

Signature: Name: Marks:

Fleming's LH and RH Rule

Q1.

In the figure below, opposite poles of a pair of magnet magnets face each other with a current-carrying conductor in the magnetic field. The current flows out of the paper. On the figure, draw the resultant catapult field.

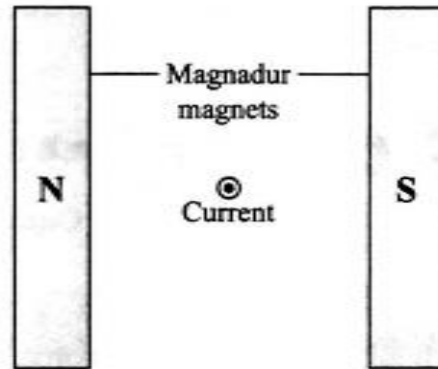


Figure 1

Q2.

The figure below shows a d.c. motor.

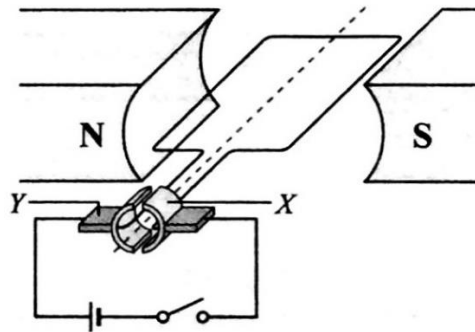


Figure 2

- Name the parts labelled X and Y.
- On the figure,
 - Indicate with arrows the direction of the current in the coil.
 - Mark the direction of rotation of the coil.

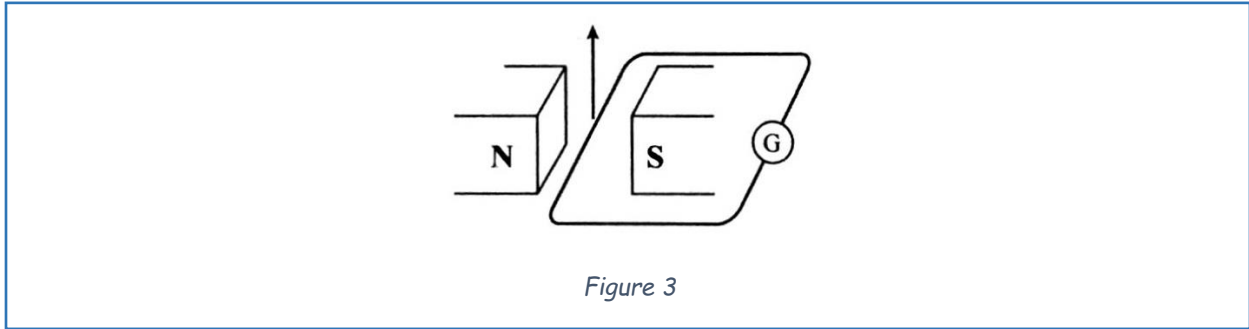
Signature:

Name:

Marks:

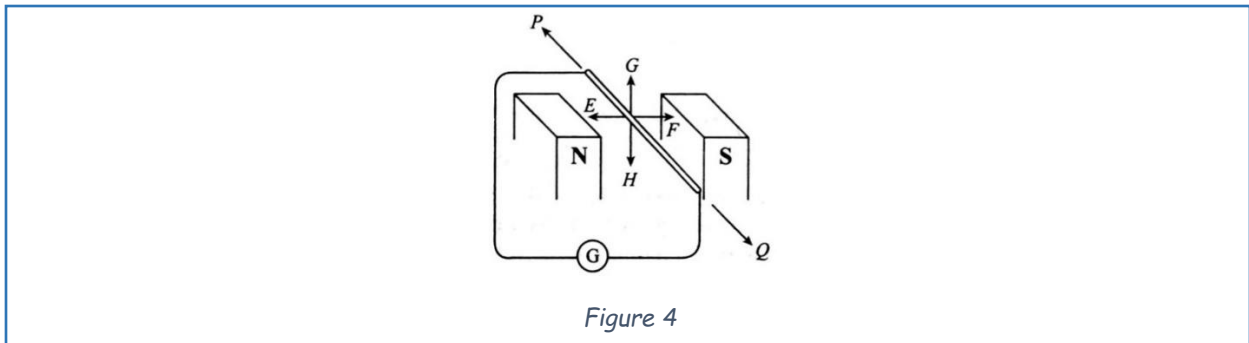
Q3.

Draw the direction of induced current.



