

**Chapter 36 – Multiple Choice**

- \_\_\_ 1. If the north pole of one magnet is brought near the south pole of another magnet, the poles will:
- attract each other
  - repel each other
  - have no effect on each other
  - repel or attract depending on which pole is stronger.
- \_\_\_ 2. If a bar magnet is broken in half, each half:
- becomes unmagnetized
  - contains one magnetic pole
  - becomes a bar magnet with two poles
- \_\_\_ 3. In a magnetic field the needle of a magnetic compass will:
- vibrate wildly
  - point in a direction parallel to the magnetic field
  - point in a direction perpendicular to the magnetic field
- \_\_\_ 4. Magnetic field strength is:
- strongest close to the magnet
  - strongest far from the magnet
  - unaffected by distance from the magnet
- \_\_\_ 5. Magnetic fields are produced by:
- stationary electric charges
  - moving electric charges
  - both of these
  - neither of these
- \_\_\_ 6. Magnetic domains are:
- regions that may or may not be magnetized
  - clusters of atoms whose spins are in many different directions
  - clusters of atoms whose spins are aligned
  - produced when a piece of iron is brought near a strong magnet
- \_\_\_ 7. The reason a magnet can attract an unmagnetized nail is that:
- nails become permanently magnetized in a magnetic field
  - a magnet can attract anything that is not magnetized
  - the magnetic domains in the nail become lined up when near a magnet
  - the statement is false: a magnet cannot attract an unmagnetized nail
- \_\_\_ 8. Magnetism is due to the motion of electrons as they:
- move around the nucleus
  - spin on their axis
  - both of these
  - neither of these
- \_\_\_ 9. The source of all magnetism is:
- iron filings
  - tiny domains of magnetically aligned atoms
  - moving electric charges
  - none of these
- \_\_\_ 10. An iron rod becomes a magnet when:
- positive ions gather at one end and negative ions gather at the other end
  - its electrons stop moving and point in the same direction
  - the net spins of its electrons line up in the same direction
  - it is heated to red heat
- \_\_\_ 11. Magnetic poles: a. always exist in pairs b. can exist separately

- \_\_\_ 12. If a compass needle is moved from the northern hemisphere to the southern hemisphere
- the needle will remain pointed in the same direction
  - the needle will reverse its direction
  - the needle will no longer have any preferred direction
- \_\_\_ 13. By convention, the direction of magnetic field lines around a magnet are said to go
- from north to south
  - from south to north
  - either way
- \_\_\_ 14. When an electric current flows through a coil of wire, the coil:
- becomes a magnet
  - acquires a static charge
  - both
  - neither
- \_\_\_ 15. An electromagnet will be stronger if:
- more current is used
  - more coils are used
  - it has an iron core
  - all of these
- \_\_\_ 16. The force on an electron moving in a magnetic field is:
- in the same direction as the magnetic field
  - in a direction opposite to the magnetic field
  - in a direction perpendicular to the magnetic field
  - there is no force on an electron moving in a magnetic field
- \_\_\_ 17. In a motor, the coil of wire that spins is called
- a generator
  - a brush
  - an armature
  - the magneto
- \_\_\_ 18. The force that makes the armature of an electric motor spin is the force between:
- positive and negative charges
  - two magnetic fields
  - electric charges and magnets
  - none of these
- \_\_\_ 19. The function of the brushes in an electric motor is to:
- transfer electric current from the battery to the armature
  - prevent the wires from the battery from twisting as the motor turns
  - both of the above
  - neither of the above

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### Chapter 37 – Multiple Choice

- \_\_\_ 20. Electric current can be made to flow in a coil of wire by moving a magnet in and out of the coil. This is called:
- magnetic induction
  - magnetic deduction
  - electromagnetic induction
  - electromagnetic deduction
- \_\_\_ 21. A device consisting of a coil of wire that is rotated by cranking it in a magnetic field is called:
- a transformer
  - a generator
  - a motor
  - a galvanometer
- \_\_\_ 22. When a magnet is moved in and out of a coil of wire, an electric current is made to flow in the coil. Which of these can produce a stronger current?
- moving the magnet more quickly
  - using a stronger magnet
  - using a coil with more turns
  - all of these
- \_\_\_ 23. A device used to change the energy of motion into electric energy is called:
- a transformer
  - a motor
  - an armature
  - a generator
- \_\_\_ 24. When a Genecon is used to light a small light bulb, the energy for lighting the bulb actually comes from:
- the electrons in the armature of the Genecon
  - the magnet in the Genecon
  - the mechanical energy used to turn the crank
  - the heat produced from friction
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