical AND copyright issues	4
• Provides a characteristic and feature of an ethical and copyright issue involved in the decision and outlines ONE ethical or copyright issue	3
• Outlines ethical and copyright issues OR • Provides a characteristic and feature of a copyright or ethical issue	2
• Outlines an ethical or copyright issue	1

Sample answer/Answers could include:

- Ethical issues/what is right and wrong
- Equity and access
- Copyright laws

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of TWO appropriate animation techniques	4
• Provides characteristics and features of ONE appropriate animation technique and outlines a second appropriate animation technique	3
• Provides characteristics and features of ONE appropriate animation technique OR • Outlines TWO appropriate animation techniques	2
• Outlines OR names ONE appropriate animation technique	1

Sample answer/Answers could include:

- Cell-based
- Path-based with tweening

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Identifies issues and provides points for and/or against advances in technology that have made video conferencing utilising the world wide web possible	7
• Identifies issues and provides a point for and/or against advances in technology that have made video conferencing utilising the world wide web possible	5–6
• Provides characteristics and features of advances in technology that have made video conferencing utilising the world wide web possible	3–4
• Provides characteristics and features of advances in technology	1–2

Sample answer/Answers could include:

- Camera
- Visual display
- Audio
- Compression (codecs)
- User interface and control
- Network connection ISDN (benefit), IP (negatives)
- Software (eg Skype)

BOARD OF STUDIES
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2008 HSC Industrial Technology Timber and Furniture Industries Marking Guidelines

The following marking guidelines were developed by the examination committee for the 2008 HSC examination in Industrial Technology Timber and Furniture Industries, and were used at the marking centre in marking student responses. For each question the marking guidelines are contained in a table showing the criteria associated with each mark or mark range. For some questions, 'Sample Answers' or 'Answers may include' sections are included. These are developed by the examination committee for two purposes. The committee does this:

(1) as part of the development of the examination paper to ensure the questions will effectively assess students' knowledge and skills, and

(2) in order to provide some advice to the Supervisor of Marking about the nature and scope of the responses expected of students.

The examination committee develops the marking guidelines concurrently with the examination paper. The 'Sample Answers' or similar advice are not intended to be exemplary or even complete answers or responses. As they are part of the examination committee's 'working document', they may contain typographical errors, omissions, or only some of the possible correct answers.

The information in the marking guidelines is further supplemented as required by the Supervisor of Marking and the senior markers at the marking centre.

A range of different organisations produce booklets of sample answers for HSC examinations, and other notes for students and teachers. The Board of Studies does not attest to the correctness or suitability of the answers, sample responses or explanations provided. Nevertheless, many students and teachers have found such publications to be useful in their preparation for the HSC examinations.

A copy of the Mapping Grid, which maps each question in the examination to course outcomes and content as detailed in the syllabus, is also included.

Section I

Question 1 (a)

Outcomes assessed: H1.1, H3.2

MARKING GUIDELINES

Criteria	Marks
• Recognises and names TWO sources of finance used to fund the establishment of an overseas facility	2
• Recognises and names ONE source of finance used to fund the establishment of an overseas facility	1

Sample answer/Answers could include:

– Business loan
– Float the company to raise funds (shares)
– Own finances from saved profits
– Overseas Government incentives

Question 1 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Indicates how IND-TECH can locate and evaluate an emerging technology	3
• Indicates how IND-TECH can locate OR evaluate an emerging technology	2
• Indicates an understanding of an emerging technology	1

Sample answer/Answers could include:

Locate:
– Industry shows
– Internet
– Industry representatives
– Professional / trade publications

Evaluate:
– Demonstrations by manufacturers / sales representatives
– Investigate the technology in other work sites
– Publications/user feedback/reviews/internet
– Professional consultants

Question 1 (c)

Outcomes assessed: H1.1, H1.2, H3.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Relates the cause and effect of TWO or more issues that may have influenced the decision to establish the overseas facility	4
• Recognises and names TWO issues and relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility	3
• Relates the cause and effect of ONE issue that may have influenced the decision to establish the overseas facility OR • Recognises and names TWO issues that may have influenced the decision to establish the overseas facility	2
• Recognises or names ONE issue that may have influenced the decision to establish the overseas facility	1

Sample answer/Answers could include:

– Cheaper labour
– Cheaper materials and material costs/ closer to raw materials
– Less/different/favourable regulations
– Establishment costs for IND-TECH may be lower

Question 1 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides ways in which the introduction of the new facility could affect the marketability of IND-TECH products	4
• Provides ONE way in which the introduction of the new facility could affect the marketability of IND-TECH products	3
• Provides ONE way in which the introduction of the new facility could affect IND-TECH products	2
• Provides some understanding of marketability	1

