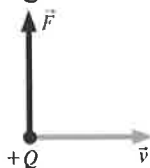


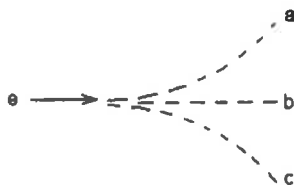
Ch 22 Magnetism

22.1 Conceptual Questions

- _____ 1) If you were to cut a small permanent bar magnet in half,
 A) one piece would be a magnetic north pole and the other piece would be a south pole. B) neither piece would be magnetic. C) each piece would in itself be a smaller bar magnet with both north and south poles. D) None of these statements is true.
- _____ 2) Which one of the following statements is correct?
 A) Earth's geographic north pole is the north pole of Earth's magnetic field. B) Earth's geographic south pole is the south pole of Earth's magnetic field. C) The north pole of a magnet points towards Earth's geographic north pole. D) The north pole of a magnet points towards Earth's geographic south pole. E) None of the above statements is correct.
- _____ 3) A positive charge is moving to the right and experiences an upward magnetic force, as shown in the figure. In which direction must the magnetic field have a component?

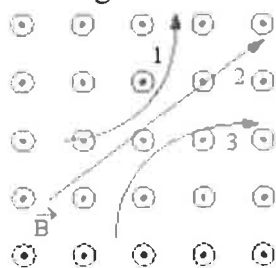


- A) to the right B) to the left C) upward D) out of the page E) into the page
- _____ 4) A proton, moving north, enters a magnetic field. Because of this field, the proton curves downward. We may conclude that the magnetic field must have a component
 A) downward. B) upward. C) towards the east. D) towards the west. E) towards the north.
- _____ 5) An electron is moving to the right, as shown in the figure. Suddenly it encounters uniform magnetic field pointing out of the page. Which one of the three paths shown will it follow in the field?



- A) path a B) path b C) path c

- 6) Three particles travel through a region of space where the magnetic field is out of the page, as shown in the figure. What are the signs of the charges of these three particles?

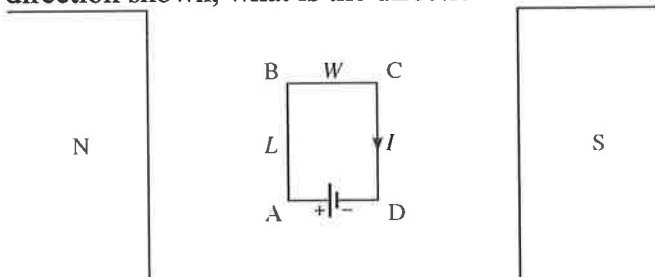


- A) 1 is neutral, 2 is negative, and 3 is positive. B) 1 is neutral, 2 is positive, and 3 is negative.
 C) 1 is positive, 2 is neutral, and 3 is negative. D) 1 is positive, 2 is negative, and 3 is neutral.
 E) 1 is negative, 2 is neutral, and 3 is positive.

- 7) At a particular instant, an electron moves toward the east in a uniform magnetic field that is directed straight downward. The magnetic force that acts on it is

- A) zero. B) upward. C) toward the north. D) toward the south. E) downward.

- 8) A rectangular coil, with corners labeled ABCD, has length L and width w . It is placed between the poles of a magnet, as shown in the figure. If there is a current I flowing through this coil in the direction shown, what is the direction of the force acting on section AB of this coil?



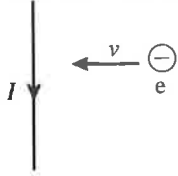
- A) perpendicular to and into the page B) perpendicular to and out of the page C) in the direction of the magnetic field D) in the opposite direction of the magnetic field E) The force is zero.

- 9) When the switch is closed in the circuit shown in the figure, the wire between the poles of the horseshoe magnet deflects upward. From this you can conclude that the left end of the magnet is



- A) a north magnetic pole. B) a south magnetic pole. C) There is not enough information given to answer the question.

- 10) A wire lying in the plane of the page carries a current toward the bottom of the page, as shown in the figure. What is the direction of the magnetic force it produces on an electron that is moving to the left directly toward the wire, as shown?



- A) straight into the page B) straight out of the page C) directly toward the top of the page
D) directly toward the bottom of the page E) directly to the left away from the wire