


Name of the Student: _____

Max. Marks : 24 Marks

Time : 24 Minutes

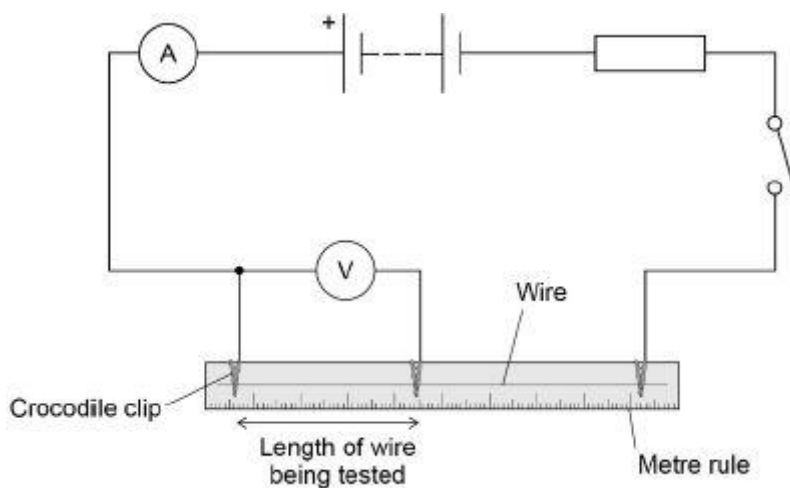
Mark Schemes

Q1.

- (a)  1
- (b) the flow of electrical charge 1
- (c) all 4 components connected in a series circuit
allow a cell instead of a battery
allow an LED or LDR symbol instead of a lamp
ignore the + sign on the battery symbol 1
- (d) decrease the resistance of the variable resistor 1
- (e) $P = 0.75 \times 0.16$ 1
- $P = 0.12 \text{ (W)}$ 1
- (f) charge flow = current \times time
 $Q = It$ 1
- (g) $200 \text{ mA} = 0.2 \text{ A}$ 1
- charge flow = 0.2×15
allow a correct substitution using an incorrectly/not converted value for current 1
- charge flow = 3.0 (C)
allow a correct calculation using an incorrectly/not converted value for current 1
- (h) 1.6 1
- (i) 260 mA to 380 mA 1

Q2.

- (a) both symbols correct and in the correct position



1

- (b) the length of the wire being tested

1

- (c) the resistance of the wire

1

- (d) mean p.d. = $\frac{0.16 + 0.17 + 0.15}{3}$

1

$$\text{mean p.d.} = 0.16 \text{ (V)}$$

1

- (e) $R = 0.32/0.50$

1

$$R = 0.64 \text{ (}\Omega\text{)}$$

1

- (f) power = 0.32×0.50

1

$$\text{power} = 0.16 \text{ (W)}$$

1

- (g) charge flow = 0.50×17

1

$$8.5 \text{ (C)}$$

1

- (h) a straight line through the origin with a lower gradient

1

[12]