



CERTIFIED ELECTRICAL INSPECTOR



APPLICANT HANDBOOK



TABLE OF CONTENTS

ABOUT IA EI	1
ABOUT NFPA	1
ABOUT THE CERTIFICATION PROGRAM	2
TESTING AGENCY	2
STATEMENT OF NONDISCRIMINATION	2
ELIGIBILITY REQUIREMENTS FOR THE ELECTRICAL INSPECTOR CERTIFICATION PROGRAMS	2
EXAMINATION ADMINISTRATION	3
APPLICATION FEES	3
SCHEDULING AN EXAMINATION	
The Application Process	3
To Schedule an Examination	3
ASSESSMENT CENTER LOCATIONS	3
SPECIAL ACCOMMODATIONS FOR CANDIDATES WITH DISABILITIES	4
TELECOMMUNICATION DEVICES FOR THE DEAF	4
EXAMINATION APPOINTMENT CHANGES	4
Retake Examination	4
EXAMINATION CONTENT	4
Detailed Content Outline	5
PREPARE FOR THE EXAMINATION	7
SAMPLE EXAMINATION QUESTIONS	
Residential Sample Questions	7
Master Sample Questions	8
Sample Questions – Answer Key	9
TAKING THE EXAMINATION	10
SECURITY	10
PRACTICE TEST	10
TIMED EXAMINATION	10
INCLEMENT WEATHER, POWER FAILURE OR EMERGENCY	11
RULES FOR EXAMINATION	11
FAILING TO REPORT FOR AN EXAMINATION	12
FOLLOWING THE EXAMINATION	12
IF YOU PASS THE EXAMINATION	12
IF YOU DO NOT PASS THE EXAMINATION	12
SCORES CANCELED BY THE IA EI/NFPA OR AMP	12
CONFIDENTIALITY	12
DUPLICATE SCORE REPORT	12
PRACTICUM PHASE	13
RECERTIFICATION	13
ANNUAL PROGRAM FEE	14
TRANSFERS FROM OTHER RELATED CERTIFICATION PROGRAMS	14
TRANSFER FEE	14
APPEALS	14
IA EI/NFPA ELECTRICAL INSPECTOR CERTIFICATION EXAMINATION APPLICATION	15
REQUEST FOR SPECIAL EXAMINATION ACCOMMODATIONS	17
DOCUMENTATION OF DISABILITY-RELATED NEEDS	18





International Association of Electrical Inspectors

ABOUT IAEI

The International Association of Electrical Inspectors' (IAEI) mission has always been about safety. This single mission: "To keep family and friends safe from the savage bite of electricity" is the foundation of all of the association's activities. As the various methods of fulfilling this mission have evolved, the character of the association has grown to that of a brotherhood with a serious business commitment. Through that growth has emerged three streams: service, publishing, and education. Each stream is focused on helping the inspectors and associate members fulfill the mission in the quickest, most effective way possible.

Education occurs continuously on several levels: training beginning inspectors, training residential inspectors, and training master inspectors. To those programs is added training the trainers. IAEI emphasizes producing qualified inspectors who are certified to a nationally recognized certification process. Hundreds of hours are invested in preparing seminar programs. Detailed drawings that explicitly demonstrate concepts or procedures are created. Innumerable requests for code interpretations are fielded on a daily basis.

Publishing has proven to be the most effective method of spreading information. From the bimonthly magazine that offers timely and significant articles that have direct relevance to the members to various textbooks, electronic media, and the website, highly trained and dedicated staff and contributors invest thousands of hours collecting material, writing, editing, and producing quality materials that promote electrical safety.

Service is about more than facilitating membership needs. It is about researching solutions to dangerous situations observed by inspectors during their field inspections. It is about being alert to each new development that would add to the safety of the public. It is about studying and memorizing the standards so that we can make fair and impartial judgments. It is about forty members each spending hundreds of hours serving on code making panels, reading code proposals and drafting responses to those proposals. It is about individual members investing valuable personal time in teaching, planning meetings, answering questions, and helping each other succeed.

