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

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Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Mark Schemes

Q1.

(a) £15

*allow **1** mark for use of 125 (kWh)*
*allow **1** mark for an answer 1500*
*allow **both** marks for 1500 pence / p*
*allow **1** mark for correct calculation of annual cost for either freezer (£27 and £42)*

2

(b) £45

or their (a) × 3

*allow **1** mark for correct use of 3*
*allow **1** mark for 12 – 9 = 3*

2

(c) any **two** from:

the marks are for the explanation

yes **plus** explanation

- less electricity / energy needed / used
  accept less energy wasted
- less (fossil) fuels burned
  accept a named fossil fuel
  *do **not** accept conserving (fossil) fuels*
- less polluting gases emitted
  accept a named polluting gas / greenhouse gases / carbon emissions / reduce global warming
  accept an answer in terms of nuclear fuel
  eg less nuclear fuel required (1)
  less nuclear waste (1)

2

or no **plus** explanation

- old freezer must be disposed of
- hazardous chemicals inside freezer
  accept CFC gases

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- *(*lot of*)* energy used in producing new freezer

[6]

Q2.

(a) (i) ammeter symbol correct and drawn in series

accept 

*do **not** accept lower case a*

1

voltmeter symbol correct and drawn in parallel with the material

*do **not** accept* 

1

(ii) adjust / use the variable resistor

accept change the resistance

or change the number of cells

accept battery for cell
accept change the p.d / accept change the voltage
accept increase / decrease for change

1

(b) (i) data is <u>continuous</u> (variable)

1

(ii) 36 (Ω)

correct answer only

1

(iii) 5.4 or their (b)(ii) × 0.15

*allow **1** mark for correct substitution*

2

(c) (i) the thick<u>er</u> the putty the low<u>er</u> the resistance

answer must be comparative
accept the converse

1

(ii) any **one** from:

- measuring length incorrectly
  accept may be different length
- measuring current incorrectly
  *do **not** accept different currents*
- measuring voltage incorrectly
  *do **not** accept different voltage*
- ammeter / voltmeter incorrectly calibrated
- thickness of putty not uniform
- meter has a zero error

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accept any sensible source of error eg putty at different temperatures
*do **not** accept human error without an explanation*
*do **not** accept pieces of putty not the same unless qualified*
*do **not** accept amount of putty not same*
*do **not** accept systematic / random error*

1

(iii) repeat readings

accept check results again
accept do experiment again
accept do it again
accept compare own results with other groups
*do **not** accept take more readings*

1

[10]

Q3.

(a) clothing and seat rub together

accept friction between clothing and seat

1

<u>electrons</u> transfer from seat to driver

or

<u>electrons</u> transfer from driver to seat

accept electrons transfer on its own if first mark scores
*an answer in terms of rubbing, between clothing and seat **and** charge transfer without mention of electrons gains **1** mark*
*an answer in terms of friction / rubbing **and** electron transfer without mention of clothing and seat gains **1** mark*

1

(b) (i) how wet the air is affects charge (build up)

accept humidity affects charge

or

damp air is a better conductor

or

damp air has a lower resistance

*do **not** accept fair test or as a control unless explained*

1

(ii) No – it was only the lowest under these conditions

accept answer in terms of changing the conditions may change the results

or

No – there are lots of other materials that were not tested

or

Yes – the highest value for cotton is smaller than the lowest value for

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the other materials

*do **not** accept results show that it is <u>always</u> less / smallest*

1

[4]

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