

Chapter 36 Test Magnetism

True or False Questions*Circle the correct answer.*

- T** **F** 1. A magnetic field is produced by the motion of charged particles.
- T** **F** 2. The magnetic field lines around a wire carrying a current form a series of concentric circles.
- T** **F** 3. A neutron that moves at right angles to a magnetic field experiences a force.
- T** **F** 4. A current-carrying wire experiences a force when it is perpendicular to a magnetic field.
- T** **F** 5. The magnetic pole in the Northern Hemisphere is located at the geographic North Pole.

Multiple Choice Questions*Choose the best answer to each question and write the appropriate letter in the space provided.*

- _____ 6. If the north pole of one magnet is brought near the south pole of another magnet, the poles will
a. attract each other.
b. repel each other.
c. not interact with each other at all.
- _____ 7. If you break a bar magnet in half, each half
a. contains one magnetic pole.
b. becomes a bar magnet with two poles.
c. becomes unmagnetized.
- _____ 8. If you put a small compass in a magnetic field, the compass will
a. swing in any random direction.
b. line up in a direction perpendicular to the magnetic field lines.
c. line up in a direction parallel to the magnetic field lines.
d. seek electrical charge concentrations.
- _____ 9. Magnetic field strength is
a. strongest close to a magnet.
b. strongest far from a magnet.
c. constant everywhere around a magnet.
- _____ 10. Magnetic fields are produced by
a. charges at rest.
b. moving particles.
c. moving particles of earth.
d. moving charged particles.
- _____ 11. Magnetic domains are
a. clusters of atoms randomly aligned.
b. blocks of material.
c. regions that may or may not be magnetized.
d. regions of atoms magnetically aligned.

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- _____ 12. A wire carrying a current is bent into a loop. The magnetic field is strongest
- at the edges of the loop.
 - where the loop is located.
 - at the center of the loop.
- _____ 13. A galvanometer can also be made into
- an ammeter.
 - a voltmeter.
 - both of the above
 - none of the above
- _____ 14. Loops of wire in a motor rotate because a
- battery effectively pushes a loop around in the field.
 - magnet attracts stationary electrons in the wire.
 - magnetic field exerts forces on moving electrons in the loop.
 - current exerts a force on the loop, causing it to rotate.
- _____ 15. The earth's magnetic field is most likely due to
- millions of small magnets buried in the earth.
 - convection currents in the molten part of the earth's interior.
 - the rotation of the earth acting on all of the earth's electrons.
 - a magnetized solid inner core of the earth.

Essay Question

On a separate sheet of paper, answer the following question.

16. What causes magnetic fields? What happens if you keep breaking an iron magnet in two until you reach a single iron atom?