Circuits, Magnetism & EM

Name _____

Period _____

1. For electricity to flow though a circuit, the circuit must be ….

2. Differentiate between series and parallel circuits. eg. overall resistance, voltage, current, power, brightness of bulbs.

3. What safety device is used to protect from overloading a circuit in our homes/buildings?

4. Two lamps with resistance of 16 ohms each are connected in series to a 32 V power source. Calculate the power used by each light bulb and draw/label a schematic diagram.

5. Two lamps with resistance of 8 ohms and 12 ohms connected in a parallel circuit to a 6 V battery. Calculate the total current through the circuit and draw/label a schematic.

6. Define magnetism.

7. What are magnetic domains? In which direction do they point in a magnetized object? Unmagnetized object?

8. Explain the fundamental rule of attraction/repulsion of magnets.

9. In what direction does the needle of a working compass always point?

10. Describe how magnetic field lines of a bar magnet always point.

11. Where is the magnetic force of a magnet the strongest?

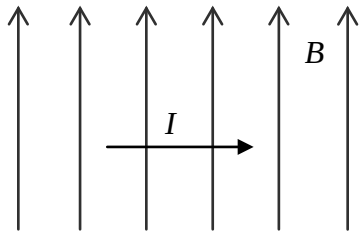
12. Define electromagnetism.

13. What is an electromagnet? What determines its strength?

14. Explain the function and operation of an electric motor?

15. Why is the right hand rule used in electromagnetism?

16. A .12 m wire carries a current of 2.5 A through a magnetic field of .065 T. Calculate the amount of magnetic force acting on the wire. Draw and label the direction of the magnetic force acting on the wire below.



17. Explain the process of electromagnetic induction.

18. Explain the function and operation of a generator.

19. Explain the function and operation of a transformer.

20. Differentiate between a step-up transformer and step-down transformer. E.g. turns of wire in the primary vs. secondary coil and resulting voltages in primary vs. secondary coil.