IAEI has for 75 years quietly done its job. Because of the diligence of thousands of trained electrical inspectors, the world is a safer place and electricity is somewhat tamed.

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ABOUT NFPA

NFPA is a nonprofit membership organization founded in 1896, with today over 75,000 members. NFPA's mission is to reduce the worldwide burden of fire and other hazards on the quality of life. NFPA activities fall into four broad, interrelated categories: codes and standards, professional development, research, and public education.

NFPA's codes and standards activity involves development, publication, and dissemination of more than 300 safety-related consensus codes and standards for the built environment.

NFPA's research efforts encompass the collection and analysis of data and investigation of significant fires and other building impacting events that are opportunities to learn how codes and standards perform and how they might be improved.

NFPA's public education activities are focused on motivating and enabling the public to learn and practice injury-avoiding behaviors. NFPA's outreach programs include Fire Prevention Week, Risk Watch®, NFPA's Center for High-Risk Outreach and the award-winning Sparky the Fire Dog® website.

NFPA's professional development consists of training through seminars instructing attendees on the principles and application of NFPA's key codes and standards and through Certification Programs. There are NFPA Certification Programs for Fire Inspectors, Fire Plan Examiners, Fire Protection Specialists, Building Inspectors, and Building Plans Examiners. Two levels of Electrical Inspector, residential and master, are offered through NFPA in partnership with the International Association of Electrical Inspectors (IAEI).

NFPA Certification Department
 National Fire Protection Association
 1 Batterymarch Park
 Quincy, MA 02169
 Phone: 800/344-3555
 Email: cei@nfpa.org
 Web page: www.nfpa.org/certification



ABOUT THE CERTIFICATION PROGRAM

The need for an IAEI/NFPA Certification Program was identified by local entities, state agencies, and national organizations. Their recommendation was that IAEI and NFPA jointly develop state of the art certification programs based on knowledge and the practical application of the National Electrical Code® (NEC).

In response to these industry needs, IAEI and NFPA have undertaken the responsibility for designing valid and reliable Residential and Master Electrical Inspector Certification Programs and ensuring these programs are accessible to all Electrical Inspectors.

The benefits of the programs include the following:

- Certification by two of the most recognized international organizations in the electrical inspector industry.
- Listing in the IAEI certified electrical inspector registry.
- Compelling evidence demonstrating your professional accomplishment.
- Name published in *IAEI News*.
- Expertise recognized across the country.
- Lapel pin, Certificate and Wallet Card.

Benefits to the organizations you work with:

- Ability to incorporate a nationally recognized system into the inspector qualification process.
- Quality control through professional credentials.
- Improved electrical safety, potentially reducing liability.
- Reduced expenditures on maintaining or developing "local" certification programs.
- Opportunity to recognize the professional accomplishments of staff or vendors.
- Productivity improvements through increased efficiency.

It is the mission of IAEI/NFPA's certification program to promote professionalism within the Electrical Inspector field-of-practice through a widely accepted, recognized, respected and practical Certified Electrical Inspector Program.

The goals of the certification program are to:

- Promote electrical safety.
- Enhance professionalism within the Electrical Inspector community.
- Ensure a uniform, fair process for certification that is accessible to everyone.
- Ensure proficiency in the use of codes and standards.
- Facilitate success for those seeking certification.
- Implement a program designed for use by regulatory bodies.
- Promote professional development through continuous learning.

- Recognize and provide evidence of competence as related to NEC® (2002), NFPA *Electrical Inspection Manual*, and the current edition of the *UL General Information for Electrical Equipment 2002 (White Book)*.

TESTING AGENCY

Applied Measurement Professionals, Inc. (AMP) is the professional testing agency under contract with IAEI and NFPA to assist in the development, administration, scoring and analysis of its Certified Electrical Inspector-Residential and Master Programs.

STATEMENT OF NONDISCRIMINATION

IAEI/NFPA and AMP do not discriminate among candidates on the basis of age, gender, race, color, religion, national origin, disability or marital status.

