Electricity and Magnetism Unit Test

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_/25 points

Matching:

For the following materials please place wither a **C** for conductor or an **I** for insulator in the space provided. (5 points)

1. Glass \_\_\_\_\_
2. Wood \_\_\_\_\_
3. Plastic \_\_\_\_\_
4. Water \_\_\_\_\_
5. People/Animals \_\_\_\_\_
6. Copper \_\_\_\_\_
7. Aluminum \_\_\_\_\_
8. Rubber \_\_\_\_\_
9. Gold \_\_\_\_\_
10. Porcelain \_\_\_\_\_

Fill in the blank:

For each statement, fill in the blank with a word from the word bank below. (3 points)

1. Protons have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.
2. Neutrons have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.
3. Electrons have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.

Word Bank:

positive, negative, high, neutral, low

1. Label the picture of the atom using the word bank below. Each word must be used once. (4 points)

Word Bank:

Nucleus, Protons, Electrons, Neutrons

Picture of atom:

1. In the space provided, draw a diagram of a **closed simple circuit** and include labels.(3 points)

Multiple Choice:

Circle the correct response for each question.

1. Which of the listed materials do magnets contain? (1 point)
   1. Glass
   2. Silver
   3. Iron
   4. Porcelain
2. What will opposite magnetic poles do if they get close to one another? (1 point)
   1. Repel
   2. Attract
3. What will same magnetic poles do if they get close to one another? (1 point)
   1. Repel
   2. Attract
4. Why does a compass always point north? (1 point)
   1. The pressure of the atmosphere makes the needle point north
   2. The Earth is a magnet and has an attracting force on the needle
   3. The Earth is not a magnet and it has no force on the needle
   4. The wind always blows north, therefore the needle of a compass points north
5. Which of the following is a factor on magnetic force through a material? (1 point)
   1. The color of the material
   2. The amount of time that the material is next to the magnet
   3. The thickness of the material
   4. The cost of the material
6. How do we know that a magnetic field exists? (1 point)
   1. Magnetic fields can be seen with only our eyes
   2. Magnetic fields can be heard because they have a strong pull on metals
   3. Magnetic fields can be felt because they are solid objects
   4. Magnetic fields can be seen using iron filings
7. What are the directions of magnetic poles? (1 point)
   1. East and North
   2. North and South
   3. South and West
   4. East and West

Sorting:

Sort the following materials in either the **magnetic** box or the **non-magnetic** box. (3 points)

|  |  |
| --- | --- |
| Magnetic | Non-Magnetic |
| 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  2.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  3.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Word Bank:

Wood, plastic, metal bucket, paper, paper clips, Earth