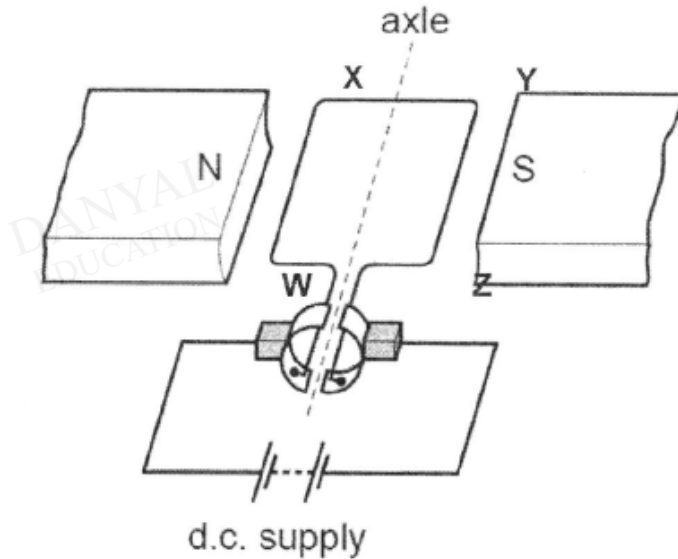


O Level Pure Physics MCQs

Electromagnetism Test 1.0

Q1

The diagram below shows a simple d.c. motor.



When the switch is closed, which of the following statements is/are correct?

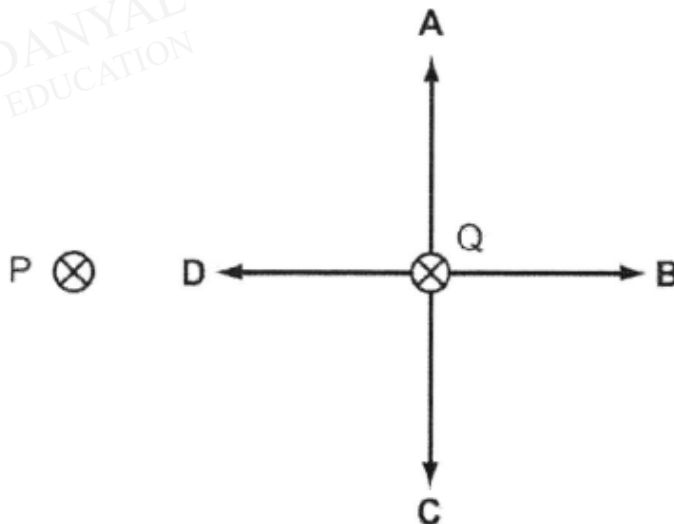
- I A current will flow round the coil in the direction **WXYZ**.
- II The coil will rotate in a clockwise direction about the axle.
- III The split-ring commutator will reverse the direction of the current every 360° .

- | | | | |
|----------|----------------|----------|---------------|
| A | I only | B | I and II only |
| C | I and III only | D | I, II and III |

Q2

P and Q represent two, parallel, straight wires carrying currents into the plane of the paper. P and Q exert a force on each other.

Which arrow shows the force on Q?



Q3

Equal amount of current is flowing in two insulated wires, perpendicular to each other as shown in Fig. 36.1.

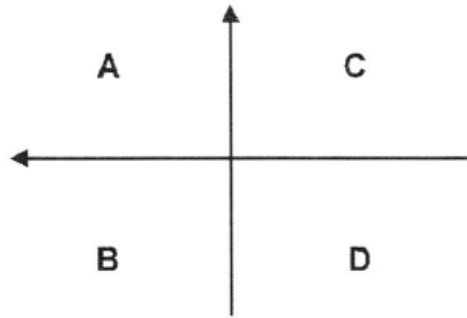
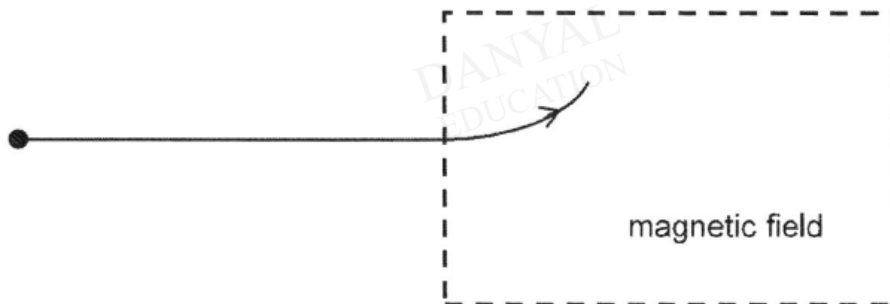


Fig. 36.1

Which segment, **A**, **B**, **C** or **D** has the strongest magnetic field flowing into the paper?

