



2011 HSC Electrotechnology Marking Guidelines

Section I

Multiple-choice Answer Key

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

Section II

Question 16 (a)

Criteria	Marks
<ul style="list-style-type: none"> Identifies purpose of both tags and provides example of each 	4
<ul style="list-style-type: none"> Identifies purpose of both tags and provides ONE example of where a tag is used OR Provides examples of where both tags are used and only identifies the purpose of ONE of the tags 	3
<ul style="list-style-type: none"> Identifies purpose of both tags OR Provides examples of both tags OR Identifies the purpose of ONE tag and provides example of ONE tag 	2
<ul style="list-style-type: none"> Identifies purpose of ONE tag OR Provides example of ONE tag 	1

Question 16 (b)

Criteria	Marks
<ul style="list-style-type: none"> 3 correct responses 	3
<ul style="list-style-type: none"> 2 correct responses 	2
<ul style="list-style-type: none"> 1 correct response 	1

Question 17 (a)

Criteria	Marks
<ul style="list-style-type: none"> Resistors wired correctly (series) AND ammeter wired correctly AND voltmeter wired correctly AND rest of circuit completed AND switch/fuse AND is a working circuit 	5
<ul style="list-style-type: none"> Any FOUR of above FIVE items done correctly AND is a working circuit 	4
<ul style="list-style-type: none"> Any THREE of above FIVE items done correctly 	3
<ul style="list-style-type: none"> Any TWO of above FIVE items done correctly 	2
<ul style="list-style-type: none"> Any ONE of above FIVE items done correctly 	1

Question 17 (b)

Criteria	Marks
• Correct answer including units (Amps)	2
• Calculates correct resistance value	1

Question 18 (a)

Criteria	Marks
• Identify TWO types of verbal communication	2
• Identify ONE type of verbal communication	1

Question 18 (b)

Criteria	Marks
• Identify TWO types of non-verbal communication	2
• Identify ONE type of non-verbal communication	1

Question 18 (c)

Criteria	Marks
• Identify THREE types of written communication	3
• Identify TWO types of written communication	2
• Identify ONE type of written communication	1

Question 19 (a)

Criteria	Marks
• Identifies that the circuit current will divide evenly three ways to 2 Amperes	1

Question 19 (b)

Criteria	Marks
• Identifies there is 12 Volts across each lamp and successfully calculates the power dissipated by one lamp	2
• Identifies there is 12 Volts across each lamp with branch current of 2 Amperes	1

Question 19 (c)

Criteria	Marks
<ul style="list-style-type: none"> Identifies that each lamp will have the same power output and is the total of all three lamps, successfully calculating answer 	2
<ul style="list-style-type: none"> Identifies each lamp will have the same power output but fails to calculate total power 	1

Question 20 (a) (i)

Criteria	Marks
<ul style="list-style-type: none"> Identifies that both lamps will be dim when variable resistor is at point B AND Identifies that both lamps will be bright when variable resistor is at point A 	2
<ul style="list-style-type: none"> Identifies either lamps will be dim at point B OR Identifies that lamps will be bright at point A 	1

Question 20 (a) (ii)

Criteria	Marks
<ul style="list-style-type: none"> Identifies that voltage will be equal to the supply voltage if there is an o/c at lamp 1 	1

Question 20 (a) (iii)

Criteria	Marks
<ul style="list-style-type: none"> Identifies that total circuit current will fall to zero with an o/c at lamp 1 	1

Question 20 (b)

Criteria	Marks
<ul style="list-style-type: none"> Calculates total resistance AND Calculates total current AND Calculates Voltage drop across R_1 AND Calculates Voltage drop across R_2 AND Calculates V_0 	5
<ul style="list-style-type: none"> Calculates total resistance AND Calculates total current AND Calculates Voltage drop across R_1 AND Calculates Voltage drop across R_2 	4
<ul style="list-style-type: none"> Calculates total resistance AND Calculates total current AND Calculates Voltage drop across R_1 OR Calculates Voltage drop across R_2 	3
<ul style="list-style-type: none"> Calculates total resistance AND Calculates total current 	2
<ul style="list-style-type: none"> Calculates total resistance 	1

Section III

Question 21

Criteria	Marks
<ul style="list-style-type: none"> Provides a comprehensive explanation 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 explanation of safe working practices that should be implemented in the given electrotechnology situation Communicates in the manner acceptable 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 explanation 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 explanation 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 some 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

Section IV

Question 22 (a)