ELIGIBILITY REQUIREMENTS FOR THE ELECTRICAL INSPECTOR CERTIFICATION PROGRAMS

Residential Electrical Inspector

High School Diploma or GED plus:

- Completion of Registered Electrical Apprenticeship Training Program, or
- Associate Degree in Electrical Construction Technology (or equivalent), or
- Journeyman Electrician (or equivalent) or Master Electrician, or
- BS in Electrical Engineering or PE in Electrical Engineering, or
- 4,000 hours as an electrician, or
- 2,000 hours as an electrical inspector

Master Electrical Inspector

The program eligibility requirements are the same as Residential Inspector Program with exception of the following changes:

- 8,000 hours as an electrician, or
- 4,000 hours as an electrical inspector

EXAMINATION ADMINISTRATION

The examinations are delivered via computer at over 116 AMP Assessment Centers geographically located throughout the United States. The examination is administered by appointment only Monday through Friday at 9:00 a.m. and 1:30 p.m. Candidates are scheduled on a first-come, first-served basis. The examination is not offered on the following holidays:

- New Year’s Day
- Martin Luther King Day
- Presidents’ Day
- Good Friday
- Memorial Day
- Independence Day (July 4)
- Labor Day
- Columbus Day
- Veterans’ Day
- Thanksgiving (and the following Friday)
- Christmas Eve Day
- Christmas Day
- New Year’s Eve Day

APPLICATION FEES

Candidates must submit the appropriate fee with the complete examination application. Payment may be made by credit card (Visa, MasterCard, American Express or Discover), cashier’s check, money order, purchase order or personal check made payable to NFPA.

- CEI – Residential Application Fee – \$250
- CEI – Master Application Fee – \$250
- CEI – Master and Residential Application Fee – \$500

SCHEDULING AN EXAMINATION

The Application Process

The candidate completes and submits a paper application and appropriate fee when the eligibility requirements are satisfied. IAEL/NFPA reserves the right to verify information supplied by or on behalf of a candidate. Any misrepresentation of information shall be considered grounds for prohibition from testing or revocation of certification. An application is considered complete only if all information requested is complete, legible and accurate; if the candidate is eligible for the examination; and if the appropriate fee accompanies the application.

APPLICATIONS THAT ARE INCOMPLETE WILL BE RETURNED, WITH ANY FEE SUBMITTED, MINUS A \$50 PROCESSING FEE.

Once the application is processed a Letter of Authorization to take the examination is sent to the candidate within four weeks. The Letter of Authorization to take the examination is valid for 90 days. A candidate who fails to schedule an appointment for examination within the 90-day period forfeits the application and all fees paid to take the examination. A complete application and examination fee are required to reapply for the examination.

To Schedule an Examination

After eligibility requirements are approved by IAEL/NFPA and the candidate has received written confirmation from IAEL/NFPA, there are two ways to schedule an appointment for the Certified Electrical Inspector Examinations.

1. Schedule Online: The candidate may schedule an examination appointment online by visiting www.goAMP.com and clicking on the link **Online Application/Scheduling**. The computer screens will guide the candidate through the complete scheduling process. If special accommodations are being requested, please contact AMP at 888/519-9901.

OR

2. Call AMP to Schedule a Testing Appointment: Call AMP at 888/519-9901 to schedule a testing appointment. This toll-free number is answered from 7:00 a.m. to 7:00 p.m. (Central Time) Monday through Thursday and 7:00 a.m. to 5:00 p.m. (Central Time) on Friday.

Be prepared to confirm a location, a preferred date and time for testing, and to provide your Social Security number as a unique identification number. When you contact AMP to schedule an examination appointment, you will be notified of the time to report to the center. Please make a note of it because you will NOT receive written confirmation.

If you contact AMP by 3:00 p.m. Central Time on...	Your examination may be scheduled as early as...
Monday	Thursday
Tuesday	Friday
Wednesday	Monday
Thursday	Tuesday
Friday	Wednesday

ASSESSMENT CENTER LOCATIONS

AMP Assessment Centers are typically located in H&R Block offices. A current list of AMP Assessment Centers can be viewed at www.goAMP.com. Specific address information will be provided when a candidate schedules an examination appointment.