Sample answer/Answers could include:

Positive impact
– Cheaper price of products
– A global product
– Better quality
– Taxation incentives
– Other overseas government incentives
– New facility —> more efficient facility

Negative impact
– Poor labour conditions (eg sweat shops)
– Negative environmental impact
– Poor quality control

Question 1 (e)

Outcomes assessed: H1.1, H1.2, H3.1, H5.2, H6.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement based on criteria for TWO strategies that can be implemented to establish and monitor the required quality	7
• Makes a judement based on criteria for TWO strategies that can be used to monitor the required quality and identifies ONE strategy for implementing the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to implement the required quality and identifies ONE strategy for monitoring	5–6
• Makes a judgement based on criteria for ONE strategy that can be implemented to establish and monitor the required quality OR • Makes a judgement based on criteria for TWO strategies that can be used to establish OR monitor the required quality OR • Identifies strategies that can be used to establish and monitor the required quality	3–4
• Identifies a relevant quality strategy	1–2

Question 1 (e) (continued)

Sample answer/Answers could include:

Establish
- Recruitment
- Training
- Management from IND-TECH to establish systems
- Use of cutting edge technology
- Automation
- Following specific IND-TECH guidelines/procedures

Monitor
- Automation
- Continual testing of materials
- Continual training of staff
- Use of consultants eg mechanical engineers to continually review quality control processes.

Question 2 (a)

Outcomes assessed: H1.1, H7.1

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO issues that may be included in an environmental impact statement	2
• Sketches in general terms ONE issue that may be included in an environmental impact statement OR • Lists issues	1

Sample answer/Answers could include:

- An environmental impact statement describes the effects (both good and bad) the company will have on the environment.
- Issues: local communities, waterways, animals, trees, air quality.

Question 2 (b)

Outcomes assessed: H1.1, H1.2, H7.1

MARKING GUIDELINES

Criteria	Marks
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important for establishing a new business facility	3
• Gives an appropriate reason why an effective occupational health and safety (OHS) policy is important to business in general	2
• Displays an understanding of an occupational health and safety (OHS) policy	1

Sample answer/Answers could include:

- The policy will ensure working conditions, physical environment and correct working practices are in place prior to the company starting manufacture which ensures employee safety.
- Guarding of machinery, material handling procedures, working hours, dust and fume extraction.

Question 2 (c)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Provides ways by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	4
• Provides ONE way by which INT-TECH could ensure equal employment opportunity (EEO) principles are followed in the recruitment of new staff	3
• Provides ONE way by which IND-TECH could ensure equal employment opportunity (EEO) principles are followed in the workforce	2
• Shows some understanding of equal employment opportunity (EEO) principles	1

Sample answer/Answers could include:

Wording of any advertising to be non discriminatory.
Having a recruitment officer who is well versed in all equal employment opportunity (EEO) principles.
Selection could be by resume first then by interview.
Have an interview panel and not just one person.
Have an interview panel that has balance in the personnel (ie male, female)

Question 2 (d)

Outcomes assessed: H1.1, H1.2

MARKING GUIDELINES

Criteria	Marks
• Makes a judgement or determines the value of TWO or more computing applications that could be used to maintain communication	4
• Makes a judgement or determines the value of ONE computing application AND identifies another computing application that could be used to maintain communication	3
• Makes a judgement or determines the value of ONE computing application OR • Identifies TWO or more applications that could be used to maintain communication	2
• Identifies ONE computing application that could be used to maintain communication	1

Sample answer/Answers could include:

- Internet, web page, email
- Tele-conferencing, web cams, eg 'Skype', Gizmo project
- Chat rooms, forums.

Question 2 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from BOTH IND-TECH's and the employees' perspective	7
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective with some implications from the employees' perspective OR • Draws out and relates the implications of relocating some employees overseas to assist in the setting up and training of staff from the employees' perspective with some implications from IND-TECH's perspective	5–6
• Draws out and relates the implications of relocating some employees oversees to assist in the setting up and training of staff from IND-TECH's perspective OR the employees' perspective	3–4
• Relates an implication on IND-TECH OR the employees as a result of the relocation overseas	1–2

Sample answer/Answers could include:

- Cost of going overseas, learning the language/customs, establishing spouse family's school
- 'Rewards' for going, eg promotion, increase salary, free trips home.

