

01	☐ A	☐ B	☐ C	☐ D	☐ E
02	☐ A	☐ B	☐ C	☐ D	☐ E
03	☐ A	☐ B	☐ C	☐ D	☐ E
04	☐ A	☐ B	☐ C	☐ D	☐ E
05	☐ A	☐ B	☐ C	☐ D	☐ E
06	☐ A	☐ B	☐ C	☐ D	☐ E
07	☐ A	☐ B	☐ C	☐ D	☐ E
08	☐ A	☐ B	☐ C	☐ D	☐ E
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14	☐ A	☐ B	☐ C	☐ D	☐ E
15	☐ A	☐ B	☐ C	☐ D	☐ E
16	☐ A	☐ B	☐ C	☐ D	☐ E
17	☐ A	☐ B	☐ C	☐ D	☐ E
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19	☐ A	☐ B	☐ C	☐ D	☐ E
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23	☐ A	☐ B	☐ C	☐ D	☐ E
24	☐ A	☐ B	☐ C	☐ D	☐ E
25	☐ A	☐ B	☐ C	☐ D	☐ E
26	☐ A	☐ B	☐ C	☐ D	☐ E

27	☐ A	☐ B	☐ C	☐ D	☐ E
28	☐ A	☐ B	☐ C	☐ D	☐ E
29	☐ A	☐ B	☐ C	☐ D	☐ E
30	☐ A	☐ B	☐ C	☐ D	☐ E
31	☐ A	☐ B	☐ C	☐ D	☐ E
32	☐ A	☐ B	☐ C	☐ D	☐ E
33	☐ A	☐ B	☐ C	☐ D	☐ E
34	☐ A	☐ B	☐ C	☐ D	☐ E
35	☐ A	☐ B	☐ C	☐ D	☐ E
36	☐ A	☐ B	☐ C	☐ D	☐ E
37	☐ A	☐ B	☐ C	☐ D	☐ E
38	☐ A	☐ B	☐ C	☐ D	☐ E
39	☐ A	☐ B	☐ C	☐ D	☐ E

PRACTICE QUESTIONS

NFPA- National Fire Protection Association

EST

Electrical Safety Technician

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for NFPA- National Fire Protection Association **EST** , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

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Send us three things and we will check it:

- the exam code, **EST**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

An arc flash is best described as which of the following phenomena?

- ☐ A A sustained electric current flowing through a low-resistance path between two points of different potential
- ☒ B A violent release of energy caused by an electrical fault that produces a sudden, intense burst of heat, light, pressure, and sound
- ☐ C The gradual heating of conductors over time due to overload conditions
- ☐ D The flow of electrical current through the human body to ground

ANSWER B

WHY An arc flash is the violent release of energy caused by an electrical fault, producing intense heat (up to 35,000°F), light, pressure waves (arc blast), and sound. Option A describes a short circuit. Option C describes overload heating. Option D describes electric shock.

QUESTION 2

SINGLE CHOICE

The incident energy level, measured in calories per square centimeter (cal/cm^2), is used in NFPA 70E primarily to determine which of the following?

- ☐ A The fault current available at a piece of equipment
- ☒ B The appropriate arc-rated (AR) personal protective equipment (PPE) rating and the arc flash boundary distance
- ☐ C The voltage class of the electrical system
- ☐ D The clearing time of the overcurrent protective device

ANSWER B

WHY Incident energy (cal/cm^2) determines both the required arc rating of PPE and the arc flash boundary distance. NFPA 70E Table 130.5(C) and 130.7(C) provide PPE category selections based on incident energy levels, while the arc flash boundary is calculated based on incident energy at the working distance.

QUESTION 3

SINGLE CHOICE

According to NFPA 70E, an energized work permit is required when performing work on or near energized electrical equipment at which voltage level or higher?

- ☐ A 24 volts
- ☒ B 50 volts
- ☐ C 120 volts
- ☐ D 240 volts

ANSWER B

WHY NFPA 70E considers 50 volts as the threshold where an energized electrical work permit is generally required for energized work. While shock hazards exist at lower voltages in some conditions, the 50V threshold is the standard reference point in Article 130.2 for energized work permits.

