Lesson 10

Quiz Key

1. The magnetic lines of flux induced by current flow are:
   a. In the same direction as current flow.
   b. Varies with the type of current.
   c. In the same direction as the grain of the material.
   d. **At 90º to the current direction.**

2. A circular field induced by a current flow though a test object creates a field both in the test object and in the air surrounding the test object.
   a. **True**
   b. False

3. Prods may be used to induce a longitudinal magnetic field.
   a. True
   b. **False**

4. An indirect method of inducing a circular magnetic field is with a:
   a. Coil.
   b. Yoke.
   c. **Central conductor.**
   d. Head shot.

5. An indirect method of inducing a longitudinal magnetic field is with a:
   a. **Coil.**
   b. Prod unit.
   c. Central conductor.
   d. Head shot.

6. A long, uniform, hollow test object magnetized with a central conductor:
   a. Will have a north and south pole at each end.
   b. Will have a north and south pole at random locations.
   c. Will have a north and south pole at opposite sides of the circumference.
   d. **Will have no external poles.**
7. In order to induce a uniform longitudinal field in a coil, the test object must have a length-to-diameter ratio of at least:
   a. 2.
   b. 4.
   c. 6.
   d. 15.

8. When a ring or wheel is placed inside a coil, radial or transverse discontinuities can be detected if the test object is rotated 90° and repositioned in the coil at least twice.
   a. True
   b. False

9. The only type of material that can be tested by magnetic particle testing is:
   a. Diamagnetic.
   b. Paramagnetic.
   c. Ferromagnetic.
   d. All of the above.

10. The mathematically calculated starting magnetizing force to use for a test object with a length-to-diameter ratio of five, held close to the side of a low fill factor five turn coil is:
    a. 9000 A turns.
    b. 1800 A.
    c. 4500 A.
    d. both a. and b.
    e. none of the above.

11. An intermediate fill factor coil/test object combination is when the cross-sectional area of the coil is greater than two and less than 10 times the cross-sectional area of the test object.
    a. True
    b. False

12. The cross-sectional area ratio of a 20 in. coil and a 5 in. test object is:
    a. 2.
    b. 4.
    c. 10.
    d. 16.