

**Review Sheet - Electromagnetism**

1. Read selected sections from Chapters 19 and 20.1, 20.2
2. **Terms to know:** domain, magnetic, magnetized, induced magnetism, compass, bar magnet, magnetic flux, magnetic flux density, magnetic field strength, magnetic field intensity, electromagnetism, right hand rule, DC motor, armature, split-ring commutator, electromagnetic induction, emf, AC generator.
3. What type of field(s) is/are there around a stationary electric charge? Moving electric charge?
4. What is the cause of magnetism?
5. Sketch the magnetic field around:
  - a) a bar magnet
  - b) two like poles
  - c) two unlike poles
  - d) the Earth
  - e) a current-carrying wire
  - f) a solenoid
6. What is a compass?
7. What is the cause of the Earth's magnetic field?
8. Compare and contrast *electricity* and *magnetism*.
9. When sketching a magnetic field, what do *dots* represent? What do *crosses* represent?
10. Describe the Right-Hand Rule for the magnetic field around a current carrying wire.
11. Describe the Right-Hand Rule for the magnetic force on a particle and on a current.
12. What is the difference between a Right Hand Rule and a Left Hand Rule? When is each used?
13. Be able to calculate the magnetic force on a particle and on a current.

14. If two parallel wires have current in the same direction, will they attract or repel each other? Why?
15. Explain the basic purpose and construction of
- a) a DC motor,
  
  - b) an AC generator,
16. Briefly describe an experiment that will demonstrate that an electric current will induce a magnetic field.
17. Briefly describe an experiment that will demonstrate that a magnetic field will induce an electric current.
18. Be able to calculate the emf induced when a wire is moved through a magnetic field. At what angle should the wire be moved for maximum effect?
19. Briefly explain why:
- a) a wire with current in a magnetic field will experience a magnetic force.
  
  - b) moving a wire in a magnetic field will induce a potential difference.

Quantity	Variable for quantity	Vector or Scalar?	Units	Abbreviation for units
Magnetic field strength/intensity (flux density)				
emf (potential difference) (voltage)				
Velocity				
Length of wire				
Charge				
Current				
Number of turns				