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

Mark Schemes

Q1.

(a) (i) (quickly) becomes magnetized
or *(quickly) loses its magnetism*
or *'it's (a) magnetic (material)'*
any reference to conduction of electricity/heat nullifies the mark

1

(ii) any **four** from:

- insulation prevents electricity/current flowing through the iron/core
  or *'insulation so electricity/current only flows in the wires/turns/coils'*
- <u>alternating</u> current/a.c. in the primary (coil)
- produces a <u>changing</u> magnetic field (in the iron/core)
- (and hence magnetic) field in the secondary (coil)
- induces/generates/produces an <u>alternating</u> potential difference/p.d./voltage across the secondary (coil)
- (and hence) <u>alternating</u> current/a.c. in the secondary (coil)

4

(b) 80 (turns)
or *credit (1) for any equation which <u>if correctly evaluated</u> would give 80 example*
example

$$\frac{230}{5.75} = \frac{3200}{number\ of\ turns}$$

2

[7]

Q2.

(a) (i) secondary(coil) / output (coil)
*do **not** accept just coil*

1

(ii) <u>core</u>
*do **not** accept for either mark it is made out of iron ore*

1

(laminated soft) iron

*allow **1** mark for 'it is made out of iron core'*

1

(iii) magnetic field

accept magnetism / magnetic force

1

(which is) changing / alternating

direction (of field) changes / strength (of field) varies

scoring second mark is dependent on first mark

1

(b) ...step-up .... step-down ...

both in the correct order

1

(c) Do not build new houses ....

1

Build new power lines away ....

*deduct **1** mark for any other(s) to a minimum total of (0)*

1

[8]

Q3.

(a) plastic or rubber

accept any named plastic
*do **not** accept wood*

1

it is a (good) insulator **or** it is a poor conductor

ignore mention of heat if in conjunction with electricity

1

(b) *The answer to this question requires ideas in good English in a sensible order with correct use of scientific terms. Quality of written communication should be considered in crediting points in the mark scheme.*

Maximum of 2 marks if ideas not well expressed.

pulls iron bolt down **or** attracts the iron bolt **or** moves bolt out of plunger

answers in terms of charges attracting
or repelling gain no credit

1

plunger pushed / moved to the right (by spring) **or** plunger released

1

push switch opens / goes to off / goes to right

accept circuit is broken

for maximum credit the points must follow a logical sequence

*3 correct points but incorrect sequence scores **2** marks only*

ignore reset action

1

[5]