BOARD OF STUDIES
NEW SOUTH WALES

2012 HSC Metal and Engineering Marking Guidelines

Section I

Multiple-choice Answer Key

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

Section II

Question 16 (a)

Criteria	Marks
• Correctly identifies the symbol	1

Question 16 (b)

Criteria	Marks
• Correct working out with correct answer	2
• Incorrect answer with correct data from drawing OR correct answer only	1

Question 16 (c)

Criteria	Marks
• Provides an example of a correct tolerance and justifies why this tolerance is needed	2
• Provides an example of a correct tolerance or justifies why this tolerance is needed	1

Question 16 (d)

Criteria	Marks
• Explains the reason for conforming to AS 1100 drawing standards	4
• Discusses the reason for the need to conform to drawing standards	3
• Names the reason for conforming to the drawing standard	2
• Names a feature of a drawing standard	1

Question 17 (a)

Criteria	Marks
• Proposes the steps required, in a logical sequence, to successfully mark out and efficiently manufacture the bracket prior to bending • Names all relevant tools involved	6
• Proposes the steps required, in a logical sequence, to mark out and manufacture the bracket prior to bending • Names most tools involved	5
• Proposes most steps in a logical sequence • Lists some tools necessary	3–4
• Lists some steps of the marking out AND/OR the manufacturing processes AND/OR some tools	1–2

Question 17 (b)

Criteria	Marks
• Describes fully a range of quality checks that should be carried out	3
• Lists several quality checks OR describes a quality check	2
• Identifies a quality check	1

Question 18 (a)

Criteria	Marks
• Correctly names the hand-held power tool	1

Question 18 (b)

Criteria	Marks
• Describes TWO operations of the power tool	2
• Describes an operation of the power tool or lists operations.	1

Question 18 (c)

Criteria	Marks
• Identifies TWO or more faults and explains why the tool becomes unsafe	2
• Explains one or lists a range of possible faults	1

Question 18 (d)

Criteria	Marks
• Outlines an extensive range of emergency procedures that should be carried out in the emergency situation	4
• Outlines some emergency procedures that should be carried out in the emergency situation	3
• Lists some emergency procedures that should be carried out in the emergency situation	2
• Names an emergency procedure that should be carried out in the emergency situation	1

Question 19 (a)

Criteria	Marks
• Identifies that one method is more accurate than the other and describes the reasons why	2
• Identifies that one method is more accurate than the other	1

Question 19 (b)

Criteria	Marks
• Fully describes a range of considerations in the selection of a measuring device	3
• Identifies a range of considerations OR describes one consideration in the selection of a measuring device	2
• Identifies a consideration in the selection of a measuring device	1

Question 19 (c)

Criteria	Marks
• Explains an extensive range of benefits to the company	3
• Lists some benefits to the company	2
• Names a benefit to the company	1

Section III

Question 20

Criteria	Marks
• Using industry terminology, describes a substantial range of features of an effective induction program • Demonstrates, in a well-reasoned and cohesive response, a thorough understanding of the impact of induction programs and the benefits to metal and engineering firms and their employees	13–15
• Using some industry terminology, describes a range of features of an effective induction program • Demonstrates, in a clear and organised response, a sound understanding of the impact of induction programs and the benefits to metal and engineering firms and their employees	10–12
• Using some industry terminology, describes some features of an effective induction program • Demonstrates a basic understanding of the impact of induction programs and the benefits to metal and engineering firms and their employees	7–9
• Briefly outlines some features of an induction program • Displays an elementary understanding of the impact of induction programs AND/OR the benefits to metal and engineering firms and their employees	4–6
• Briefly outlines some features of an induction program • Displays a minimal understanding of induction concepts	1–3

Section IV

Question 21 (a)

Criteria	Marks
• Demonstrates a sound knowledge and understanding of why safety signage is used in the workplace	2
• Displays a general knowledge of why safety signage is used in the workplace	1

Question 21 (b)

