

Electromagnetic Effects – 2022 June O Level 5054

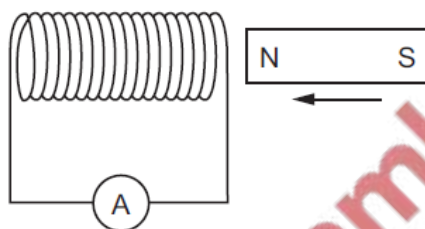
1. [June/2022/Paper_11/No.27](#)

Which material is used for the core of an electromagnet?

- A aluminium
- B copper
- C iron
- D steel

2. [June/2022/Paper_11/No.36](#)

As a magnet is moved into the coil of wire as shown, there is a small positive reading on the sensitive ammeter.

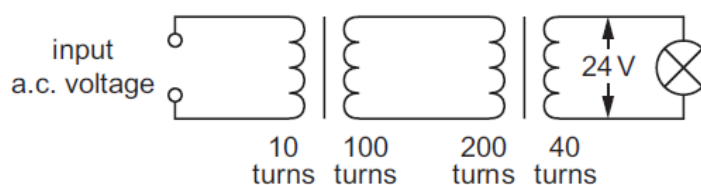


Which change **must** increase the size of the reading?

- A moving the opposite pole into the coil
- B pulling the magnet out of the coil
- C pushing the magnet in faster
- D unwinding some of the turns of wire

3. [June/2022/Paper_11/No.37](#)

The diagram shows the circuit for a model power line with two transformers and a lamp at the output.



What is the input voltage?

- A 0.12 V
- B 6.0 V
- C 12 V
- D 96 V

4. June/2022/Paper_11/No.38

Electrical power is transmitted by cables over long distances at very high voltages.

What are the effects of using a high voltage transmission system?

	power loss in the cables	current in the cables
A	high	high
B	high	low
C	low	high
D	low	low

5. June/2022/Paper_11/No.39

The diagram shows a beam of electrons about to enter a magnetic field. The magnetic field is directed into the page.

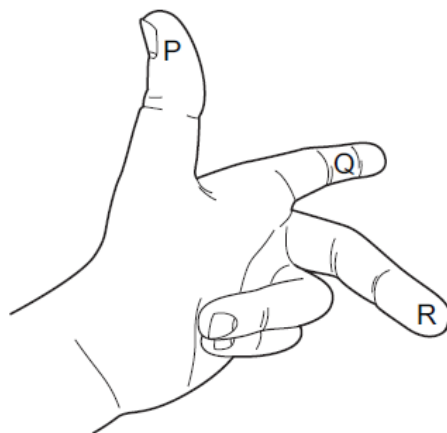


What is the direction of the deflection of the electrons as they enter the magnetic field?

- A into the page
- B out of the page
- C up the page
- D down the page

6. June/2022/Paper_12/No.38

A left hand can be used to determine the direction of the force when a current-carrying conductor is perpendicular to a magnetic field.

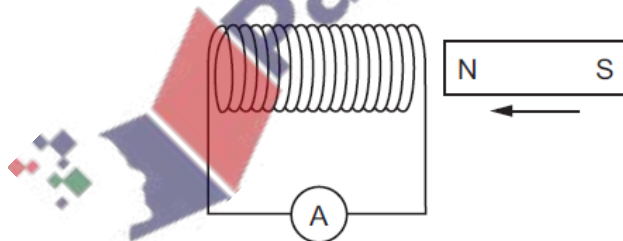


Which quantities are represented by the direction of fingers P, Q and R?

	P	Q	R
A	current	field	force
B	field	force	current
C	force	current	field
D	force	field	current

7. June/2022/Paper_12/No.39

As a magnet is moved into the coil of wire as shown, there is a small positive reading on the sensitive ammeter.



Which change must increase the size of the reading?

- A** moving the opposite pole into the coil
- B** pulling the magnet out of the coil
- C** pushing the magnet in faster
- D** unwinding some of the turns of wire

8. June/2022/Paper_12/No.40

Electrical power is transmitted by cables over long distances at very high voltages.

What are the effects of using a high voltage transmission system?

	power loss in the cables	current in the cables
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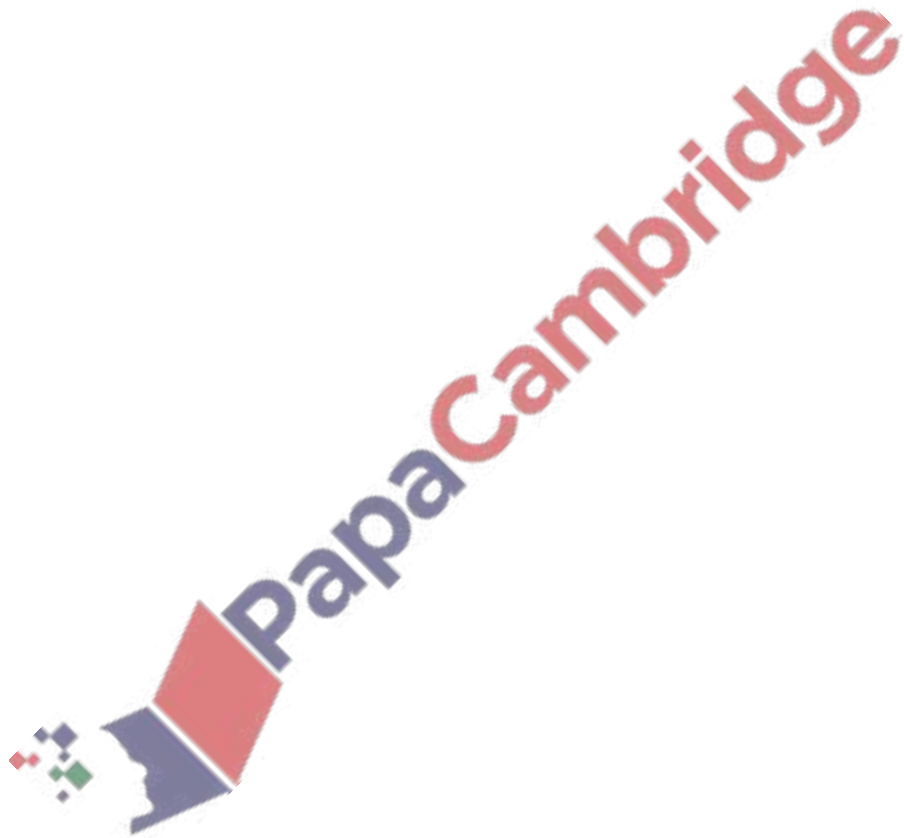


