Last minute helps for the test:

1. Even though the earth's magnetic north pole is really the earth's S pole of its internal magnet, the earth's magnetic field point TOWARD north.

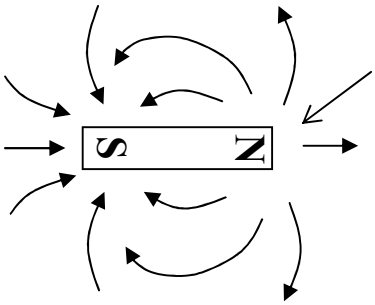
   Example: If a proton is thrown to the east, what direction will it turn due to the magnetic force of the earth's magnetic field?

   Answer: Let's make this easy and pretend you are facing north. Your fingers (of your right hand) face forward and your thumb points to your right (east [toward New York]). Your palm should face up from the ground.

2. Anytime you see the word "electrons" you need to use your left hand.

   Example: Electrons move in a wire up the page. The magnetic field points into the page. What is the direction of the magnetic force on the wire?

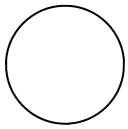
   Answer: Since it says "electrons", you must use your left hand. Your fingers should be pointing into the page. Your thumb should point toward the top of the page (the way the electrons are flowing in the wire). Your palm should be facing to the right.



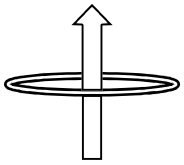
Here the lines are closest and the field is strongest.

3. The magnetic field of a magnet or solenoid is strongest closest to either of the poles OR, for a solenoid, inside the solenoid. Just like for electric fields, the field is strongest where the lines are closest.

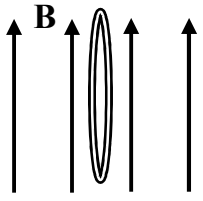
4. Defining the direction of a loop of wire. The open part of the loop is called its "face" or the "plane of the loop".



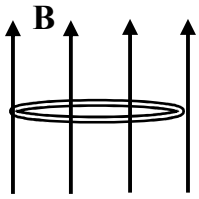
In this example the face of the loop is in the same plane as the page. The loop faces out of or into the page.



In this example the plane of the loop faces up and down the page.



In this example the face of the loop is perpendicular to B, but the plane of the loop is parallel to B.



Here the face of the loop is parallel to B, but the plane of the loop is perpendicular to B.

5. Be sure you know how to induce current in a wire or in a wire loop. I can't say more than this, but know how to do this.