SPECIAL ACCOMMODATIONS FOR CANDIDATES WITH DISABILITIES

IAEI/NFPA and AMP comply with the Americans with Disabilities Act and strive to ensure that no individual with a disability is deprived of the opportunity to take the examination solely by reason of that disability. AMP will provide reasonable accommodations for candidates with disabilities.

Wheelchair access is available at all established Assessment Centers. Candidates with visual, sensory or physical disabilities that would prevent them from taking the examination under standard conditions may request special accommodations and arrangements. To request special accommodations, complete the REQUEST FOR SPECIAL EXAMINATION ACCOMMODATIONS form included in this handbook and submit it with your application and fee at least 45 business days prior to your desired testing date. Please inform AMP of your need for special accommodations when scheduling your examination.

TELECOMMUNICATION DEVICES FOR THE DEAF

AMP is equipped with Telecommunication Devices for the Deaf (TDD) to assist deaf and hearing-impaired candidates. TDD calling is available 8:30 a.m. to 5:00 p.m. (CST) Monday-Friday at 913/495-4437. This TDD phone option is for individuals equipped with compatible TDD machinery.

EXAMINATION APPOINTMENT CHANGES

A candidate may reschedule an examination appointment at no charge **once** by calling AMP at 888/519-9901 **at least four business days** prior to the scheduled testing session. (See table below.)

If the examination is scheduled on...	AMP must be contacted by 3:00 p.m. Central Time to reschedule the examination by the previous...
Monday	Tuesday
Tuesday	Wednesday
Wednesday	Thursday
Thursday	Friday
Friday	Monday

A candidate who:

- wishes to reschedule an examination but fails to contact AMP at least four business days prior to the scheduled testing session,
- wishes to reschedule a second time,
- appears more than 15 minutes late for an examination and cannot be seated, or
- fails to report for an examination appointment,

forfeits the application and all fees paid to take the examination. A complete application and examination fee are required to reapply for examination.

Retake Examination

You are allowed an additional 45 days from the date you take the examination if you need to retake the exam. The retake fee is \$100. You must complete the certification program within twelve (12) months of application approval by IAEI/NFPA.

EXAMINATION CONTENT

Residential – The three-hour, open-book, 90 question CEI-R computer-based examination is designed to evaluate the applicant’s electrical inspection principles, knowledge, and code application skills at the level of Residential Electrical Inspector (as defined in the NFPA *Electrical Inspection Manual*).

Master – The four-hour, open-book, 120 question CEI-M computer-based examination is designed to evaluate the applicant’s electrical inspection principles, knowledge, and code application skills at the level of Master Electrical Inspector (as defined in the NFPA *Electrical Inspection Manual*).

Each item on the examinations is categorized by a cognitive level that a candidate would likely use to respond. These categories are:

1. **Recall:** The ability to recall or recognize specific information is required.
2. **Application:** The ability to comprehend, relate or apply knowledge to new or changing situations is required.
3. **Analysis:** The ability to analyze and synthesize information, determine solutions and/or to evaluate the usefulness of a solution is required.

