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

Mark Schemes

Q1.

(a) increase the current (1)

credit increase the p.d./voltage
credit reduce the resistance
credit have thicker wiring
credit add extra / more cells

1

increase the magnetic field (strength) (1)

credit 'have stronger magnet(s)
*do **not** credit 'bigger magnets' either order*

1

(b) **either** reverse polarity

or connect the battery the other way round

1

either reverse direction of the magnetic field

or put the magnet the other way round / reverse the magnet

*do **not** give any credit to a response in which both are done at the same time*
either order

1

(c) **either**

conductor parallel to the magnetic field

or lines of magnetic force and path of electricity do not cross

1

[5]

Q2.

(i) relay

accept solenoid
*do **not** accept magnetic switch*

1

(ii) a current flows through the coil (of the electromagnet)
or a current flows through the electromagnet
or a (magnetic) field is produced

accept 'electricity' for 'current'
*accept the electromagnet is activated **or** magnetised **or** turned on*
*do **not** accept answer in terms of magnetic charge*

1

the (iron) arm is attracted to the electromagnet
*accept the arm pivots **or** moves towards the electromagnet*

1

the contacts are pushed together
*do **not** accept contacts attract*

1

[4]

Q3.

(i) iron
for 1 mark

1

(ii) 20
gains 2 marks

else working
gains 1 mark

2

(iii) reverse input/output
for 1 mark

or increase secondary turns

1

[4]

Q4.

(a) (i) it moves or experiences a force horizontally to the right
for 1 mark

1

(ii) A – moves in opposite direction or force reversed e.c.f.
B – faster movement or larger force
(**not** move further)
for 1 mark each

2

(b) turns clockwise
oscillates/reverses
comes to rest facing field/at 90^{o} to field/vertically
for 1 mark each

3

(c) number of turns or linear number density of turns current core
for 1 mark each

3

[9]