Title: **Electromagnetism** Test: 9

Course: Electrical Applications Unit: Electrical Theory CLO: 3

Name ANSWER KEY Grade 15pts. Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall identify specific characteristics of electromagnetism.
2. Student shall identify a magnets poles based on conventional current flow.
3. Student shall identify a magnets conventional current flow base on a given pole configuration.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Test. Grading shall be based on an answer key.

**Instructions**

Select the best answer to each multiple-choice question below.

1. Flux lines are lines of force that flow from the south pole to the north pole outside of the magnet.
   1. True
   2. False
2. The two basic laws of magnetism are unlike poles attract and like poles repel.
   1. True
   2. False
3. Magnetic lines of force have tension, which keeps them as short as possible.
   1. True
   2. False
4. Magnetic lines of force weaken as they extend out from the magnet.
   1. True
   2. False
5. A domain is a collection of parallel atoms with their poles oriented in random directions.
   1. True
   2. False
6. Magnetic lines of force can be manipulated with a permeable material.
   1. True
   2. False
7. Which type of magnet is created when an electrical current is passed through a wire?
   1. Temporary magnet
   2. Permanent magnet
   3. Electro-magnet
   4. Flux magnet
8. Which of the following are ways to increase the strength of an electromagnet?
   1. Increase the number of turns in the coil.
   2. Decrease the number of turns in the coil.
   3. Replace the air core with a soft iron core.
   4. Both a and c are correct.
   5. Both b and c are correct.

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| 1. In the figure to the right, is the direction of magnetic spin shown around the conductor correct?    1. Yes    2. No |  |

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| --- | --- |
| 1. Based on the direction of current, indicate North and South poles. | 1. Based on the identified pole, indicate positive and negative polarity. |
| S  N | -  + |

**Instructions**

Indicate the direction of *conventional current* induced into the conductor by placing either a plus “+” or a minus “-” sign in the circle.

1. 
2. 