Question 3 (a)

Outcomes assessed: H1.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Lists TWO appropriate software applications	2
• Lists ONE appropriate software application	1

Sample answer/Answers could include:

Excel, MYOB, Spreadsheet, Word, Office, Powerpoint

Question 3 (b) (i)

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

MARKING GUIDELINES

Criteria	Marks
• Accurately graphs using all information	2
• Plots some points correctly	1

Question 3 (b) (ii)

Outcomes assessed: H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Correctly indicates when overseas costs will match local costs	1

Sample answer/Answers could include:

2011

Question 3 (b) (iii)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features for the trends in the graph for local and overseas production costs	4
• Provides characteristics and features for the trends in the graph for local production costs AND provides a characteristic or feature for overseas production costs OR • Provides characteristics and features for the trends in the graph for overseas production costs AND provides a characteristic or feature for local production costs	3
• Provides a characteristic or a feature for the trends for local AND overseas production costs	2
• Provides a characteristic or a feature for trends in the graph for local or overseas production costs	1

Sample answer/Answers could include:

Local production costs continuously increase from 2007 to 2016 (at varying rates). Overseas production costs decrease every year from 2009 to 2012, before increasing every year from 2012 to 2016.

Question 3 (b) (iv)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms TWO or more factors to be considered when predicting production costs	4
• Sketches in general terms ONE factor AND lists ONE or more factors to be considered when predicting production costs	3
• Sketches in general terms ONE factor or lists TWO factors to be considered when predicting production costs	2
• Lists ONE factor to be considered when predicting production costs	1

Sample answer/Answers could include:

Movements in – wages, raw material costs and supply, maintenance costs, asset replacement, exchange rates, tax and tariff changes, changes to local and overseas governments, government policy, demand, competition, new technology, interest rates, global economy, environmental influences (carbon tax etc).

Question 3 (c)

Outcomes assessed: H1.1, H2.1, H3.1, H5.1

MARKING GUIDELINES

Criteria	Marks
• Makes the relationship evident between the purpose of the manual and all listed forms of presenting the information	7
• Makes the relationship evident between the purpose of the manual and THREE forms of presenting the information	5–6
• Provides characteristics and features of THREE or more forms of presenting the information OR • Provides characteristics and features of some forms of presenting the information AND indicates some features of the operations manual	3–4
• Indicates the main features of the forms for presenting the information OR • Indicates the main features of the operations manual	1–2

Sample answer/Answers could include:

Text
– allows for precise detailing of procedures and specifications
– can be combined with graphics, photographs and charts to emphasise important information

Graphics
– allow quick and easy interpretation when manual is to be used by employees with differing language requirements (internationally recognised symbols)
– good for quick reference guides

Photographs
– can depict exact demonstrations of setup, procedures, final product, quality control (can show possible defects)
– usually combined with text and graphics to highlight key information

Charts
– allow for easy cross referencing of information (tables)
– graphs allow for quick interpretation of information

Section II

Question 4 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Gives reasons to support the choice of a suitable timber	2
• Gives a reason to support the choice of a suitable timber OR • Names a suitable timber	1

Answers could include:

Any valid reason such as:
- Appearance
- Availability
- Cost
- Finishing properties
- Physical properties
- Working properties

Question 4 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of a suitable industrial process	3
• Sketches in general terms a suitable industrial process	2
• Names a suitable industrial process	1

Sample answer:

Using a router with a decorative bit set to the required depth, route a decorative edge treatment around the tabletop.

Answer could includes:

Use of spindle moulder
Router
Lathe

Question 4 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Names a suitable industrial product AND provides detailed characteristics and features of its application	4
• Names a suitable industrial product AND provides limited characteristics and features of its application	3
• Names a suitable industrial product AND sketches in general terms the application of a suitable finish	2
• Names a suitable finish OR method	1

Sample answer:

The table, once assembled, is sanded. Any filling of defects/holes is applied and sanded.

Using spraying equipment, a number of coats of lacquer or polyurethane are applied, cutting back between coats as necessary.

Answers could include:

- Electrostatic spray booths
- Use of oil, French polish or water-based finishers
- Waxing of the table on the lathe (burnishing)

Question 4 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Sketches in general terms an advantage AND disadvantage of BOTH methods	4
• Sketches in general terms an advantage AND disadvantage of ONE method AND an advantage OR disadvantage of the other method	3
• Sketches in general terms an advantage AND disadvantage of ONE method OR • Identifies ONE correct response for either method	2
• Identifies ONE advantage OR disadvantage of ONE method	1

Sample answer/Answers could include:

Method 1

Advantage
- this arrangement provides for the perceived appropriate grain direction in possible areas of weakness – avoids short grain
- less waste

Disadvantage
- this method would take much longer to cut out
- difficult to cut out

