Science 10-Electricity & Magnetism

Activity10 - Chapter 4 Review

	10

Name _____

Due Date _____

Show Me ☐ Hand In ☐

Correct and Hand In Again By _____

1. What is meant by a **magnetic field**? _____

   _____

2. Draw the general shape of the magnetic field around the following arrangements of magnets:

   N S

   N S N S

   S N N S

3. The **north pole** of a magnet points towards the _____

   _____ of the earth.

4. What is the difference between **magnetic north** and **true north**? _____

   _____

   _____

5. The **geomagnetic north pole** of the Earth is actually the _____ pole of a magnet.

6. List at least **six** places around your home where magnets are used. _____

_____

_____

7. Name four elements which are strongly magnetic. _____

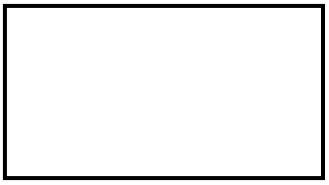
_____

8. What is a **magnetic domain**? _____

_____

9. Show how the magnetic domains are arranged in unmagnetized iron and magnetized iron:

Unmagnetized Iron



Magnetized Iron

10. Give the compositions (what they are made up of.) of two good **permanent magnets**.

_____

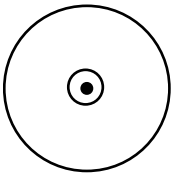
_____

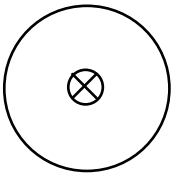
11. Permanent magnets should be stored with _____
poles together.

12. The scientist who first discovered the connection between **electricity** and

magnetism was _____

13. If ⊙ represents conventional current coming **out of** the page through a wire and ⊗ represents conventional current going **into** the page through a wire, use arrows to show the **direction of the magnetic lines of force** around each of the following wires:



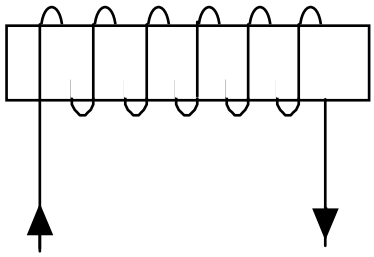


14. State the **right hand rule**. _____

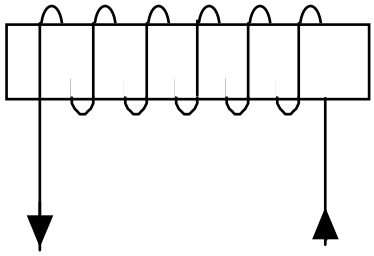
_____

_____

15. Sketch the magnetic lines of force around the following coil. The conventional current direction is shown by the arrows. Look at your results for Activity 9 and see if you can label the "N" and "S" poles.



16. Label the "N" and "S" pole in the following electromagnetic coil:



17. List 8 common uses of electromagnets. _____

_____

_____

18. An **electrical generator** transforms _____

energy into _____ energy.

19. To make a generator, you need a _____ and a

    _____, and one of them has to be moving.

20. What is an **armature**? _____

    _____

21. What is meant by **Alternating Current** (**AC**)? _____

    _____

22. The AC current we get from the power company has a frequency of _____

    cycles per second. This means the current changes direction _____ times each second.

