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

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Name of the Student:_____

Max. **Marks : 24 Marks**   **Time : 24 Minutes**

Mark Schemes

Q1.

    (a)   4200

         *allow **2** marks for correct substitution*
         ie 6930 = 0.330 × c × 5.0
         *answers of 1050 **or** 840*

         or

         correctly calculated answer from correct substitution of incorrect
         temperature change

         or

         identification of temperature change ie 5 °C
         *gain **1** mark*

         3

      J / kg°C

         accept J / kg K

         1

    (b)   (in a metal) free electrons

         to gain full credit the answer must be in terms of free electrons

         1

      gain kinetic energy

         accept move faster

         1

      (free electrons) transfer energy to other electrons / ions / atoms

         *do **not** accept particles*

         1

      by collision

         *allow a maximum of **2** marks for answers in terms of atoms / ions /*
         particles
         •   *gaining kinetic energy or vibrating faster / more*
         •   *transferring energy by collisions*

         1

    (c)   (air) particles spread out

         1

      (which causes the) air to become less dense / expand

         *do **not** accept particles become less dense*

         1

(so the) warm air rises

> *do **not** accept heat rises*
> *particles rise is insufficient*

1

(d) large surface area

> *ignore references to type of metal or external conditions*

1

black / dark (colour)

1

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Q2.

(a) (i) decreases (to zero)

1

resultant force acts in opposite direction to motion

> *accept air resistance and weight for resultant force*
> *accept resultant force acts downwards*
> *do **not** accept air resistance increases*

1

(ii) velocity includes direction
or
velocity is a vector (quantity)

1

(b) (i) 3.6

> *allow 1 mark for correct substitution i.e.*
> $\frac{1}{2} \times 0.05 \times 12^2$ *provided no subsequent step*

2

(ii) 3.6 **or** their (i)

1

(iii) 7.2
or
their (ii) ÷ 0.5 correctly calculated

> *allow **1** mark for correct substitution i.e.*
> *3.6 or their (ii) = 0.05 × 10 × h*

2

(iv) **B**

1

(c) range increases up to 45°

1

range decreases from 45°

> *the range is a maximum at 45° gains both marks*
> *for any two angles that add up*
> *to 90° the range is the same gains both marks*
> *the range increases then decreases gains **1** mark*

1

[11]