Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic: Magnetism And Electromagnetism (High Demand Questions)

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

Mark Schemes

Q1.

(a) thumb, index finger and third finger are held mutually at right angles **1**

index finger shows the direction of the magnetic field from North to South, third finger shows the direction of the current from positive to negative terminal **1**

the thumb then shows the direction of the force acting on the copper rod **1**

so the copper rod will move upwards **1**

(b) any **one** from:

use a stronger magnet

increase the magnetic flux density

increase the length of the copper rod in the magnetic field

coil the copper rod **1**

(c) $W = 9.8 \times 4\times10^{-4} = 3.92 \times 10^{-3}$ **1**

conversion of the length 7cm to 0.07m **1**

$3.92 \times 10^{-3} = B \times 1.12 \times 0.07$ **1**

$B = 3.92 \times 10^{-3} / 0.0784$ **1**

B = 0.05 (T) **1**

*allow 0.05 (T) without working shown for the **5** calculation marks*

[10]

Q2.

(a) north (pole)

accept N

north (pole)

both needed for mark

1

(b) reverses

accept changes direction

1

(c) (i) first finger:
(direction of) (magnetic) field

1

second finger:
(direction of) (conventional) current

1

(ii) into (plane of the) paper

1

(iii) less current in wire

accept less current / voltage / more resistance / thinner wire

1

weaker field

allow weaker magnets / magnets further apart

*do **not** accept smaller magnets*

1

rotation of magnets (so) field is no longer perpendicular to wire

1

(d) (i) reverse one of the magnets

*do **not** accept there are no numbers on the scale*

1

(ii) systematic or zero error

accept all current values will be too big

accept it does not return to zero
accept it does not start at zero

1

[10