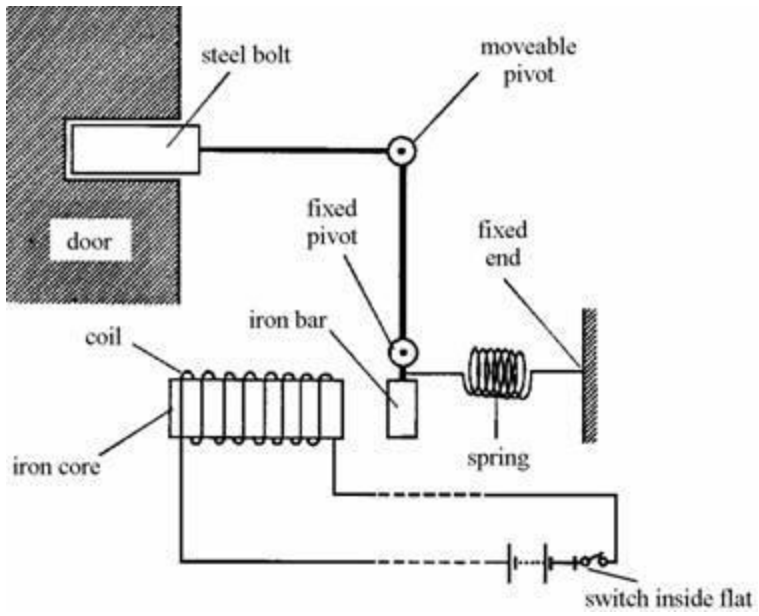
Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

The diagram below shows a door lock which can be opened from a flat inside a building.



(a) Explain how the door is unlocked when the switch is closed.

_____

_____

_____

_____

(4)

(b) State **two** changes which would increase the strength of the electromagnet.

1. _____

2. _____

(2)

(c) Why is the spring needed in the lock?

_____

_____

(1)

(d) The connections to the coil were accidentally reversed. Would the lock still work?

_____

Explain your answer.

_____

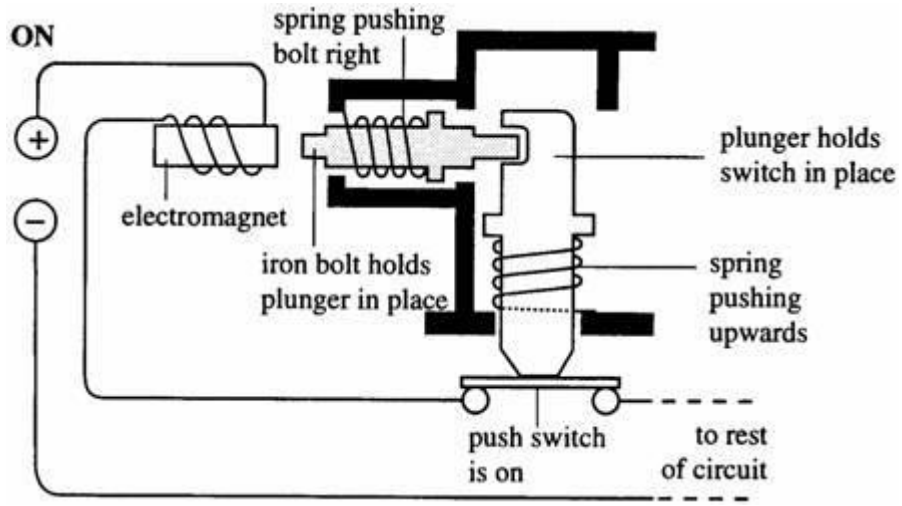
_____

(2)

(Total 9 marks)

Q2.

A fault in an electrical circuit can cause too great a current to flow.
Some circuits are switched off by a circuit breaker.



One type of circuit breaker is shown above. A normal current is flowing.
Explain, in full detail, what happens when a current which is bigger than normal flows.

_____

_____

_____

_____

_____

_____

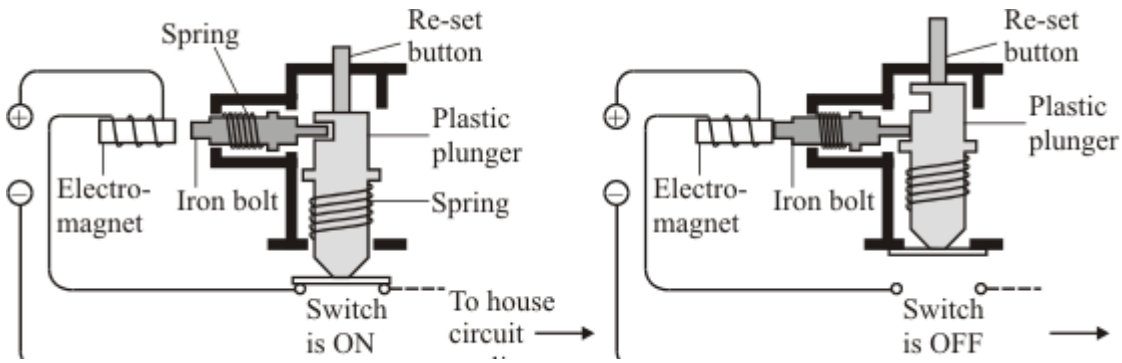
_____

_____

(Total 4 marks)

Q3.

Circuit breakers help to make the electricity supply in homes safer.
A circuit breaker is an automatic safety switch. It cuts off the current if it gets too big.



Describe, in as much detail as you can, how this circuit breaker works.

To gain full marks in this question you should write your ideas in good English. Put them into a sensible order and use the correct scientific words.

(Total 6 marks)