

Quiz 5

1)⁶ For the coils and magnets below, answer the questions to the right, draw direction for the original and induced magnetic fields (B and B_{ind}) and current in the front of the coil (up or down).

	<p>Direction of magnet's field: <input checked="" type="radio"/> ← <input type="radio"/> →</p> <p>Change in flux at coil: <input type="radio"/> ↑ <input checked="" type="radio"/> ↓</p> <p>Direction of induced field: <input checked="" type="radio"/> ← <input type="radio"/> →</p> <p>Direction of current in G: <input checked="" type="radio"/> ← <input type="radio"/> →</p>
	<p>Direction of magnet's field: <input checked="" type="radio"/> ← <input type="radio"/> →</p> <p>Change in flux at coil: <input type="radio"/> ↑ <input checked="" type="radio"/> ↓</p> <p>Direction of induced Bfield: ← <input checked="" type="radio"/> →</p> <p>Direction of current in G: ← <input checked="" type="radio"/> →</p>
<p style="font-size: small; text-align: center;">Coils are stationary, switch in 2 is closed.</p>	<p>Direction of coil 2's field: <input checked="" type="radio"/> ← <input type="radio"/> →</p> <p>Change in coil 2's flux: <input type="radio"/> ↑ <input checked="" type="radio"/> ↓</p> <p>Direction of induced Bfield: ← <input checked="" type="radio"/> →</p> <p>Direction of current in G: ← <input checked="" type="radio"/> →</p>

2)⁴ Explain the right hand rules:

example) The force on a charged particle moving in a magnetic field:

Place your fingers along the velocity in the direction of motion and curl them to point along \vec{B} . Your thumb then points in the direction of the force on a positive charge

a)² The force on a current segment in a magnetic field ($F = IL \times B$)

Place your fingers along I in the direction of flow (the L vector) and curl fingers into \vec{B} . Your thumb then points in the direction of the force on the current segment.

b)² The magnetic field of a current loop

Place your fingers along I in the direction of flow (the L vector) and your thumb then points in the direction of the magnetic field inside the coil.

Either

Place your thumb along I in the direction of flow (the L vector) your fingers then curl in the direction of the magnetic field..

