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

Mark Schemes

Q1.

(a) *there is a* magnetic field *(around the magnet)*

1

(this magnetic field) changes / moves

1

and cuts through coil
accept links with coil

1

so a p.d. *induced* across coil

1

the coil forms *a* complete circuit

1

so a current (*is* induced)

1

(b) ammeter reading does not change
must be in this order
accept ammeter has a small reading / shows a current

1

zero

1

greater than before
accept a large(r) reading

1

same as originally but in the opposite direction
accept a small reading in the opposite direction

1

(c) 0.30
*allow **1** mark for correct substitution, ie 0.05 = Q / 6*

2

C / coulomb
allow A s

1

[13]

Q2.

(a) (i) increase

1

(ii) A and B
and
B and C

both required for the mark

either order

1

(iii) any **two** from:

- size of nail
  or
  nail material
  allow (same) nail
- current
  allow (same) cell
  allow p.d.
  same amount of electricity is insufficient
- (size of) paper clip
- length of wire
  accept type / thickness of wire

2

(b) 4

1

B picks up the same number as C, so this electromagnet would pick up the same number as A
or
direction of current does not affect the strength of the electromagnet

allow it has got the same number of turns as A

1

(c) 2

allow 1 or 3

1

[7]