Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: GCSE Triple Science_ENERGY (High Demand Questions)

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Name of the Student:_____
Max. Marks : 22 Marks **Time : 22 Minutes**

Mark Schemes

Q1.

(a) potential difference

allow p.d.
allow voltage

1

temperature

1

in this order only

(b) the current increases (when the potential difference increases)

1

(which) causes the temperature of the filament to increase

1

(so) the resistance increases

*do **not** accept resistance increases and then levels off*

1

(c) a higher proportion / percentage of the (total) power / energy input is usefully transferred

wastes less energy is insufficient

or
higher (useful) power / energy output for the same (total) power / energy input

1

(d) potential difference increases

1

current decreases

1

(e) 1000 (Ω)

reason only scores if R = 1000 (Ω)

1

potential difference is shared in proportion to the resistance

allow a justification using a correct calculation

1

(f) $12 = I \times 7000$

1

$I = \frac{12}{7000}$

1

$I = 1.71 \times 10^{-3}$ (A)

*an answer that rounds to 1.7 × 10^{-3} (A) scores **3** marks*

1

$I = 1.7 \times 10^{-3}$ (A)

this answer only

or

I = 0.0017 (A)

*an answer of 2.4 × 10^{-3} (A) scores **2** marks*

*if no other marks scored allow **1** mark for calculation of total resistance (7000 Ω)*

1

*an answer of 1.7 × 10^{-3} (A) scores **4** marks*

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Q2.

(a) any **three** from:

- no <u>carbon dioxide</u> emitted (to produce electricity)

  no greenhouse gases is insufficient

- doesn't cause global warming

  allow climate change or greenhouse effect for global warming

- nuclear power doesn't cause earthquakes
- more energy released per kg of fuel (compared to shale gas)

3

(b) uranium
or
plutonium

ignore any numbers given

1

(c) a <u>neutron</u> is absorbed by a (large) nucleus

a description in terms of only atoms negates first two marking points

1

the nucleus splits into two (smaller) nuclei

1

releasing energy (and gamma rays)

1

and (two / three) neutrons

1

[8]