



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

2009 HSC Electrotechnology Marking Guidelines

Section I

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

Section II

Question 16 (a)

Competencies assessed: UEENEEE003B

MARKING GUIDELINES

Criteria	Marks
• Identifies symbol correctly	1

Question 16 (b)

Competencies assessed: UEENEEE003B

MARKING GUIDELINES

Criteria	Marks
• Identifies symbol correctly	1

Question 16 (c)

Competencies assessed: UEENEEE003B

MARKING GUIDELINES

Criteria	Marks
• Identifies symbol correctly	1

Question 17 (a)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Provides any one of three variations of Ohm's Law	1

Question 17 (b)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Correctly calculates value of unknown current value	1

Question 18 (a)*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
• Correctly identifies value colour codes AND tolerance colour code	2
• Correctly identifies value colour codes OR tolerance colour code	1

Question 18 (b)*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
• Correct value AND % tolerance, tolerance value AND correct maximum value	3
• Correct value AND % tolerance, AND Tolerance value	2
• Correct value AND % tolerance	1

Question 19 (a) (i)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Identifies component correctly	1

Question 19 (a) (ii)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Identifies component correctly	1

Question 19 (b)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Identifies BOTH current flow AND lamp illumination	2
• Identifies EITHER current flow OR lamp illumination	1

Question 19 (c)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Identifies short circuit AND lamp out AND fuse blown	3
• Identifies two of three above conditions	2
• Identifies EITHER short circuit OR lamp out OR fuse blown	1

Question 20 (a)*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
• Identifies correct equation AND calculates correct answer	2
• Identifies correct equation	1

Question 20 (b)*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
• Calculates correct value	1

Question 20 (c)*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
• Calculates total resistance for new time constant AND calculate resistance to be added	2
• Calculates total resistance for new time constant without subtraction of existing	1

Question 21 (a)*Competencies assessed: UEENEEE002B***MARKING GUIDELINES**

Criteria	Marks
• Identifies tool AND application correctly	2
• Identifies tool OR application correctly	1

Question 21 (b)*Competencies assessed: UEENEEE002B***MARKING GUIDELINES**

Criteria	Marks
• Identifies tool AND application correctly	2
• Identifies tool OR application correctly	1

Question 22 (a)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Explains process correctly	1

Question 22 (b)*Competencies assessed: UEENEEE003B***MARKING GUIDELINES**

Criteria	Marks
• Correctly identifies two renewable generation technologies	2
• Correctly identifies one renewable generation technology	1

Question 23*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
Describes: <ul style="list-style-type: none">• Meter setup including range and zero adjustment• Checks for meter operation• Issues with viewing / parallax error	3
Describes: <ul style="list-style-type: none">• Meter setup including range and zero adjustment AND: <ul style="list-style-type: none">• Checks for meter operation OR: <ul style="list-style-type: none">• Issues with viewing / parallax error	2
<ul style="list-style-type: none">• Describes meter setup including range and zero adjustment	1

Question 24*Competencies assessed: UEENEEE004B***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Calculates resistance values• Uses correct formula• Gets correct answer	3
<ul style="list-style-type: none">• Two of three conditions above	2
<ul style="list-style-type: none">• One of three conditions above	1

Section III

Question 25

Competencies assessed: *UEENEEE001B, UEENEEE048B, UEENEEE005B*

MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> Provides a comprehensive description of safe working practices that should be implemented in the given electrotechnology situation Communicates clearly and logically, using standard industry terminology Communicates ideas and information effectively in a well reasoned and cohesive response Demonstrates an in depth understanding of electrotechnology functions in reference to the scenario used in the question 	13–15
<ul style="list-style-type: none"> Provides a detailed description of safe working practices that should be implemented in the given electrotechnology situation Communicates in an acceptable manner using standard industry terminology Communicates ideas and information consistently in a reasoned and cohesive response Demonstrates an understanding of electrotechnology functions in reference to the scenario used in the question 	10–12
<ul style="list-style-type: none"> Provides adequate description of safe working practices that should be implemented in the given electrotechnology situation Communicates using some industry terminology Communicates ideas and information adequately Demonstrates a basic understanding of electrotechnology functions in reference to the scenario used in the question 	7–9
<ul style="list-style-type: none"> Provides a basic description of safe working practices that should be implemented in the given electrotechnology situation Communicates using limited industry terminology Communicates ideas and information in a basic manner Demonstrates a basic understanding of electrotechnology functions in reference to the scenario given 	4–6
<ul style="list-style-type: none"> Provides a limited description of safe working practices that should be implemented in the given electrotechnology situation Communicates using limited industry terminology Communicates ideas and information in a limited manner Demonstrates limited understanding of electrotechnology functions in reference to the scenario used in the question 	1–3

