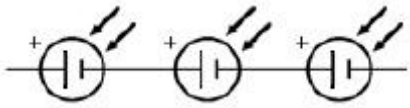
Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

(a) 

1

(b) $\text{current} = \frac{0.70}{2.5}$

1

current = 0.28 (A)

*an answer of 0.28 (A) scores **2** marks*

1

(c) 0.60 (V)

1

product of potential difference and current gives highest value

1

(d) $\text{efficiency} = \frac{\text{useful power output}}{\text{total power input}}$

1

(e) $0.20 = \frac{\text{useful power output}}{2.4}$

1

useful power output = 0.20 × 2.4

1

useful power output = 0.48 (W)

*an answer of 0.48 (W) scores **3** marks*

1

[9]

Q2.

(a) kinetic energy = 0.5 × mass × speed^2

allow E_k = 1/2 mv^2

1

(b) $E_k = 0.5 \times 0.058 \times 5^2$

1

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E_k = 0.725 (J)

*an answer of 0.725 (J) scores **2** marks*

1

(c) 0.725 (J)

allow ecf from (b)

allow the same amount of E_k as at A

1

(d) gravitational potential energy = mass × gravitational field strength × height

allow Ep = mgh

1

(e) 0.38 = 0.058 × 9.8 × h

1

$$h = \frac{0.38}{(0.058 \times 9.8)}$$

1

h = 0.67 (m)

*an answer that rounds to 0.67 scores **3** marks*

1

[8]

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