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

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

(a) 1 080 000

*allow **1** mark for correct substitution*
ie ½ × 15 000 × 12 × 12

2

(b) any **one** from:

- KE (of wind) more than doubles
- mass of air (hitting blades) more than doubles
- area swept out by blades more than doubles
  *do **not** accept blades are larger / have a bigger area*
- area swept out by blades increases × 4

1

[3]

Q2.

(a) (i) 4

*allow **1** mark for correct transformation and substitution*
ie $\frac{0.6}{0.15}$
substitution only scores if no subsequent steps are shown

2

(ii) diagram showing two output arrows with one arrow wider than the other with the narrower arrow labelled electrical / electricity / useful

1

(b) any **one** from:

- to check reliability / validity / accuracy
- to avoid bias

1

(c) any **two** from:

- produce no / less (air) pollution
  accept named pollutant

accept produces no waste (gases)

- energy is free
  accept it is a free resource
  *do **not** accept it is free*
- (energy) is renewable
- conserves fossil fuel stocks
- can be used in remote areas
- do not need to connect to the National Grid

2

[6]

Q3.

(a) (i) (dismantle and) remove radioactive waste / materials / fuels
accept nuclear for radioactive
*do **not** accept knock down / shut down*

1

(ii) increases it
*do **not** accept it has a negative effect*

1

(b) (i) *if efficiency is not mentioned it must be implied*
answers in terms of energy
generated only gains no credit

K most efficient
or
M least efficient
*accept **K** and / or **L** are more efficient than **M***

1

(efficiency) of **K** and **L** increases, (efficiency) of **M** (almost) constant / slightly reduced
all 3 power stations must be mentioned to get this mark

1

(ii) any **two** from:

- do not know how many (nuclear) power stations there will be
- power stations may continue to increase in efficiency
- do not know what type of power station new ones will be
  accept new methods may be found to generate electricity / energy
  accept other ways of generating energy may be expanded
- do not know future energy / electricity demands
  accept we may become more energy efficient
- may be new uses for uranium

2

[6]

Q4.

(a) (i) 0.75

*allow **1** mark for correct transformation and substitution*
ie 0.15 = 5

2

(ii) 2

accept 1.5 ÷ their (a)(i) correctly calculated

1

(b) any **one** from:

- seasonal <u>changes</u>

  accept specific <u>changes</u> in conditions
  eg shorter hours of daylight in winter

- cloud cover

  accept idea of <u>change</u>
  must be stated or unambiguously implied
  eg demand for water will not (always) match supply of solar energy
  *do **not** accept figures are average on its own*
  *do **not** accept solar panels are in the shade*

1

[4]