

| Question number | Answer  | Notes   | Marks |
|-----------------|---|---|-------|
| 7 a             | Any FOUR from:<br>MP1. Current in <u>coil</u> ;<br>MP2. (Creates) magnetic field (around the wires of the coil);<br>MP3. Interaction of (this) field with that of (permanent) magnets;<br>MP4. There is a force on the wire(of coil);<br>MP5. Reference to left hand rule;<br>MP6. force up on one side and down on other side; | current in circuit is not enough<br>coil becomes an electromagnet<br><br>allow field cutting as the interaction<br><br>idea of catapult field<br><br>reference to moment/turning effect on the coil | 4     |
| b i             | one of <ul style="list-style-type: none"> <li>Reverse supply polarity (however described);</li> <li>reverse current direction (however described);</li> <li>swap magnets over(however described);</li> </ul>  |   | 1     |
| ii              | any one from: <ul style="list-style-type: none"> <li>Reduce current (however described);</li> <li>Reduce voltage (however described);</li> <li>increase resistance of circuit (however described);</li> <li>weaker magnetic field (however described);</li> </ul>   | Allow : less turns on coil<br>Condone: fewer coils  | 1     |

(Total for Question 7= 6 marks)