

Name of the Student: _____

Max. Marks : 22 Marks

Time : 22 Minutes

Mark Schemes

Q1.

- (a) (i) any **six** from:
- switch on
 - read both ammeter and voltmeter
allow read the meters
 - adjust variable resistor to change the current
 - take further readings
 - draw graph
 - (of) V against I
allow take mean
 - $R = V / I$
allow take the gradient of the graph
- 6
- (ii) resistor would get hot if current left on
- 1
- so its resistance would increase
- 1
- (iii) 12 (V)
- 0.75×16 gains **1** mark
- 2
- (iv) 15 (Ω)
- 1
- 16 is nearer to that value than any other
- 1
- (b) if current is above 5 A / value of fuse
- 1
- fuse melts
- allow blows / breaks*
- do **not** accept exploded*
- 1
- breaks circuit
- 1
- [15]**

Q2.

(a) decreased

correct order only

1

decreased

1

increased

1

(b) (i) A

reason only scores if A chosen

1

uses least / less energy (in 1 year)

a comparison is required

accept uses least power

accept uses least kWh

1

(ii) greater the volume the greater the energy it uses (in 1 year)

1

(iii) a very small number sampled

accept only tested 3

accept insufficient evidence / data

*allow not all fridges have the same efficiency **or** a correct description*

implying different efficiencies

only tested each fridge once is insufficient

there are lots of different makes is insufficient

1

[7]