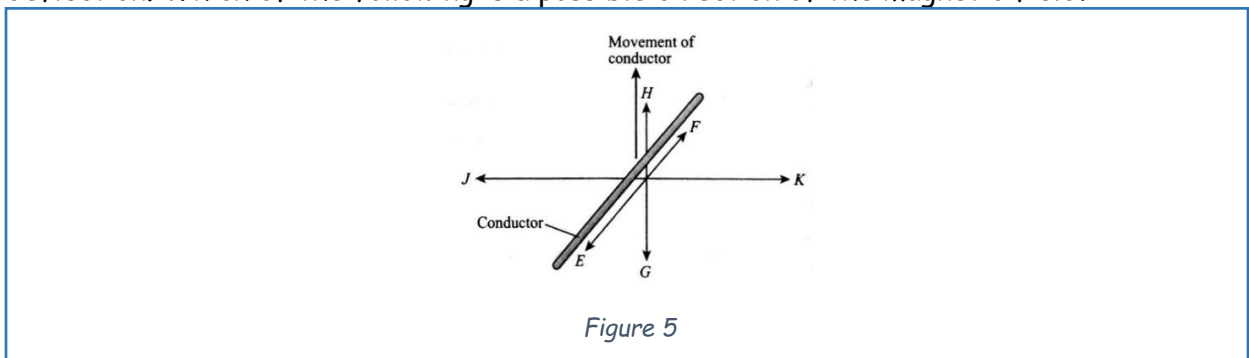
Q4.

In the figure below, which direction of movement of the conductor will result in a momentary deflection in the galvanometer?



Q5.

The figure below shows a conductor moving in a magnetic field. The galvanometer shows a deflection. Which of the following is a possible direction of the magnetic field?



Signature: Name: Marks: **Q6.**

The diagram shows the structure of a moving-coil ammeter.

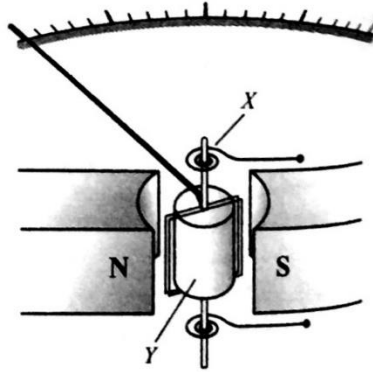


Figure 6

- a) i) Name the parts labelled X and Y.
 ii) State the function of parts X and Y respectively.
- b) When a current flows in the coil, forces act on the coil to make it rotate. The diagram below shows a coil and two magnets where the direction of current in the coil is shown using arrows. On the diagram, draw and label arrows as F to show the directions of the forces acting on the coil to make it rotate.

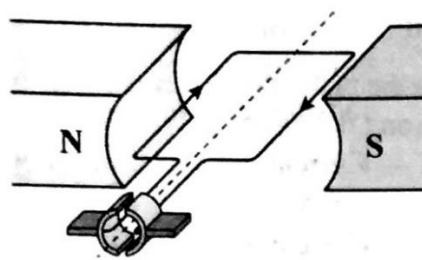


Figure 7

- c) State the relationship between the magnitude of the current and the force acting on the coil.

Signature: Name: Marks: **Q7.**

When a current-carrying wire is placed in a magnetic field, it experiences a force. The diagram shows the magnetic field formed between the poles of a permanent magnet and a current-carrying wire is placed in the field.

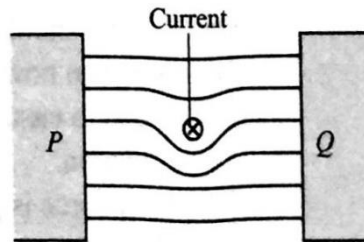


Figure 8

- a) i) Name this type of magnetic field.
ii) On the diagram, show with an arrow and label it as F , the direction of the force acting on the wire.
- b) i) Name the rule that can be used to determine the direction of the magnetic field in the diagram.
ii) Using the rule named in 4b) determine the magnetic poles P and Q .
- c) Name one device that functions based on the principle illustrated in the diagram.

Signature: Name: Marks: **Q8.**

The diagram shows a current-carrying conductor placed in the magnetic field between a North pole and a South pole.

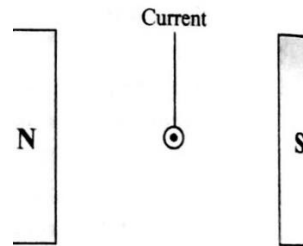


Figure 9

- What type of magnetic field is obtained between the magnetic poles without the current-carrying wire?
- Name the type of magnetic field formed when the current-carrying wire is placed between the poles.
- On the diagram, draw the resultant magnetic field due to the magnetic poles and the current-carrying wire. Name the rule used to determine the direction of the resultant force.

Signature:

Name:

Marks:

Q9.

A current-carrying coil placed in a uniform magnetic field will rotate about its axis. The coil is placed in a magnetic field. You are required to design a dc electric motor based on the information given in the diagram. Your answer should include the following aspects:

- a) Steps on how the dc power supply is connected to the coil
- b) Steps to ensure that the coil continues to rotate in the same direction
- c) How force is produced to rotate the coil
- d) How to increase or decrease the speed of the motor
- e) How the direction of rotation can be reversed.