Q4

An electron enters a region with a magnetic field. It is deflected upwards as shown in the diagram below.



What is the direction of the magnetic field in the region?

- A into the plane of paper
- C upwards

- B out of the plane of paper
- D downwards

Q5

Each of the diagrams below is a cross-section through two parallel current-carrying conductors. Which diagram correctly shows the magnetic field pattern formed by the currents in the two conductors?

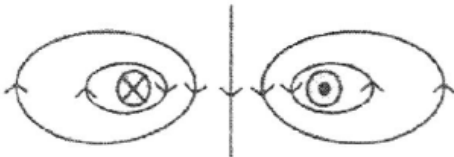
A



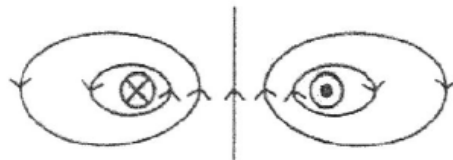
B



C

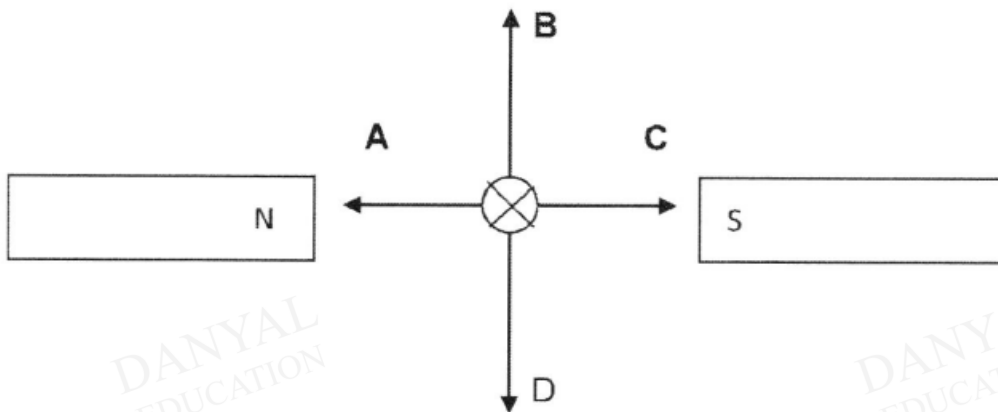


D



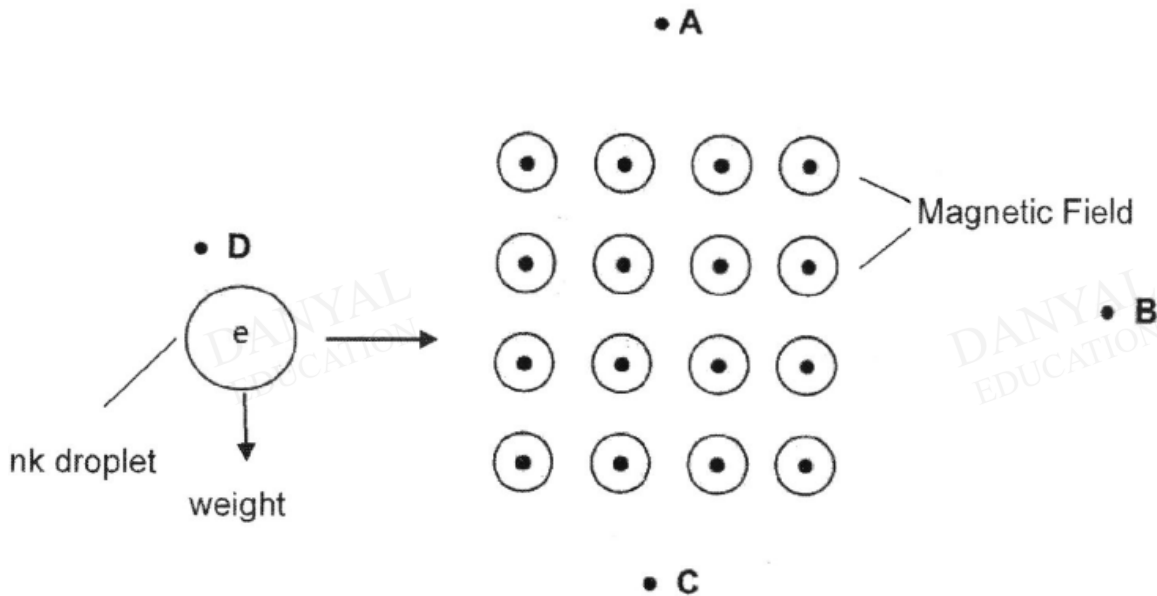
Q6

The diagram below shows an induced current flowing through a conductor while it is moving between two magnets. Which arrow indicates the direction of movement of the conductor?



