**Study Guide 2018 NFPA 70E**

1. **Flexible electrical cords and cables:**
2. **May not be repaired**
3. **Must be replaced annually**
4. **Must be repaired or replaced by a qualified person when necessary**
5. **May be worn or frayed, but not broken**
6. **An arcing fault creates a conductive plasma fireball that can reach over \_\_\_\_\_\_ degrees Fahrenheit?**
7. **3,500**
8. **10,000**
9. **25,000**
10. **35,000**
11. **What category meter rating would you use to test the utility connections and outside equipment?**

1. **Category I**
2. **Category II**
3. **Category III**
4. **Category IV**
5. **Who must be trained to never cross the arc flash boundary?**
6. **Management**
7. **Contractors**
8. **Unqualified Person**
9. **All the above**
10. **Incident Energy is measured in Calories per cm². How many Calories per cm² will it take to cause a second-degree burn?**
11. **1.2 Calories per cm²**
12. **12 Calories per cm²**
13. **2 Calories per cm²**
14. **10 Calories per cm²**
15. **Personal injury and equipment damage are affected by?**
16. **Current and time**
17. **Current**
18. **Time**

 **7. What can cause an arc flash event to happen?**

**(A) Lack of preventive maintenance**

**(B) Contact with energized parts**

**(C) Condensation of Vapor and Water Drippings**

**(D) Corrosion of equipment parts**

**(E) All the above**

**8. Why was NFPA 70E created?**

1. **To provide OSHA with the electrical safety expertise**
2. **Because they wanted to add more standards to their collection**
3. **So they can sell more books**
4. **None of the above**

**9. According to the Hierarchy of controls what is the “Most Effective” method?**

1. **Wearing PPE**
2. **Engineering Controls**
3. **Substitution**
4. **Elimination**

**10. Who is considered to be a qualified person?**

1. **A Journeyman**
2. **A Master Electrician**
3. **One who has demonstrated their skills**
4. **The owner**

**11. Who is considered to be an Unqualified person?**

1. **A machine operator**
2. **A Master Electrician**
3. **One who has not demonstrated their skills**
4. **All the above**

**12. What rating meter should you purchase when testing electrical equipment in the workplace?**

1. **Category 1**
2. **Category 2**
3. **Category 3 or higher**

**13. To verify absent of voltage on a piece of electrical equipment the following steps must be followed?**

1. **measure phase to phase voltage**
2. **measure phase to ground voltage**
3. **Test on a known source first & last**
4. **All of the above measurements are necessary**

**14. Who is responsible to provide the lockout/tagout devices and establish the procedures to follow when performing lockout/tagout?**

1. **Your employer**
2. **OSHA**
3. **Each qualified person is responsible to provide their own devices and write their own procedures**

**15. Who may use a test instrument to verify absent of voltage?**

1. **A qualified person trained on the test instrument**
2. **A qualified person**
3. **An exposed or affected employee**

**16. What is the first step in ensuring an electrically safe work condition?**

1. **Apply lockout/tagout devices**
2. **Ground the phase conductor**
3. **Determine all possible sources of electric supply to the equipment**
4. **Visually verify that all blades are fully open**

**17. What is the objective of an electrically safe work condition?**

1. **To reduce down time**
2. **To safeguard employees from exposure to electrical hazards**
3. **To lower cost**
4. **To avoid fines**

**18. The key or combination for simple lockout must be held by?**

1. **The person in charge**
2. **The individual or the person in charge**
3. **The individual**
4. **The employer**

**19. A job or task that continues for more than one shift requires simple lockout/tagout?**

1. **True**
2. **False**

**20. A locking means that can accept multiple locks is acceptable only for complex lockout/tagout?**

1. **True**
2. **False**

**21. What voltage level meets the requirements for an (ESWC) electrically safe work condition?**

1. **120 volts and higher**
2. **50 volts or greater**
3. **Any circuit equal to 480 volts or higher**

**22. When is it permissible to operate electrical equipment without wearing PPE?**

1. **Installed correctly**
2. **Maintained correctly**
3. **There are no signs of impending failures**
4. **The covers are on and secured**
5. **All the above**

**23. When is it not required per NFPA 70E to de-energize a circuit?**

1. **When you are performing Infrared testing**
2. **When you are trouble shooting a circuit**
3. **Conducting a visual inspection**
4. **All the above**

 **24. What are the two shock boundaries?**

**(A) Limited and Restricted**

**(B) Limited and Non-limited**

**(C) Unlimited and Restricted**

**(D) Unlimited and Unrestricted**

**25. Which boundary is located closest to the energized parts?**

1. **The limited approach boundary**
2. **The restricted approach boundary**
3. **The approach boundary**
4. **The forbidden boundary**

**26. Eye and hearing protection is required for all levels of Arc Flash PPE categories?**

1. **True**
2. **False**

**27. What level of Arc Flash PPE would be required if the Incident energy level on the arc flash label showed that the incident energy is 9 cal/cm² ?**

1. **Category 1 Good for up to 4 cal/cm²**
2. **Category 2 Good for up to 8 cal/cm²**
3. **Category 3 Good for up to 24 cal/cm²**
4. **Category 4 Good for up to 40 cal/cm²**

**28. According to NFPA 70E The repetitive manual reclosing of circuit breakers or re-energizing circuits through replaced fuses is prohibited?**

1. **True**
2. **False**

**29. All arc rated PPE flame resistant?**

1. **True**
2. **False**

**30. How often is it required for you to perform a visual inspection on your voltage rated gloves?**

1. **Daily**
2. **When they are first issued**
3. **Every six months**
4. **Before each use**

 **31. What is the maximum use voltage of class 0 rubber insulating gloves for AC use?**

**(A) 500 volts AC**

**(B) 1,000 volts AC**

**(C) 750 volts DC**

**32. What instructions do you use when cleaning your arc rated clothing?**

1. **Ask your mom**
2. **in accordance with manufacturers’ instructions**
3. **Google it**

**33. When working in the Restricted Approach Boundary a qualified person is permitted to use uninsulated tools?**

1. **True**
2. **False**

**34. What standard would you refer to for preventive maintenance guidelines on electrical equipment?**

1. **National Electrical Code NEC**
2. **NFPA 70 Chapter 2**
3. **NFPA 70B**

**35. Once an Arc Flash study has been completed and the labels applied to the electrical equipment, it’s permissible to replace a blown fuses with what ever size or type that's available to save the company from expensive down time cost?**

1. **True**
2. **False**

**36. Due to a overcurrent device not being maintained per the manufacturers instructions is it possible that the available incident energy could be higher than what's listed on the arc flash label?**

1. **True**
2. **False**

**37. After a circuit is de-energized by a circuit protective device, the circuit may NOT be manually re-energized until it has been determined that the equipment and circuit can be safely re-energized.**

1. **True**
2. **False**

**38. Overcurrent protection device maintenance must be documented?**

1. **True**
2. **False**

**39. What are some of the maintenance you can perform while the electrical equipment is “energized” without having to complete a Energized Work Permit?**

1. **Visual inspection**
2. **Infrared Testing**
3. **Power quality metering**
4. **UltraSonic**
5. **All the above**

**40. Who is responsible for general maintenance of electrical equipment?**

1. **The employee**
2. **The equipment owner or the designated representative**
3. **A qualified employee**
4. **The manufacturer**