Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

(a) 20

1

(b) 50

1

(c) (i) 115

1

(ii) 230

1

(iii) if one goes out the other still works
or
brighter
accept power (output) is greater
can be switched on/off independently is insufficient

1

(d) the outside/casing is plastic
there is plastic around the wires is insufficient
it is plastic is insufficient

1

and plastic is an insulator
an answer the light fitting is double insulated gains both marks

1

(e) (residual current) circuit breaker
accept RCCB
accept RCBO
accept RCCD
accept RCB
accept miniature circuit breaker / MCB
trip switch is insufficient
breaker is insufficient
do not accept earth wire

1

[8]

Q2.

(a) 4

1

(b) (i) 2

*allow **1** mark for correct substitution ie*

$I = \frac{100}{20}$

provided no subsequent step

2

(ii) 5

*allow **1** mark for correct substitution ie*

$V = \frac{100}{20}$

provided no subsequent step

2

[5]

Q3.

(a) last box ticked

1

(b) (i) use hotter water (than 60 °C)

accept use boiling water

accept use water at any stated temperature above 60 °C

or

add ice cubes

accept add water at any stated temperature below 12 °C

use different temperatures is insufficient

1

(ii) the current increases as the temperature increases

1

(iii) 0.02 (A)

1

(iv) 5 (V)

or

their **(b)(iii)** × 250 correctly calculated

*allow **1** mark for correct substitution ie V = 0.02 × 250*

or

*V = their **(b)(iii)** × 250*

2

(v) the resistance increases

1

[7]