Q7

In an experiment to test the prototype of an inkjet printer, an ink droplet is negatively charged and ejected horizontally into a magnetic field as shown in the diagram below.



If the resulting magnetic force is 1 N and the mass of the ink droplet is 0.1 kg, at which point, A, B, C or D, would the ink droplet land at the end of the experiment?

Q8

The diagram shows a beam of electrons moving in the direction shown.

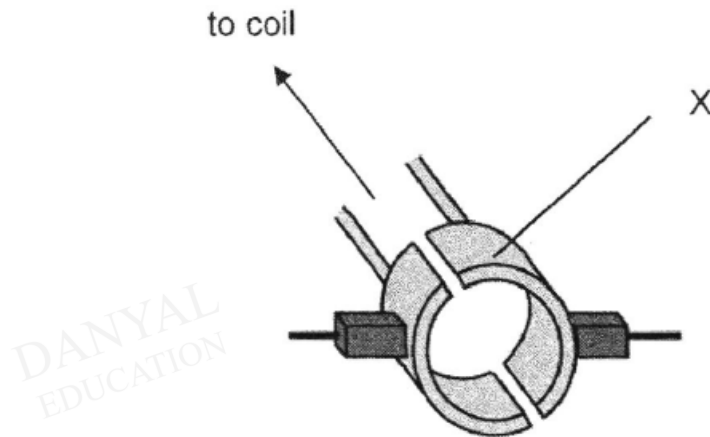


What will happen to the beam of electrons as they enter into a magnetic field that goes into the plane of the paper?

- A continue moving in the same direction and accelerates
- B continue moving in the same direction and decelerates
- C deflect downwards
- D deflect upwards

Q9

The diagram shows part of a d.c. motor.

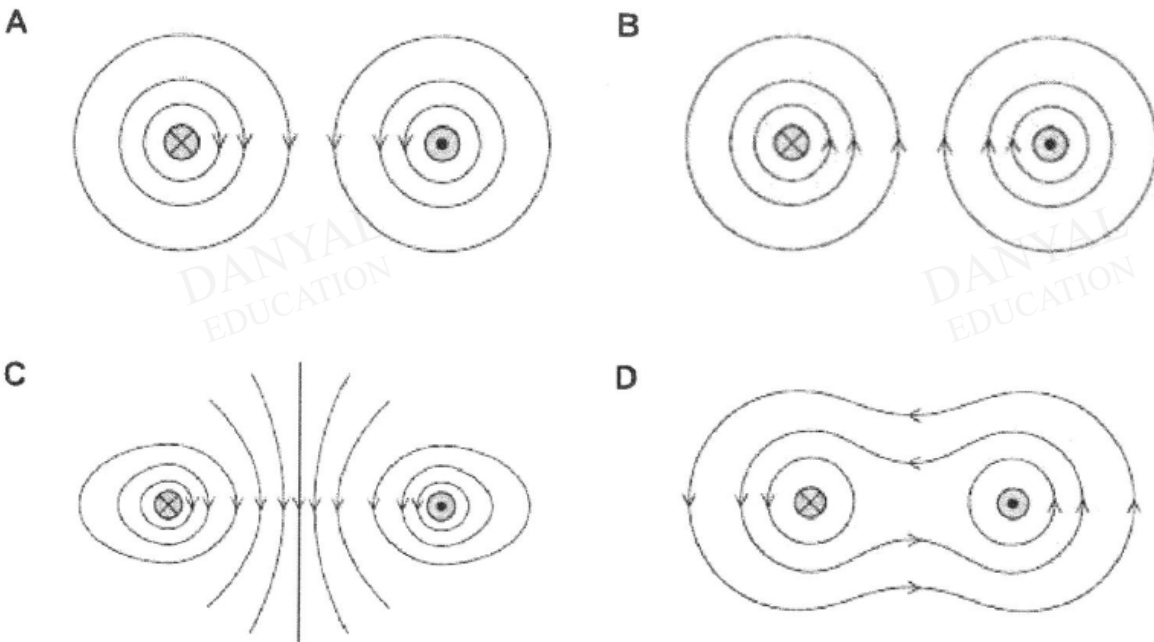


What is the function of X?

- A to control the speed of rotation
- B to provide a magnetic field
- C to reverse the direction of current in the coil every half a revolution
- D all of the above

Q10

Which diagram shows the correct magnetic field around two parallel wires carrying a current?



Answers

Electromagnetism Test 1.0

Q1 A

Q2 D

Q3 C

Q4 B

Q5 C

Q6 B

Q7 B

Q8 C

Q9 C

Q10 C

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