23. Sketch a diagram showing what **one cycle** of AC would look like on an oscilloscope screen

24. What is meant by **Direct Current** (**DC**)? _____

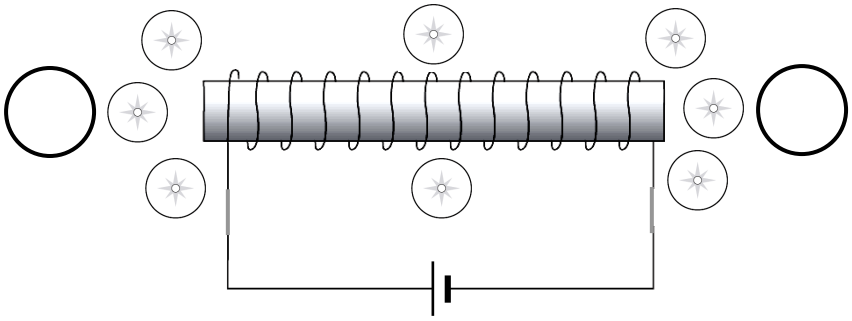
    _____

25. Chemical cells (or batteries) produce which type of current, AC or DC? _____

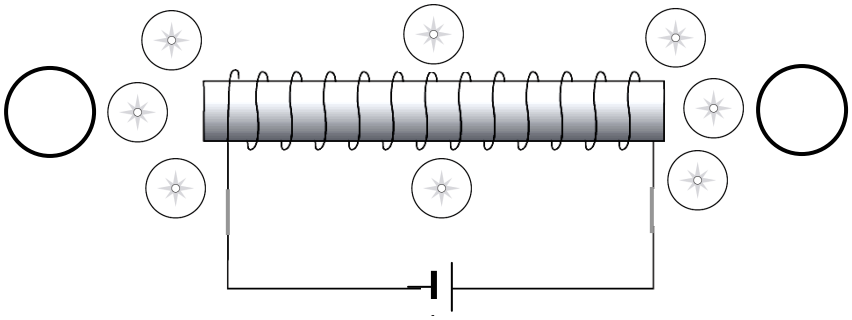
26. An **electric motor** transforms _____ energy into

    _____ energy.

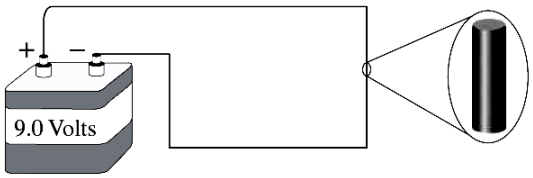
27. Given the following coil sketch the direction a compass needle would point when placed in each position. Label the North and South pole of the magnet in the circles on the far left and right.



28. Given the following coil sketch the direction a compass needle would point when placed in each position. Label the North and South pole of the magnet in the circles on the far left and right.

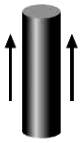


29. Given the following diagram of a simple circuit:

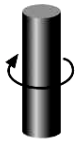


What is the direction of the magnetic field at the point indicated on the diagram?

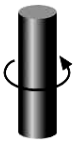
A.



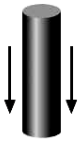
B.



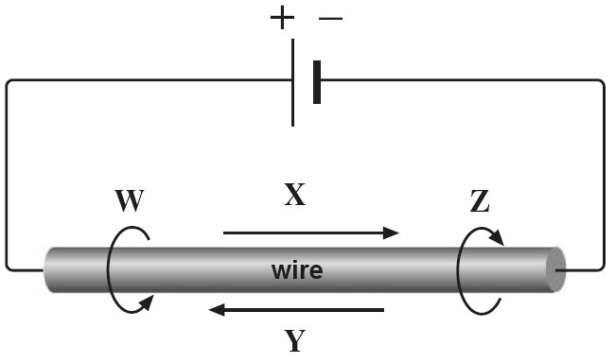
C.



D.



30. The following diagram shows a circuit with a section of the wire magnified.



Which arrow represents the direction of **conventional current** in the wire? _____

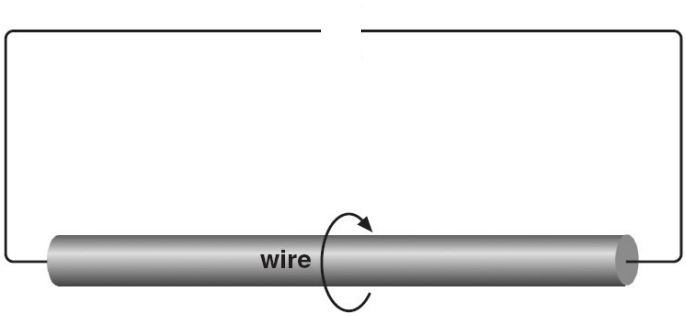
31. What is created when a bar magnet is moved inside a solenoid?

32. Increasing the current through a solenoid will _____crease the strength of the magnetic field.

33. Increasing the number of coils in a solenoid will _____crease the strength of the magnetic field.

34. Magnetic field lines **outside** a permanent magnet point from the north end of the magnet to the south end of the magnet. A. True B. False Answer _____

35. In the following diagram, draw in the symbol for the cell showing which sides the positive and negative are on.



36. Given the following coil sketch the direction a compass needle would point when placed in each position. Label the North and South pole of the magnet in the circles on the far left and right.