QUESTION 4

SINGLE CHOICE

Which NFPA 70E document is required to be performed before any electrical work begins to verify de-energization?

- ☐ A Job Safety Analysis (JSA)
- ☐ B Lockout/Tagout (LOTO) procedure only
- ☒ C Voltage verification test using an adequately rated test instrument
- ☐ D Arc flash risk assessment

ANSWER C

WHY Per NFPA 70E Article 120.5, after lockout/tagout is applied, the qualified person must verify the absence of voltage by testing all circuit parts using an adequately rated test instrument. This is a mandatory step before any electrical work proceeds on de-energized equipment.

QUESTION 5

SINGLE CHOICE

The 'Hierarchy of Risk Control' in NFPA 70E places which measure as the most preferred method for controlling electrical hazards?

- ☐ A Personal Protective Equipment (PPE)
- ☐ B Engineering controls such as ground-fault circuit interrupters
- ☒ C Elimination of the hazard
- ☐ D Administrative controls and warning signs

ANSWER C

WHY NFPA 70E Section 110.5(H) establishes the Hierarchy of Risk Control, with Elimination being the most effective (top of the hierarchy), followed by Substitution, Engineering Controls, Administrative Controls, and PPE (least effective, at the bottom). PPE is considered the last line of defense.

QUESTION 6

MULTIPLE CHOICE

Which of the following items are required elements of a complete arc-rated (AR) clothing system when performing work with an arc flash hazard present? (Choose three.)

- ☒ A AR long-sleeve shirt and AR pants (or AR coveralls)
- ☒ B Insulating rubber gloves with leather protectors
- ☐ C Cotton or wool t-shirt worn alone under regular work clothing
- ☒ D AR face shield with arc rating suitable for the task
- ☐ E Standard prescription eyeglasses without side shields
- ☐ F Hard hat (where applicable) with appropriate arc-rated face shield

ANSWER A · B · D

WHY A complete AR clothing system requires AR long-sleeve shirt and pants or coveralls (A), proper hand protection including insulating gloves (B), and an appropriately rated face shield (D). Option C is incorrect because base layers must be made of non-melting fibers. Option E is incorrect because safety glasses must have appropriate coverage. Option F is partially correct but the face shield element is already covered in D.

QUESTION 7 SINGLE CHOICE

The 'Arc Flash Boundary' is defined by NFPA 70E as the distance at which the incident energy equals which value?

- ☐ A 0.5 cal/cm²
- ☒ B 1.2 cal/cm²
- ☐ C 5.0 cal/cm²
- ☐ D 10.0 cal/cm²

ANSWER B

WHY NFPA 70E defines the Arc Flash Boundary as the distance at which the incident energy equals 1.2 cal/cm² (the threshold for a second-degree burn on bare skin). Workers crossing this boundary must wear appropriate AR PPE.

QUESTION 8 MULTIPLE CHOICE

Which of the following conditions must be satisfied before an Energized Electrical Work Permit (EEWP) can be issued? (Choose two.)

- ☒ A The employer can demonstrate that de-energization introduces additional or increased hazards
- ☐ B The work is performed during normal business hours only
- ☒ C Infeasibility due to equipment design or operational limitations is documented
- ☐ D The qualified person performing the work has less than one year of experience

ANSWER A - C

WHY Per NFPA 70E 130.2(A), energized work permits are only required when (1) de-energization introduces additional or increased hazards, OR (2) de-energization is infeasible due to equipment design or operational limitations. Option B is not a real condition. Option D contradicts NFPA 70E which requires the worker to be qualified (trained and experienced).

QUESTION 9

SINGLE CHOICE

What is the threshold voltage at which shock protection boundaries (Limited Approach, Restricted Approach, etc.) become applicable according to NFPA 70E?

- ☐ A 120 volts AC
- ☐ B 240 volts AC
- ☒ C 50 volts AC / 100 volts DC
- ☐ D 600 volts AC

ANSWER C

WHY NFPA 70E Table 130.2 establishes shock protection boundaries for systems operating at 50 volts AC or 100 volts DC and greater. Below these thresholds, specific shock boundary requirements are generally not mandated, though electrical safety principles still apply.