



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

## **2011 HSC Metal and Engineering Marking Guidelines**

### **Section I**

#### **Multiple-choice Answer Key**

<b>Question</b>	<b>Answer</b>
1	C
2	D
3	D
4	A
5	D
6	D
7	C
8	B
9	B
10	A
11	A
12	C
13	A
14	B
15	A

## Section II

### Question 16 (a)

Criteria	Marks
• Correctly indicate the minimum size	1

### Question 16 (b)

Criteria	Marks
• Correctly identifies the symbol	1

### Question 16 (c)

Criteria	Marks
• Correctly dimensions both A and B	2
• Correctly dimensions either A or B	1

### Question 16 (d)

Criteria	Marks
• Explains the purpose of the additional drawing	2
• Provides a limited general description of the drawing	1

### Question 16 (e)

Criteria	Marks
• Correctly names and fully describes the features of a suitable pictorial sketch	3
• Outlines the features of a suitable pictorial sketch OR describes the sketch	2
• Correctly names a suitable pictorial sketch OR provides a limited outline of the features of a suitable pictorial sketch	1

**Question 17 (a)**

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>Proposes the steps required, in a logical sequence, to successfully mark out and efficiently manufacture the slot</li><li>Names all relevant tools involved</li></ul>	6
<ul style="list-style-type: none"><li>Proposes the steps required, in a logical sequence, to mark out and manufacture the slot</li><li>Names most tools involved</li></ul>	4-5
<ul style="list-style-type: none"><li>Proposes most steps in a logical sequence</li><li>Lists some tools necessary</li></ul>	2-3
<ul style="list-style-type: none"><li>Lists some steps of the marking out AND/OR the manufacturing processes AND/OR some tools</li></ul>	1

**Question 17 (b)**

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>Identifies a hazard and describes an appropriate control measure</li></ul>	3
<ul style="list-style-type: none"><li>Identifies a hazard and poorly describes a control measure</li></ul>	2
<ul style="list-style-type: none"><li>Identifies a potential hazard</li></ul>	1

**Question 18 (a)**

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>Correctly names the graduated device</li></ul>	1

**Question 18 (b)**

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>Correctly provides the reading</li></ul>	1

**Question 18 (c)**

<b>Criteria</b>	<b>Marks</b>
<ul style="list-style-type: none"><li>Explains fully the reasons for a ratchet</li></ul>	2
<ul style="list-style-type: none"><li>Describes a ratchet OR its operation</li></ul>	1

**Question 18 (d)**

<b>Criteria</b>	<b>Marks</b>
• Outlines an extensive range of methods of care required when using precision instruments	4
• Outline some methods of care required when using precision instruments	3
• Lists some methods of care required when using precision instruments	2
• Names a method of care required when using precision instruments	1

**Question 19 (a)**

<b>Criteria</b>	<b>Marks</b>
• Provides a substantial list of limitations of using a cordless drill	2
• Provides a basic list of limitations of using a cordless drill	1

**Question 19 (b)**

<b>Criteria</b>	<b>Marks</b>
• Explains several appropriate reasons for a safety tag	3
• Explains a reason for a safety tag or lists several reasons	2
• Poorly explains or lists a reason for a safety tag	1

**Question 19 (c)**

<b>Criteria</b>	<b>Marks</b>
• Provides an extensive range of factors to be considered	4
• Provides some factors to be considered	3
• Lists some factors to be considered	2
• Names a factor to be considered	1

## Section III

### Question 20

Criteria	Marks
<ul style="list-style-type: none"><li>Using industry terminology, describes a substantial range of work instructions, policies and procedures</li><li>Demonstrates, in a well-reasoned and cohesive response, a thorough understanding of the impact of work instructions and procedures on the quality of products</li></ul>	13–15
<ul style="list-style-type: none"><li>Using some industry terminology, describes a range of work instructions, policies and procedures</li><li>Demonstrates, in a clear and organised response, a sound understanding of the impact of work instructions and procedures on the quality of products</li></ul>	10–12
<ul style="list-style-type: none"><li>Using some industry terminology, describes some work instructions, policies and procedures</li><li>Demonstrates a basic understanding of the impact of work instructions on quality</li></ul>	7–9
<ul style="list-style-type: none"><li>Briefly outlines some work instructions and procedures</li><li>Displays an elementary understanding of the impact of work instructions/procedures on quality</li></ul>	4–6
<ul style="list-style-type: none"><li>Briefly outlines a work instruction/procedure or lists some work instructions/procedures</li><li>Displays a minimal understanding of quality concepts</li></ul>	1–3

