**Trainee Name:** _____

**Social Security Number:** _____ **Date:** _____

____ 1. To be effective, a grounding system must limit the voltage on the electrical system and protect it from all of the following *except* _____.

a. exposure to lightning
b. voltage surges higher than that for which the circuit was designed
c. an increase in maximum potential to ground due to abnormal voltages
d. undervoltage conditions

____ 2. If a cold water pipe, driven ground rod, and a grounding ring are available at a building site, _____ must be bonded together to form the grounding electrode system.

a. the pipe and the driven ground rod
b. any two of these
c. all of these
d. all of these plus an additional grounding electrode

____ 3. The minimum diameter of galvanized pipe allowed for a grounding electrode is _____.

a. ½"
b. ¾"
c. 1"
d. 1¼"

____ 4. Rod, pipe, and plate electrodes must have a resistance to ground of _____ ohms or less.

a. 10
b. 25
c. 40
d. 60

____ 5. When a ground rod is installed, the top of the rod must be positioned _____ grade.

a. flush with or below
b. 4" above
c. 6" above
d. 10" above

____ 6. Plate electrodes made of iron or steel must be at least _____ thick.

a. ¼"
b. ½"
c. ¾"
d. 1"

____ 7. A grounding electrode conductor must be connected _____ of a main distribution panel.

a. to any ungrounded conductor
b. to the neutral terminal bus
c. only to the equipment grounding terminal bus
d. only to a grounding bushing

____ 8. A grounding clip is used to _____.

a. connect a grounding conductor to a ground rod or water pipe
b. connect bonding conductors onto conduit runs to ensure continuity
c. secure equipment grounding conductors to metallic outlet boxes
d. connect two or more ground conductors together

____ 9. An acceptable grounding electrode is a(n) _____.

a. underground gas pipe
b. PVC water pipe
c. metal frame of a building which is effectively grounded
d. underground water pipe in direct contact with the earth for 6'

____ 10. The size of the equipment grounding conductor (EGC) is determined by the _____.

a. size of the overcurrent device
b. length of the conduit
c. size of the neutral
d. size of the largest conductor

____ 11. If non-metallic boxes are used with NM cable, which of the following is true?

a. No connection to the box is required.
b. A grounding clip connects the box to the cable.
c. Electrical tape connects the box to the cable.
d. A standard electrician's staple connects the box to the cable.

____ 12. The minimum size equipment grounding conductor required for a 200A, three-phase subpanel is _____.

a. No. 6 AWG
b. No. 4 AWG
c. No. 2 AWG
d. No. 1 AWG

____ 13. The _____ method describes a ground test utilizing an earth ground resistance tester.

a. one-point
b. three-point
c. six-point
d. ten-point

____ 14. The permanent joining of metallic parts to form an electrically conductive path that ensures electrical continuity and the capacity to safely conduct any current that is likely to be imposed is called _____.

a. grounding
b. bonding
c. inductance
d. capacitance

____ 15. A plate electrode must have at least _____ square feet of surface area exposed to the surrounding earth.

a. 1
b. 2
c. 4
d. 10