Method 2

Advantage
- this method would allow for a much quicker cutting out of the legs
- easier to cut out

Disadvantage
- this method uses an excessive amount of timber
- potential for failure towards bottom of the leg
- short grain
- more waste

Question 4 (e)

Outcomes assessed: H1.2, H4.3

MARKING GUIDELINES

Criteria	Marks
• Identifies issues and provides points for and/or against the implications of sourcing timber from rainforests and old growth forests AND • Supports the arguments for the use of alternative sources of supply	7
• Identifies issues and provides points for and/or against the implications of sourcing timber from rainforests and old growth forests AND • Indicates the main features of the use of alternative sources of supply OR • Indicates the main features of the implications of sourcing timber from rainforests and old growth forests AND • Supports the argument for the use of alternative sources of supply	5–6
• Identifies issues and provides points for and/or against the implications of sourcing timber from rainforests or old growth forests OR • Supports the argument for the use of alternative sources of supply OR • Indicates limited features of the implications of sourcing timber from rainforests or old growth forests and the use of alternative sources of supply	3–4
• Provides an implication of sourcing timber from rainforests or old growth forests OR • Indicates features of the use of alternative sources of supply OR • Indicates very limited features of the implications of sourcing timber from rainforests or old growth forests and the use of alternative sources of supply	1–2

Question 4 (e) (continued)

Sample answer/Answers could include:

- Trees take too long to regrow, eg 300 years
- Not environmentally sustainable
- Removing animal habitat
- Environmental/ecological degradation
- Using timber plantations
  - environmentally sustainable
  - controlled management
  - generally use quicker growing timbers
- Recycling
- Manufactured boards

Question 5 (a)

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

MARKING GUIDELINES

Criteria	Marks
• Gives a suitable explanation of why the stool has had its legs angled out	2
• Demonstrates some understanding of why the stool has had its legs angled out	1

Sample answer/Answers could include:

- Makes it more stable
- Makes it safer
- To create a wider base.

Question 5 (b)

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

MARKING GUIDELINES

Criteria	Marks
• Names and sketches with labels, a suitable joint that could be used to attach the rails to the legs	3
• Names and sketches a suitable joint that could be used to attach the rails to the legs OR • Sketches and labels a suitable joint that could be used to attach the rails to the legs	2
• Sketches a suitable joint that could be used to attach the rails to the legs OR • Names a suitable joint that could be used to attach the rails to the legs	1

Sample answer/Answers could include:

Mortise and tennon

Bridle

Dowel

Biscuit

Question 5 (c)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of and sketches a method of cutting the hand grip into the top step of the stool	4
• Indicates the main features of and sketches a method of cutting the hand grip into the top step of the stool OR • Provides characteristics and features of a method of cutting the hand grip into the top step of the stool	3
• Indicates the main features of a method of cutting the hand grip into the top step of the stool OR • Recognises, names and sketches a method of cutting the hand grip into the top step of the stool	2
• Recognises and names a method of cutting the hand grip into the top step of the stool OR • Sketches a method of cutting the hand grip into the top step of the stool	1

Question 5 (c) (continued)

Sample answer/Answers could include:

- Drill two holes and cut between with a jigsaw
- Bandsaw the "half" shape into two pieces of timber then biscuit together

Question 5 (d)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features of TWO methods of providing a non-slip surface to the step and top of the stool	4
• Provides characteristics and features of ONE method and outlines ONE method of providing a non-slip surface to the step and top of the stool	3
• Provides characteristics and features of ONE method of providing a non-slip surface to the step and top of the stool only OR • Indicates some of the main features of TWO methods of providing a non-slip surface to the step and top of the stool	2
• Indicates the main features of ONE method of providing a non-slip surface to the step and top of the stool only OR • Recognises and names TWO methods of providing a non-slip surface to the step and top of the stool	1

Answers could include:

- Apply "stick on" grip tape
- Add sand to wet lacquer or paint in the final coat
- Rout grooves into the timber
- Stick a piece of abrasive paper to the surface

Question 5 (e)

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

MARKING GUIDELINES

Criteria	Marks
• Provides characteristics and features, with the aid of sketches, of a manufacturing and assembly process	7
• Provides characteristics and features of a manufacturing and assembly process OR • Provides some characteristics and features, with the aid of sketches, of a manufacturing and assembly process	5–6
• Provides characteristics and features of a manufacturing process OR • Provides characteristics and features of an assembly process OR • Sketches and indicates the main features of an assembly OR manufacturing process	3–4
• Indicates some features of an assembly process OR • Indicates some features of a manufacturing process OR • Sketches and names a manufacturing OR assembly process	1–2