

Name of the Student: _____

Max. Marks : 17 Marks

Time : 17 Minutes

Mark Schemes

Q1.

(a) (i) Iron 1

(ii) 50
ignore references to current
reason only scores if 50 chosen 1

there are more turns on the secondary coil (than the primary coil)
accept it is a step-up transformer
not more coils 1

(b) (i) 200 1

(ii) any **one** from:
• Lighter
• smaller
• use very little power / current (when switched on with no load / phone attached).
accept more efficient
do not accept uses no power / current
a disadvantage of a traditional transformer is insufficient on its own 1
[5]

Q2.

(a) motor 1

(b) increase the strength of the magnetic field
accept use a stronger magnet
use a larger / bigger magnet is insufficient
*do **not** accept move magnets closer* 1

increase the (size of the) current
accept use a current greater than 2 (A)
accept increase the p.d. / voltage (of the power supply)
increase the power supply is insufficient

- (c) any **one** from:
- (reverse the) direction of the current
accept swap the wires at the power supply connections
swap the wires around is insufficient
 - (change the) direction of the magnetic field
accept turn the magnet around
*do **not** accept use an a.c. supply*

1

- (d) The wire is parallel to the direction of the magnetic field.

1

[5]

Q3.

- (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