Criteria	Marks
<ul style="list-style-type: none"> Provides a comprehensive risk assessment that should be undertaken in the given electrotechnology situation 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 	5–6
<ul style="list-style-type: none"> Provides a detailed risk assessment that should be undertaken in the given electrotechnology situation 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 	4
<ul style="list-style-type: none"> Provides adequate risk assessment that should be undertaken in the given electrotechnology situation Communicates ideas and information adequately Demonstrates a basic understanding of electrotechnology functions in reference to the scenario used in the question 	3
<ul style="list-style-type: none"> Provides a basic risk assessment that should be undertaken in the given electrotechnology situation Communicates ideas and information in a basic manner Demonstrates a basic understanding of electrotechnology functions in reference to the scenario given 	2
<ul style="list-style-type: none"> Provides a limited assessment of risks that should be undertaken in the given electrotechnology situation Communicates ideas and information in a limited manner Demonstrates limited understanding of electrotechnology functions in reference to the scenario used in the question 	1

Question 22 (b)

Criteria	Marks
<ul style="list-style-type: none"> Provides a comprehensive list process referring to customer service AND isolation procedures AND safe working methods Consistently uses precise terminology to a professional level Communicates ideas and information highly effectively 	8–9
<ul style="list-style-type: none"> Provides a detailed process referring to customer service AND/OR isolation procedures AND/OR safe working methods Uses precise terminology to a professional level Effectively communicates ideas and information 	6–7
<ul style="list-style-type: none"> Provides an adequate process referring to customer service AND/OR isolation procedures AND/OR safe working methods Uses terminology to an acceptable level Communicates ideas and information to an adequate level 	4–5
<ul style="list-style-type: none"> Provides a basic process referring to customer service OR isolation procedures OR safe working methods Consistently uses basic terminology Communicates ideas and information at a basic level 	2–3
<ul style="list-style-type: none"> Provides a limited process referring to customer service OR isolation procedures OR safe working methods Makes limited use of professional terminology Communicates ideas and information at a basic level 	1

Electrotechnology

2011 HSC Examination Mapping Grid

Section I

Question	Marks	Unit of competency/Element of competency
1	1	UEENEEE004B Solve problems in multiple path DC circuits
2	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
3	1	UEENEEE005B Fix and secure equipment
4	1	UEENEEE005B Fix and secure equipment
5	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
6	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
7	1	UEENEEE002B Dismantle, assemble and fabricate electrotechnology components
8	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
9	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
10	1	UEENEEE048B Carry out routine work activities in an electrotechnology environment
11	1	UEENEEE004B Solve problems in multiple path DC circuits
12	1	UEENEEE002B Dismantle, assemble and fabricate electrotechnology components
13	1	UEENEEE001B Apply OHS practices in the workplace
14	1	UEENEEE004B Solve problems in multiple path DC circuits
15	1	UEENEEE003B Solve problems in extra-low voltage single path circuits

Section II

Question	Marks	Unit of competency/Element of competency
16 (a)	4	UEENEEE002B Dismantle, assemble and fabricate electrotechnology components
16 (b)	3	UEENEEE002B Dismantle, assemble and fabricate electrotechnology components
17 (a)	5	UEENEEE004B Solve problems in multiple path DC circuits
17 (b)	2	UEENEEE004B Solve problems in multiple path DC circuits
18 (a)	2	UEENEEEC010B Deliver a service to customers
18 (b)	2	UEENEEEC010B Deliver a service to customers
18 (c)	3	UEENEEEC010B Deliver a service to customers
19 (a)	1	UEENEEE004B Solve problems in multiple path DC circuits
19 (b)	2	UEENEEE004B Solve problems in multiple path DC circuits
19 (c)	2	UEENEEE004B Solve problems in multiple path DC circuits
20 (a) (i)	2	UEENEEE003B Solve problems in extra-low voltage single path circuits
20 (a) (ii)	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
20 (a) (iii)	1	UEENEEE003B Solve problems in extra-low voltage single path circuits
20 (b)	5	UEENEEE003B Solve problems in extra-low voltage single path circuits

Section III

Question	Marks	Unit of competency/Element of competency
21	15	UEENEEE001B Apply OHS practices in the workplace UEENEEE048B Carry out routine work activities in an electrotechnology environment

Section IV

Question	Marks	Unit of competency/Element of competency
22 (a)	6	UEENEEE001B Apply OHS practices in the workplace UEENEEE048B Carry out routine work activities in an electrotechnology environment
22 (b)	9	UEENEEC010B Deliver a service to customers UEENEEE001B Apply OHS practices in the workplace UEENEEE048B Carry out routine work activities in an electrotechnology environment Employability skills – Communication