Name_____

Per____ 5/06

1_____ If a magnet is dropped, it will break into two separate monopoles. (T/F)

2_____ If a magnet is dropped, domains will re-align after "X" seconds. No strength is lost. (T/F)

3_____ In addition to Fe, the three next most important elements in magnetism are ...

4 Indicate the magnetic field around this wire using x's and •'s.

5 Sketch the iron filings for the magnets.

6 Sketch the iron filings for the magnets.

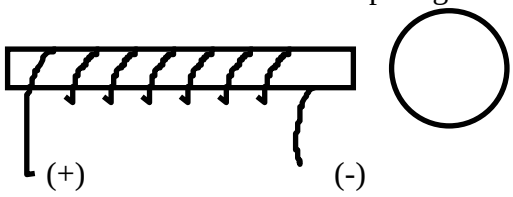
7_____ A wire runs from North to South. Electron flow is from South to North. Which way will a compass point if it sits above the plane of the wire? (N, S, E, W)

8_____ The first right hand rule can predict the direction of the ...(8)... that surrounds a current bearing straight wire.

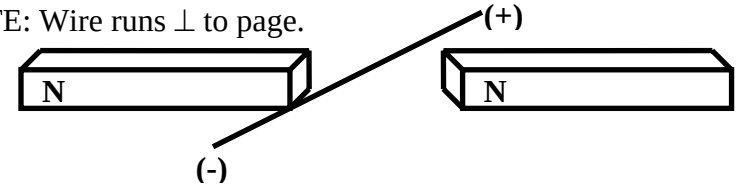
9_____ The second rule predicts the ...(9)... of an electromagnet.

10_____ The third rule determines the direction of a force that is exerted on a current bearing wire that is located in a(n) ...(10)...

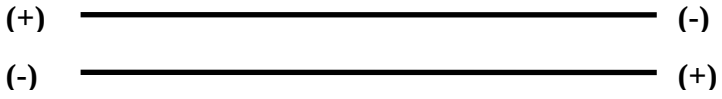
11 Draw the needle on the face of the compass given the following condition:



12 Indicate which way the current bearing wire in the drawing below will be forced.
NOTE: Wire runs ⊥ to page.



13 The two wires below lie in the plane of the paper. Indicate whether they will be forced together or apart as a result of the induced magnetic fields. NOTE: Mark both individual fields.



F = B I L = B q v q = 1.6 EE -19 C F = k (I / r)

14_____ In general, when magnets are separated by a distance d, the force of interaction between them is X newtons. If separation distance is doubled, the new force of interaction will be ...

15_____ Speaker is to microphone as motor is to ...

16_____ Volt is to joule per coulomb as tesla is to ...

17_____ An electron passes through a magnetic field at a velocity of 4.0 EE 6 m/s. The strength of the magnetic field is 0.42 T. What is the magnitude of the force exerted on the electron? (N)

18 ESSAY Compare the force on the electron in # 17 above to the force that would be exerted on a proton under the same conditions. BOX any vocabulary that you use.

19_____ A straight wire 0.20 m long carrying a current of 2.0 A is in a magnetic field. The resulting force on the wire is 0.04 N. How strong is the magnetic field? (T)

20_____ A wire 80 cm long is in a magnetic field of strength 0.40 T. If the wire has 2.5 Ω of resistance and the potential across the wire is 5.0 v, what is the magnitude of the force exerted on the wire? (N)