

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 | <i>correct order only</i> | 1 |
| | decreased | | 1 |
| | increased | | 1 |
| (b) | (i) | A | |
| | | <i>reason only scores if A chosen</i> | 1 |
| | | uses least / less energy (in 1 year) | |
| | | <i>a comparison is required</i> | |
| | | <i>accept uses least power</i> | |
| | | <i>accept uses least kWh</i> | 1 |
| | (ii) | greater the volume the greater the energy it uses (in 1 year) | 1 |
| | (iii) | a very small number sampled | |
| | | <i>accept only tested 3</i> | |
| | | <i>accept insufficient evidence / data</i> | |
| | | <i>allow not all fridges have the same efficiency or a correct description</i> | |
| | | <i>implying different efficiencies</i> | |
| | | <i>only tested each fridge once is insufficient</i> | |
| | | <i>there are lots of different makes is insufficient</i> | 1 |

[7]