

10 ELECTRICAL SAFETY

QUIZ 1 (20 POINTS TOTAL)

True/False (6 points)

1. A person's main resistance to current flow is the skin's surface.
 - a. true
 - b. false
2. Injuries from electrical shock include falls.
 - a. true
 - b. false
3. All insulations can double as a moisture barrier.
 - a. true
 - b. false
4. Extension cords may have an electrical load whether connected or disconnected.
 - a. true
 - b. false
5. It is permissible to splice extension cords.
 - a. true
 - b. false
6. UL stands for Underwriters Laboratories.
 - a. true
 - b. false

Multiple Choice (6 points)

7. _____ is the flow of electrons in an electrical circuit measured in amps.
 - a. current
 - b. voltage
 - c. resistance
 - d. watt
8. _____ is any condition that retards the flow of electrons.
 - a. current
 - b. voltage
 - c. resistance
 - d. watt
9. _____ is a unit of electrical power, equal to one joule per second.
 - a. current
 - b. voltage
 - c. resistance
 - d. watt

10. _____ is the joining of metallic parts to form an electrically conductive path.
- a. circuiting
 - b. bonding
 - c. grounding
 - d. soldering
11. A _____ is used primarily where switches have not been installed on walls and where it is difficult to put them on walls.
- a. knife switch
 - b. pendant switch
 - c. push-button switch
 - d. snap switch
12. Because an open _____ is hazardous, it should be enclosed in a grounded metal cabinet with control levers that operate outside the cabinet.
- a. knife switch
 - b. pendant switch
 - c. push-button switch
 - d. snap switch

Short Answer (7 points)

13. What two factors cause injuries in electrical shock? How is severity of shock determined?

14. What is ventricular fibrillation? What are the typical current pathways for heart risk?

15. Name three ways death or internal injuries can result from electric shock.

16. What is an interlock? When an interlock is used as a safety device, what are the criteria for making it fail-safe?

17. What are the two categories of circuit breakers?

18. Name three things that might cause a ground fault circuit interrupter to trip.

19. How can a motor become overloaded?

Short Essay (1 point)

20. What is a fuse? Describe how it works, and name three kinds of fuses.

QUIZ 2 (20 POINTS TOTAL)

True/False (6 points)

1. A voltage detector can be used to check outlet voltage, equipment grounding, and circuit breaker condition.
 - a. true
 - b. false

2. Approved and labeled double-insulated power tools must still be grounded.
 - a. true
 - b. false

3. Most of the current from a ground fault finds its way back to the source transformer from the service equipment via the neutral conductor, not the earth.
 - a. true
 - b. false

4. Frames and tracks of electrically operated cranes should be grounded.
 - a. true
 - b. false

5. Mobile homes and recreational vehicles do not need to be grounded.
 - a. true
 - b. false

6. Any facility manager has the ability and knowledge to make repairs on electrical circuits and apparatus.
 - a. true
 - b. false

Multiple Choice (6 points)

7. In AC systems, grounding is identified by _____ colored insulation.
 - a. white
 - b. red
 - c. blue
 - d. orange

8. Who is responsible for ensuring that all electrical equipment in hazardous areas conforms to the National Electrical Code (NEC) and does not significantly increase the chance of explosion?
 - a. safety and health professional
 - b. facility engineer
 - c. facility manager
 - d. workers

9. Which of the following is not a protective device?
 - a. cartridge fuse
 - b. thermal circuit breaker
 - c. link fuse
 - d. knife switch

10. If combustible dusts are likely to be present, the area is a _____ hazard area.
 - a. Class I
 - b. Class II
 - c. Class III
 - d. Class IV

17. Rubber insulating gloves are not a good substitute for safety devices or proper procedures, but should be used as a supplementary measure. How should rubber gloves be inspected before and during the job? What can be used in conjunction with rubber gloves to protect them from wear?

18. Name three things that should be checked during an electrical safety inspection.

19. When inspecting electrical equipment, how should employees be dressed?

Short Essay (1 point)

20. The unexpected energization or startup of machines and equipment may cause injuries from electric shock. What steps would you develop in a lockout/tagout procedure to prevent such injuries from happening?