BOARD OF STUDIES
NEW SOUTH WALES

2010 HSC Metal and Engineering Marking Guidelines

Section I

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

Section II

Question 16 (a)

Criteria	Marks
• Correctly states a purpose of the drawing at B5	1

Question 16 (b)

Criteria	Marks
• Identifies the item changed	1

Question 16 (c)

Criteria	Marks
• Correctly provides reasons for the use of a section plane	2
• Correctly provides a reason for the use of a section plane	1

Question 16 (d)

Criteria	Marks
• Using technical language describes TWO welding symbol features shown	2
• Using technical language describes ONE of the welding symbol features shown OR TWO descriptions using non-technical terminology	1

Question 16 (e)

Criteria	Marks
• Correctly calculates the total cost of materials, showing all working out required	4
• Calculates the total cost of materials, showing all working but with minor incorrect data OR with a minor arithmetical error	3
• Calculates the total material required OR calculates the material/cost for only part of the total OR correctly calculates the total cost (without working)	2
• Transfers some relevant data from the drawing, AND/OR correctly makes a basic relevant calculation	1

Question 17 (a)

Criteria	Marks
• Completes the table with THREE correct responses	3
• Completes the table with TWO correct responses	2
• Completes the table with ONE correct response	1

Question 17 (b)

Criteria	Marks
• Proposes all steps required in a logical sequence to mark out and manufacture Item 4 -FOOT PAD • Lists appropriate tools necessary	5–6
• Proposes most steps in a logical sequence • Lists most tools necessary	3–4
• Lists some steps of the marking out AND/OR the manufacturing processes AND/OR some tools	1–2

Question 18 (a)

Criteria	Marks
• Correctly identifies the drilling machine	1

Question 18 (b)

Criteria	Marks
• Proposes a substantial and correct list of pre-operational checks	3
• Proposes a basic and mostly correct list of pre-operational checks	2
• Lists a correct pre-operational check	1

Question 18 (c)

Criteria	Marks
• Explains a series of strategies demonstrating extensive understanding and knowledge of ways to prevent damage when drilling.	4
• Describes a series of strategies that would assist in preventing damage when drilling	3
• Outlines some relevant strategies and their impact on the drilling operation OR a significant list of possible strategies	2
• Provides a possible strategy	1

Question 19 (a)

Criteria	Marks
• Correctly provides a type of error	1

Question 19 (b)

Criteria	Marks
• Correctly provides THREE responses	3
• Correctly provides TWO responses	2
• Correctly provides ONE response	1

Question 19 (c)

Criteria	Marks
• Explains the practice, demonstrating understanding and knowledge of its impact on quality.	4
• Describes the practice with some links to quality processes	3
• Outlines some relevant quality processes OR describes the practice using non-technical language	2
• Makes some limited observations regarding the practice	1

Section III

Question 20

Criteria	Marks
• Using precise industry terminology, demonstrates a well-developed understanding and knowledge of occupational health and safety issues • Explains in a logical and cohesive response the occupational health and safety responsibilities and duties of individual employees • Comprehends the contribution that the adherence to occupational health and safety has on others in the workplace	13–15
• Using specific industry terminology, demonstrates a sound understanding and knowledge of occupational health and safety issues • Describes in a clear and cohesive response the occupational health and safety responsibilities and duties of individual employees • Recognises the contribution that the adherence to occupational health and safety has on others in the workplace	10–12
• Using general industry terminology, demonstrates a basic understanding and knowledge of occupational health and safety issues • Describes in an organised response some of the responsibilities and duties of individual employees • Identifies the contribution that the adherence to occupational health and safety has on others in the workplace	7–9
• Using some industry terminology, demonstrates a limited understanding and knowledge of occupational health and safety issues • Outlines some occupational health and safety responsibilities and duties of individual employees • Demonstrates a minimal knowledge of the contribution occupational health and safety has on others in the workplace	4–6
• Lists some occupational health and safety issues AND/OR • Demonstrates a limited knowledge of the occupational health and safety responsibilities and duties of individual employees	1–3

Section IV

Question 21 (a)

Criteria	Marks
• Names an emerging technology AND states how it has changed the skills required of workers	2
• Names an emerging technology OR states how it has changed the skills required of workers	1

Question 21 (b)

Criteria	Marks
• Outlines a comprehensive list of 'on the job' strategies	4
• Outlines some 'on the job' training strategies	3
• Lists some training strategies	2
• Names a training strategy	1

Question 21 (c)

Criteria	Marks
• Using relevant industry terminology demonstrates a detailed understanding and knowledge of vocational training in NSW • Presents a logical and cohesive response that describes the training requirements and employment conditions of apprentices and trainees	7–9
• Using general industry terminology demonstrates a sound understanding and knowledge of vocational training in NSW • Presents an organised response that outlines the training requirements and employment conditions of apprentices and trainees	4–6
• Lists some training requirements and employment conditions of apprentices and trainees • Shows limited understanding of vocational training in NSW	1–3

Metal and Engineering

2010 HSC Examination Mapping Grid

Question	Marks	Unit of competency / Element of competency
Section I		
1	1	MEM 18.1C Use hand tools
2	1	MEM 18.1C Use hand tools
3	1	MEM 9.2B Interpret technical drawing
4	1	MEM 18.1C Use hand tools
5	1	MEM 18.2B Use power tools/hand held operations
6	1	MEM 12.23A Perform engineering measurements
7	1	MEM 9.2B Interpret technical drawing
8	1	MEM 12.24A Perform computations
9	1	Manufacturing, engineering and related industries induction
10	1	MEM 12.24A Perform computations
11	1	MEM 12.23A Perform engineering measurements
12	1	MEM 18.1C Use hand tools
13	1	MEM 13.14A Apply principles of occupational health and safety
14	1	MEM 13.14A Apply principles of occupational health and safety
15	1	MEM 15.2A Quality systems
Section II		
16 (a)	1	MEM 9.2B Interpret technical drawing
16 (b)	1	MEM 9.2B Interpret technical drawing
16 (c)	2	MEM 9.2B Interpret technical drawing
16 (d)	2	MEM 9.2B Interpret technical drawing
16 (e)	4	MEM 12.24A Perform computations; MEM9.2B Interpret technical drawing
17 (a)	3	MEM9.2B Interpret technical drawing
17 (b)	6	MEM 14.4A Plan to undertake a routine task; MEM 9.2B Interpret technical drawing; MEM 18.1C Use hand tools
18 (a)	1	MEM 18.2B Use power tools/hand held operations
18 (b)	3	MEM 18.2B Use power tools/hand held operations
18 (c)	4	MEM 18.2B Use power tools/hand held operations
19 (a)	1	MEM 12.23A Perform engineering measurements
19 (b)	3	MEM 12.23A Perform engineering measurements
19 (c)	4	MEM 15.24A Apply quality procedures; MEM 15.2A Quality systems
Section III		
20	15	MEM 13.14A Apply principles of occupational health and safety
Section IV		
21 (a)	2	Manufacturing, engineering and related industries induction
21 (b)	4	Manufacturing, engineering and related industries induction; MEM 16.7A Work with others in a manufacturing, engineering or related environment
21 (c)	9	Manufacturing, engineering and related industries induction