## Section IV

### Question 21 (a)

Criteria	Marks
<ul style="list-style-type: none"><li>• Demonstrates a sound knowledge and understanding of the role that occupational health and safety plays in the workplace</li></ul>	2
<ul style="list-style-type: none"><li>• Displays a general knowledge of occupational health and safety</li></ul>	1

### Question 21 (b)

Criteria	Marks
<ul style="list-style-type: none"><li>• Compares fully the requirements for the formation of an occupational health and safety committee AND the election of an occupational health and safety representative</li></ul>	4
<ul style="list-style-type: none"><li>• Outlines fully the requirement for the formation of an occupational health and safety committee OR the election of an occupational health and safety representative, with limited reference to the other</li></ul>	3
<ul style="list-style-type: none"><li>• Partially outlines the requirement for the formation of an occupational health and safety committee OR the election of an occupational health and safety representative</li></ul>	2
<ul style="list-style-type: none"><li>• Displays a limited knowledge and understanding of the formation of an occupational health and safety committee AND/OR the election of an occupational health and safety representative</li></ul>	1

### Question 21 (c)

Criteria	Marks
<ul style="list-style-type: none"><li>• Recommends a comprehensive proposal for a series of appropriate guidelines with detailed consideration of all areas</li><li>• Exhibits an extensive understanding of occupational health and safety principles</li></ul>	8-9
<ul style="list-style-type: none"><li>• Recommends a thorough proposal for a series of appropriate guidelines with consideration of most areas</li><li>• Exhibits a sound understanding of occupational health and safety principles</li></ul>	6-7
<ul style="list-style-type: none"><li>• Recommends a basic proposal for a series of appropriate guidelines</li><li>• Exhibits a general understanding of occupational health and safety principles</li></ul>	4-5
<ul style="list-style-type: none"><li>• Lists some housekeeping practices</li><li>• Displays a limited understanding of occupational health and safety</li></ul>	1-3

# Metal and Engineering

## 2011 HSC Examination Mapping Grid

### Section I

Question	Marks	Unit of competency/Element of competency
1	1	MEM18001C Use Hand Tools
2	1	MEM18001C Use Hand Tools
3	1	MEM18001C Use Hand Tools
4	1	MEM09002B Interpret technical drawing
5	1	MEM12024A Perform computations
6	1	MEM13014A Apply principals of occupational health and safety in the work environment
7	1	MEM15002A Apply quality systems
8	1	MEM18002B Use power tools/hand held operations
9	1	MEM16007A Work with other is a manufacturing, engineering or related environment
10	1	MEM09002B Interpret technical drawing
11	1	MEM13014A Apply principals of occupational health and safety in the work environment
12	1	INDUCTION Manufacturing, engineering and related services industries induction
13	1	MEM15024A Apply quality procedures
14	1	MEM18001C Use Hand Tools
15	1	INDUCTION Manufacturing, engineering and related services industries induction

### Section II

Question	Marks	Unit of competency/Element of competency
16 (a)	1	MEM09002B Interpret technical drawing MEM12024A Perform computations
16 (b)	1	MEM09002B Interpret technical drawing
16 (c)	2	MEM09002B Interpret technical drawing MEM12024A Perform computations
16 (d)	2	MEM09002B Interpret technical drawing
16 (e)	3	MEM09002B Interpret technical drawing
17 (a)	6	MEM14004A Plan to undertake a routine task MEM18001C Use Hand Tools
17 (b)	3	MEM13014A Apply principles of occupational health and safety in the work environment
18 (a)	1	MEM12023A Perform engineering measurements
18 (b)	1	MEM12023A Perform engineering measurements MEM12024A Perform computations
18 (c)	2	MEM12023A Perform engineering measurements
18 (d)	4	MEM12023A Perform engineering measurements
19 (a)	2	MEM18002B Use power tools/hand held operations
19 (b)	3	MEM18002B Use power tools/hand held operations
19 (c)	4	MEM18002B Use power tools/hand held operations MEM13014A Apply principals of occupational health and safety in the work environment

**Section III**

<b>Question</b>	<b>Marks</b>	<b>Unit of competency/Element of competency</b>
20	15	MEM15002A Apply quality systems MEM15024A Apply quality procedures MEM16007A Work with others in a manufacturing, engineering or related environment

**Section IV**

<b>Question</b>	<b>Marks</b>	<b>Unit of competency/Element of competency</b>
21 (a)	2	MEM13014A Apply principles of Occupational health and safety in the work environment
21 (b)	4	MEM13014A Apply principles of Occupational health and safety in the work environment
21 (c)	9	MEM13014A Apply principles of Occupational health and safety in the work environment