Fig. 5.1 shows a simple d.c. motor used in a toy car.

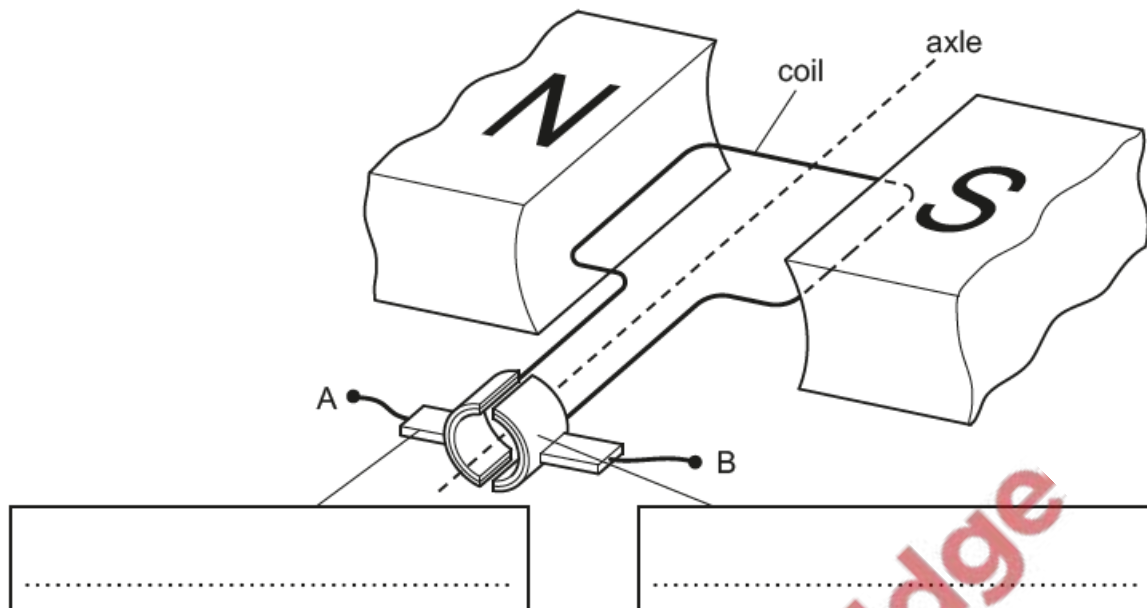


Fig. 5.1

Terminals A and B are connected to a battery and the motor rotates.

(a) On Fig. 5.1, add labels inside the boxes to identify the parts of the motor indicated. [2]

(b) State what happens to the rotation of the coil when:

(i) the number of turns on the coil is increased

..... [1]

(ii) the magnetic field between the poles of the magnet is reversed.

..... [1]

(c) The power supply to the motor is switched on and off at a steady rate.

Fig. 5.2 shows how the speed of the toy car varies with time as a result of the power supply being switched on and off.

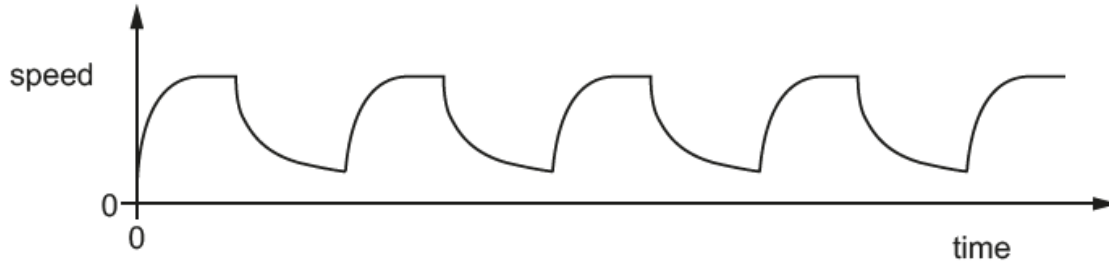


Fig. 5.2

(i) Describe the motion of the toy car.

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..... [2]

(ii) The voltage supplied to the motor is switched on for a longer period of time and off for a longer period of time, at a steady rate.

Suggest what happens to the motion of the toy car.

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..... [1]

[Total: 7]