Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Electricity (Standard demand)

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

Mark Schemes

Q1.

(a) $E = P \times t$

91 (p)

an answer £0.91 gains 3 marks
an answer 0.91 gains 2 marks
*allow **2** marks for energy transferred = 18.2 (kWh)*
or
substitution into 2 equations combined, ie 2.6 × 7 × 5
*allow **1** mark for correct substitution into E = P × t, ie E = 2.6 × 7*
or
*allow **1** mark for multiplying and correctly calculating an incorrect energy transfer value by 5*

3

(b) answers should be in terms of supply exceeding demand

accept there is a surplus / excess of electricity (at night)

1

(c) reduce (rate of) energy transfer (from ceramic bricks)

accept heat for energy
*do **not** accept no energy / heat escapes*
*do **not** accept answers in terms of lost / losing heat if this implies heat is wasted energy*

1

so keeping the (ceramic) bricks hot for longer

accept increase time that energy is transferred to the room
accept keep room warm for longer

or

to stop the casing getting too hot

accept so you do not get burnt (on the casing)

1

(d) $E = m \times c \times \theta$

120

*allow **1** mark for correct substitution*
ie 9 000 000 = m × 750 × 100

2

[8]

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Q2.

(a) (i) food processor
hairdryer
both required and no other
either order

1

(ii) TV
Table lamp
Food processor
all required and no other
any order

1

(b) any **two** from:

- transfers / requires / uses more energy / power
  accept more electricity used
  accept higher power
- more electricity needs to be generated
- more (fossil) fuels (likely) to be burnt
  accept a named fossil fuel

2

(c) (i) precise
this answer only

1

(ii) any **three** from:

- can look for trends / patterns
- help reduce energy use / consumption
- reduce bills
  accept save money
- identify appliances which use a lot of energy
- replace appliances with more efficient ones
- see effect of leaving appliances on (standby)
  to monitor usage is insufficient
  answers in terms of environment are insufficient

3

[8]

Q3.

(a) (i) also double
increases is insufficient

1

(ii) <u>variable</u> resistor
accept rheostat / potentiometer

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1

(b) (i) the data / results / variables are continuous

accept data / results / variables are not categoric / discrete

1

(ii) misreading the ammeter

*do **not** accept misreading the meter / results*

*do **not** accept misreading the ammeter and / or voltmeter*

reading / human error is insufficient

1

(iii) straight line <u>from the origin</u> drawn passing close / through points at 1 V, 5 V, 6 V and ignoring anomalous point

*do **not** accept line drawn 'dot-to-dot'*

1

(iv) yes

mark is for the reason

supports prediction

or

(straight) line passes through the origin

accept a mathematical argument, eg when p.d. went from 2 to 4 the current went from 0.3 to 0.6

it's directly proportional is insufficient

1

[6]

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