Criteria	Marks
• Describes fully the information contained on a substantial range of safety signs AND understands the impact they have on safety awareness	4
• Outlines fully the information contained on a range of safety signs AND understands the impact they have on safety awareness	3
• Partially outlines the information contained on a limited range of safety signs OR understands the impact they have on safety awareness	2
• Displays a limited knowledge and understanding of information contained on safety signs in the workplace	1

Question 21 (c)

Criteria	Marks
• Provides a comprehensive description of the roles and regulations relating to employers and all levels of staff regarding safety signs • Exhibits an extensive understanding of how safety signage and procedures are successfully implemented	8-9
• Provides a thorough description of the roles and regulations relating to employers and all levels of staff regarding safety signs • Exhibits a sound understanding of how safety signage and procedures are successfully implemented	6–7
• Provides a basic description of the roles and regulations relating to employers and all levels of staff regarding safety signs • Exhibits a general understanding of how safety signage and procedures are successfully implemented	4-5
• Lists some roles or regulations relating to any level of employers and staff regarding safety signs • Displays a limited understanding of how safety signage is successfully implemented	1-3

Metal and Engineering

2012 HSC Examination Mapping Grid

Section I

Question	Marks	Unit of competency/Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
1	1	MEM12023A Perform engineering measurements pg 24								
2	1	MEM18001C Use hand tools pg 83								
3	1	MEM12024A Perform computations pg 32								
4	1	INDUCTION Manufacturing, engineering and related services industries induction pg 13								
5	1	MEM18002B Use power tools/hand-held operations pg 89								
6	1	MEM18001C Use hand tools pg 83								
7	1	MEM09002B Interpret technical drawing pg 18								
8	1	MEM13014A Apply principles of workplace health and safety in the work environment pg 39								
9	1	MEM09002B Interpret technical drawing pg 17								
10	1	MEM13014A Apply principles of workplace health and safety in the work environment pg 46								
11	1	MEM18001C Use hand tools pg 83								
12	1	MEM15002A Apply quality systems pg 59								
13	1	MEM16007A Work with others pg 73 MEM15024A Apply quality procedures pg 66								
14	1	MEM12024A Perform computations pg 33								

Question	Marks	Unit of competency/Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
15	1	MEM15002A Apply quality systems pg 58, 60								

Section II

Question	Marks	Unit of competency/Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
16 (a)	1	MEM09002B Interpret technical drawing pg 17								
16 (b)	2	MEM09002B Interpret technical drawing pg 25 MEM12024A Perform computations pg 33								
16 (c)	2	MEM09002B Interpret technical drawing pg 25								
16 (d)	4	MEM09002B Interpret technical drawing pg 18 MEM15002A Apply quality systems pg 61								
17 (a)	6	MEM14004A Plan to undertake a routine task pg 52 MEM18001C Use hand tools pg 83 MEM09002B Interpret technical drawing pg 20								
17 (b)	3	MEM15024A Apply quality procedures pg 67								
18 (a)	1	MEM18002B Use power tools/hand-held operations pg 89								
18 (b)	2	MEM18002B Use power tools/hand-held operations pg 89								
18 (c)	2	MEM18002B Use power tools/hand-held operations pg 89 MEM13014A Apply principles of workplace health and safety in the work environment pg 37								

Question	Marks	Unit of competency/Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
18 (d)	4	MEM13014A Apply principles of workplace health and safety in the work environment pg 39								
19 (a)	2	MEM12023A Perform engineering measurements pg 27								
19 (b)	3	MEM12023A Perform engineering measurements pg 24								
19 (c)	3	MEM12023A Perform engineering measurements pg 25 MEM15002A Apply quality systems pg 62								

Section III

Question	Marks	Unit of competency/Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
20	15	INDUCTION Manufacturing, engineering and related services industries induction pg 13								

Section IV

Question	Marks	Unit of competency/Element of competency	Employability skills (Please put an X where appropriate)							
			Communication	Teamwork	Problem-solving	Initiative and enterprise	Planning and organising	Self-management	Learning	Technology
21 (a)	2	MEM16007A Work with others pg 73								
21 (b)	4	MEM13014A Apply principles of workplace health and safety in the work environment pg 44								
21 (c)	9	MEM13014A Apply principles of workplace health and safety in the work environment pg 41 MEM16007A Work with others pg 76								