Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

(a) current flows
coil / core magnetised / electromagnet activated / energised / turned on
attracts iron bar causing bolt to be pulled out
each for 1 mark

4

(b) more turns
bigger current / e.m.f
softer iron core
any two for 1 mark each

2

(c) to relock door / return iron bar / to lock door
for 1 mark

1

(d) iron bar would still be attracted / coil still magnetised so still works
for 1 mark each

yes + wrong answer
0 marks

yes + current still flows
1 mark

yes + still magnetised / iron bar still attracted
2 marks

2

[9]

Q2.

electromagnet becomes <u>stronger</u> (*not* becomes magnetic) iron moves left – implied OK
plunger goes up push switch goes to off or circuit broken unless plunger moves down
for 1 mark each

[4]

Q3.

Quality of written communication: One mark for correct sequencing.
bolt out → plunger up → switch off / circuit broken

1

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any **five** from

- high current flows
- electromagnet is stronger
- the iron bolt is pulled out
- the plastic plunger moves up
- the switch is lifted / open / off
  accept circuit is broken
- no current flowing
- to re-set the plunger must be pushed down

5

[6]

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