Question 26
Competencies assessed: UEENEEE001B, UEENEEE002B
MARKING GUIDELINES

Criteria	Marks
<ul style="list-style-type: none"> • Provides a comprehensive description of safe working practices that should be implemented in the given electrotechnology situation • Communicates clearly and logically, using standard industry terminology • Communicates ideas and information effectively in a well reasoned and cohesive response • Demonstrates an in depth understanding of electrotechnology functions in reference to the scenario used in the question 	13–15
<ul style="list-style-type: none"> • Provides a detailed description of safe working practices that should be implemented in the given electrotechnology situation • Communicates in an acceptable manner using standard industry terminology • Communicates ideas and information consistently in a reasoned and cohesive response • Demonstrates an understanding of electrotechnology functions in reference to the scenario used in the question 	10–12
<ul style="list-style-type: none"> • Provides adequate description of safe working practices that should be implemented in the given electrotechnology situation • Communicates using some industry terminology • Communicates ideas and information adequately • Demonstrates a basic understanding of electrotechnology functions in reference to the scenario used in the question 	7–9
<ul style="list-style-type: none"> • Provides a basic description of safe working practices that should be implemented in the given electrotechnology situation • Communicates using limited industry terminology • Communicates ideas and information in a basic manner • Demonstrates a basic understanding of electrotechnology functions in reference to the scenario given 	4–6
<ul style="list-style-type: none"> • Provides a limited description of safe working practices that should be implemented in the given electrotechnology situation • Communicates using limited industry terminology • Communicates ideas and information in a limited manner • Demonstrates limited understanding of electrotechnology functions in reference to the scenario used in the question 	1–3

Question 27*Competencies assessed: UEENEEE010B, UEENEEE048B***MARKING GUIDELINES**

Criteria	Marks
<ul style="list-style-type: none">• Provides a cohesive well reasoned response that reflects a high level of organisation, judgement and problem solving skills• Consistently uses precise terminology to a professional level• Communicates ideas and information highly effectively	13–15
<ul style="list-style-type: none">• Provides a well reasoned response that reflects a significant level of organisation, judgement and problem solving skills• Uses precise terminology to a professional level• Effectively communicates ideas and information	10–12
<ul style="list-style-type: none">• Provides a response that reflects an adequate level of organisation, judgement and problem solving skills• Uses terminology to an acceptable level• Communicates ideas and information to an adequate level	7–9
<ul style="list-style-type: none">• Provides a response that reflects a basic level of organisation, judgement and problem solving skills• Consistently uses basic terminology• Communicates ideas and information at a basic level	4–6
<ul style="list-style-type: none">• Provides a limited response reflecting a basic level of organisation, judgement and problem solving skills• Makes limited use of professional terminology• Communicates ideas and information at a basic level	1–3

Electrotechnology

2009 HSC Examination Mapping Grid

Question	Marks	Unit of competency / Element of competency	
Section I			
1	1	UEENEEE001B	Apply OHS practices in the workplace
2	1	UEENEEE001B	Apply OHS practices in the workplace
3	1	UEENEEE005B UEENEEE001B UEENEEE048B	Fix and secure equipment Apply OHS practices Carry out routine work activities in an electrotechnology environment
4	1	UEENEEE005B	Fix and secure equipment
5	1	UEENEEE005B	Fix and secure equipment
6	1	UEENEEE005B	Fix and secure equipment
7	1	UEENEEE048B UEENEEE003B	Carry out routine work activities in an electrotechnology environment Solve problems in extra-low voltage single path circuits
8	1	UEENEEE004B	Solve problems in multiple path DC circuits
9	1	UEENEEE004B	Solve problems in multiple path DC circuits
10	1	UEENEEE048B UEENEEE004B	Carry out routine work activities in an electrotechnology environment Solve problems in multiple path DC circuits
11	1	UEENEEE003B	Solve problems in extra-low voltage single path circuits
12	1	UEENEEE001B	Apply OHS practices in the workplace
13	1	UEENEEE003B	Solve problems in extra-low voltage single path circuits
14	1	UEENEEE004B	Solve problems in multiple path DC circuits
15	1	UEENEEE004B	Solve problems in multiple path DC circuits
Section II			
16	3	UEENEEE003B	Solve problems in extra-low voltage single path circuits
17 (a)	1	UEENEEE003B	Solve problems in extra-low voltage single path circuits
17 (b)	1	UEENEEE003B	Solve problems in extra-low voltage single path circuits
18 (a)	2	UEENEEE004B	Solve problems in multiple path DC circuits
18 (b)	3	UEENEEE004B	Solve problems in multiple path DC circuits
19 (a)	2	UEENEEE003B	Solve problems in extra-low voltage single path circuits
19 (b)	2	UEENEEE003B	Solve problems in extra-low voltage single path circuits
19 (c)	3	UEENEEE003B	Solve problems in extra-low voltage single path circuits
20 (a)	2	UEENEEE004B	Solve problems in multiple path DC circuits
20 (b)	1	UEENEEE004B	Solve problems in multiple path DC circuits
20 (c)	2	UEENEEE004B	Solve problems in multiple path DC circuits
21	4	UEENEEE002B	Dismantle, assemble and fabricate electrotechnology components
22	3	UEENEEE003B	Solve problems in extra-low voltage single path circuits
23	3	UEENEEE004B	Solve problems in multiple path DC circuits
24	3	UEENEEE004B	Solve problems in multiple path DC circuits

Question	Marks	Unit of competency / Element of competency
Section III		
25	15	UEENEEE001B Apply OHS practices in the workplace
		UEENEEE048B Carry out routine work activities in an electrotechnology environment
		UEENEEE005B Fix and secure equipment
26	15	UEENEEE001B Apply OHS practices in the workplace
		UEENEEE002B Dismantle, assemble and fabricate electrotechnology components
27	15	UEENEEE010B Deliver service to customers
		UEENEEE048B Carry out routine work activities in an electrotechnology environment