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Continuing Education Course #560
NFPA 70E
Electrical Safety in the Workplace

1. Basic Safety consists of proper installation per _____, proper maintenance per NFPA 70B, and proper safety guidance per NFPA 70E.
 - a. CFR 70
 - b. IEC 70
 - c. NEC 70
 - d. NEC 70A
2. Which of the following is covered by NFPA 70E?
 - a. equipment connecting to the electricity supply
 - b. ships and watercraft power
 - c. railways and aircraft
 - d. automotive vehicles
3. Which rules are "permitted but not required"?
 - a. annex information
 - b. information notes
 - c. mandatory
 - d. permissive
4. What are the units of an arc rating?
 - a. cal/cm²
 - b. cal/cm³
 - c. J/cm³
 - d. J
5. A balaclava protects the _____ and _____.
 - a. arms and hands
 - b. head and neck
 - c. torso and arms
 - d. torso and legs
6. A _____ is a connection to ensure electrical continuity.
 - a. bond
 - b. ground
 - c. jumper
 - d. short
7. Listed: Equipment, materials, or services included in a list maintained by an organization and approved by the _____.

- a. authority having jurisdiction
- b. ANSI/IEEE Safety Committee
- c. government via the CFR
- d. underwriters laboratory

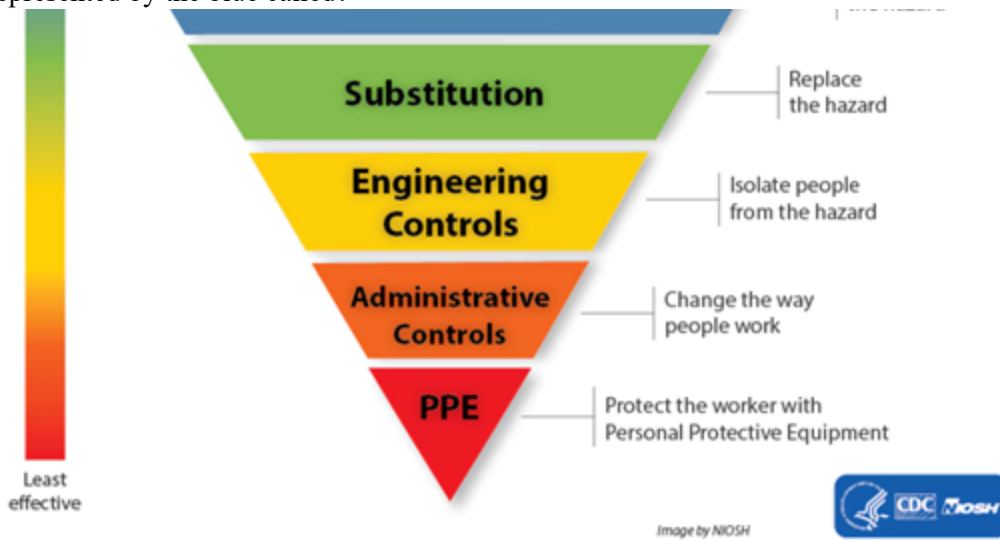
8. What rating describes the ability of equipment to contain the damage while not catching on fire or exploding?

- a. maximum power rating
- b. maximum temperature rating
- c. maximum voltage rating
- d. short-circuit current rating

9. Who is responsible for establishing and implementing safety procedures?

- a. AHJ
- b. employee
- c. employer
- d. government

10. The assessment of risk includes the Hierarchy of Risk Control shown below. What is the most effective method represented by the blue called?



- a. control of risk
- b. elimination of hazard
- c. minimal hazards achieved
- d. all items shown below the blue accomplished

11. How often is an electrical safety program required to be audited?

- a. annually
- b. 2 years
- c. 3 years
- d. 5 years

12. Lockout/Tagout auditing is required every _____ and retraining on the same is required ever _____ years.

- a. 2 years / 3
- b. yearly / 2
- c. year / 3
- d. year / 5

13. GFCI is required on 120 V circuits that provide how many amperes?
- a. all/any
 - b. 10 A
 - c. 20 A
 - d. 50 A
14. When the lockout/tagout exceeds a work shift, this is known as a _____ tagout and requires a _____.
- a. complex / person in charge
 - b. extended / supervisor
 - c. simple / person in charge
 - d. simple / supervisor
15. One can tell when an Electrical Safe Work Condition is established when the following occurs.
- a. cleaning and/or painting is allowed
 - b. major sources of electrical energy are secured
 - c. PPE is correctly in use
 - d. qualified personnel are working in the area
16. When an ESWC cannot be established, work may still occur. Which of the following is NOT one of the conditions that must be established?
- a. a shock risk assessment is performed and completed
 - b. an energized work permit is established and approved
 - c. an arc flash assessment is performed and completed
 - d. unqualified persons are allowed to work in the vicinity
17. There are two types of approach boundaries: shock protection boundaries (which are either _____ or limited) and arc-flash boundaries.
- a. avoided
 - b. moveable
 - c. restricted
 - d. varying
18. An AC or DC voltage of 120 V of 1 m and a restricted approach boundary of _____.
- a. avoid contact
 - b. no contact
 - c. 3 ft 6 in
 - d. 4 ft
19. What does a shock protection boundary vary with?
- a. current available / distance to conductor
 - b. energy available / distance to conductor
 - c. voltage level / distance to conductor
 - d. voltage level / fixed or moveable conductor
20. The arc-flash boundary is the distance at which the incident energy equals _____.
- a. 1.2 cal/cm²
 - b. 1.2 cal/cm³
 - c. 4.2 J/cm²
 - d. 5.2 J/cm³
21. The accuracy of arc-flash labels shall be reviewed every _____ years.

- a. 2
- b. 3
- c. 5
- d. only when equipment is modified

22. The procedure and periodicity for maintenance is guided by _____ instructions but other methods may be selected by the employer.

- a. ANSI
- b. IEEE
- c. NETA
- d. OEM

23. What annex contains guidance on incident energy and arc flash calculation methods

- a. A
- b. C
- c. D
- d. F

24. How much does copper expand from a solid form to gaseous state?

- a. 6,000
- b. 7,000
- c. 67,000
- d. 76,000

25. What is the approximate incident energy in open air for a 45×10^{-6} F at 120 V at a distance of 1 foot?

- a. $30 \times 10^{-3} \text{ J/cm}^2$
- b. 3.14 J/cm^2
- c. 28 J/cm^2
- d. $28 \times 10^{-6} \text{ J/cm}^2$

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