Magnetic fields and magnetic force essay sample

1. What happens to the distribution of magnetic flux lines when the iron ring was placed in between the U-magnets?

The distribution of magnetic flux lines when the iron ring is placed in between the magnets, the iron ring is included in the distribution of flux lines. Instead of connecting to the other pole, the ring affects its distribution and some of it is attracted to the iron ring.

2. How does changing the current affect the magnetic force on a wire suspended in a magnetic field?

As the current rises, the magnetic force is pushing the magnet away from the current, or pulls the magnet either it is north pole of south pole. The force is increasing as the current increases.

3. What would happen if the magnets in the assembly were not properly arrange, meaning the North Pole of one of the magnets is right next to the S pole of the other magnet?

There will be a change in the distribution of forces, since, the North Pole and South Pole attract each other, and therefore, it will change the magnetic force and have error in the experiment.

4. What is the effect of changing the orientation of the loop of wires in the last part of the experiment? What orientation gives the maximum magnetic force? The minimum force?

The effect of changing the orientation of the loops makes the magnet being repelled or attracted by the current. The maximum force is the highest angle

whose magnetic force is 9. 8×10-3 N in both repulsion and attraction. The minimum force is the angle 0 who do not have angle force produce because the orientation of the current and the magnetic force is parallel to each other.

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Sample Computation:

Part 2: Magnetic Force on current-carrying conductor

a.) Magnetic Force and Magnetic Field

Current(I)

Current Loop

Number of magnets

Magnetic force in gram

5 Amps

SF 37

2

0. 3 gram

Magnetic Force in Newton:

b.) Magnetic Force and Current

Current(I)

Current Loop

Magnetic force in gram

0 Amps

SF 42

0 gram

Magnetic Force in Newton:

c.) Magnetic Force and Length of current loop

Current(I)

Current Loop

Length, L

Magnetic force in gram

2 Amps

SF 40

1. 2 cm

0. 1 gram

Magnetic Force in Newton:

d.) Magnetic Force and orientation of coil

Current(I)

Angle, θ

Magnetic force in gram

2 Amps

0o

0 gram

Magnetic Force in Newton:

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