Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

(a) alternates

accept switches
accept (constantly) changes
accept goes up and down

1

between positive and negative

1

(b) potential difference between the neutral and earth (terminal)

accept voltage for p.d

or potential of the neutral terminal with respect to earth

1

(c) (i) 0.025 (s)

1

(ii) 40 (Hz)

accept 1 ÷ their (a)(i)

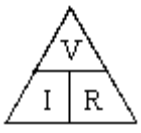
1

[5]

Q2.

(a) (i) potential difference = current × resistance

*accept voltage **or** pd for potential difference*
accept V = I × R
accept correct transformation
*do **not** accept V = C × R*
*do **not** accept V = A × R*

accept 

provided

subsequent use of Δ correct
*do **not** accept an equation expressed in units*

1

(ii) 46

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*credit correct transformation for **1** mark*
allow 1 mark for use of 11.5 V or division of final resistance by 20
*a final answer of 920 gains **2** marks only*

3

ohm(s)

accept symbol Ω
*do **not** accept Ω s*
unit / symbol mark can be awarded in (iii) provided unit / symbol is omitted in (ii)

1

(iii) 920 (ohms) **or** their (a)(ii) × 20

1

(b) as temperature increases, resistance increases

accept hotter for temperature increase
*do **not** accept a reference to resistance only i.e. it / resistance goes up*

1

[7]

Q3.

(i) power = potential difference × current

accept voltage for potential difference
accept P = V × I
***or** correct transposition*

accept 

provided subsequent method correct

1

(ii) 8

*allow **1** mark for correct substitution or transformation **or** an answer 2.67 / 2.7*

2

[3]

Q4.

level drops as petrol used;
causes circuit resistance to increase;
causes current to decrease

for 1 mark each

or if change not specified;
(one correct and two vague statements gains 2 marks,
three vague statements gains 1 mark)
e.g. level changes;)
so resistance changes;) = 1 mark
so current changes)

[3]

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