Certified Electrical Inspector Detailed Content Outline

RE = Recall AP = Application AN = Analysis	Master				Residential			
	RE	AP	AN	TOTAL	RE	AP	AN	TOTAL
I. General Requirements	6	8	0	14	4	6	0	10
A. General Requirements for Electrical Inspections	6	8	0	14	4	6	0	10
II. Wiring Methods Checklists	6	8	0	14	4	6	0	10
A. General Wiring Methods	2	1	0	3	1	2	0	3
B. Boxes and Conduit Bodies	2	2	0	4	1	2	0	3
C. Cabinets and Cutout Boxes	1	2	0	3	1	0	0	1
D. Switches and Receptacles	1	3	0	4	1	2	0	3
III. Services, Feeders, and Branch-Circuits	3	7	3	13	2	3	3	8
A. Services	1	3	0	4	1	1	1	3
B. Feeders	1	1	3	5	0	1	0	1
C. Branch Circuits	1	3	0	4	1	1	2	4
IV. Grounding and Bonding	4	7	2	13	2	6	1	9
A. Service Grounding and Bonding	2	3	1	6	1	3	0	4
B. Equipment Grounding and Bonding	2	4	1	7	1	3	1	5
V. Dwelling Units	2	6	2	10	10	16	5	31
A. Residential Rough Inspections	1	3	0	4	6	7	0	13
B. Residential Service, Feeders, and Grounding Inspections	0	1	1	2	1	2	3	6
C. Residential Finish Inspections	1	2	1	4	3	7	2	12
VI. Commercial and Industrial	3	5	4	12	0	2	1	3
A. Motors	0	1	2	3	0	1	0	1
B. Air-conditioning and Refrigerating Equipment	0	1	1	2	0	1	1	2
C. Transformers	1	1	1	3	0	0	0	0
D. Phase Converters	0	1	0	1	0	0	0	0
E. Capacitors	0	1	0	1	0	0	0	0
F. Storage Batteries	1	0	0	1	0	0	0	0
G. Equipment Over 600 Volts, Nominal	1	0	0	1	0	0	0	0



RE = Recall AP = Application AN = Analysis	Master				Residential			
	RE	AP	AN	TOTAL	RE	AP	AN	TOTAL
VII. Hazardous Locations	1	4	3	8	0	0	0	0
A. Class 1, Class 2, and Class 3 Locations	0	1	2	3	0	0	0	0
B. Commercial Garages, Aircraft Hangers, Gasoline Dispensing and Service Stations, Bulk Storage Plants, Spray Application, Dipping, and Coating Processes	1	3	1	5	0	0	0	0
VIII. Special Occupancies, Equipment, and Conditions	3	12	4	19	2	4	0	6
A. Special Occupancies	2	7	2	11	1	2	0	3
B. Special Equipment	1	4	2	7	0	1	0	1
C. Solar Photovoltaic Systems and Interconnected Electric Power Production Sources	0	1	0	1	1	1	0	2
IX. Swimming Pools and Related Installations	2	2	0	4	3	4	0	7
A. Permanently Installed Swimming Pools	1	1	0	2	2	3	0	5
B. Related Installations	1	1	0	2	1	1	0	2
X. Emergency and Standby Systems	2	2	1	5	1	1	0	2
A. Fire Pumps	1	0	0	1				
B. Emergency, Legally Required and Optional Standby Systems	1	2	1	4	1	1	0	2
XI. Signaling and Communication Circuits	4	4	0	8	4	0	0	4
A. Class 1, Class 2, Class 3, Remote Control, Signaling, and Power-Limited Circuits	1	1	0	2	1	0	0	1
B. Fire Alarm Systems	1	1	0	2	1	0	0	1
C. Optical Fiber Cables, Raceways, and Communication Systems	1	1	0	2	1	0	0	1
D. Community Antenna Television, Radio Distribution, and Network-Powered Broadband Communications Systems	1	1	0	2	1	0	0	1
Totals	36	65	19	120	32	48	10	90

PREPARE FOR THE EXAMINATION

It has been proven that by studying for the examination, you can increase your score.

A Comprehensive Examination Study Guide is available for purchase from IAEI.

The references needed to prepare for the examination are:

1. *NFPA Electrical Inspection Manual with Checklists* (Based on the 2002 NEC).
2. NEC® (NFPA 70-2002).
3. *UL General Information for Electrical Equipment*, current edition (White Book).

Your primary objective in preparing for the examination is to pass. Other objectives such as learning new material and reviewing old material are critical toward this objective. Begin your study by developing your strategy for success.

A good study strategy includes preparation. To prepare, determine first what you need to learn, choose your study materials, and select a quiet, comfortable place that allows you to focus. Before you begin, check to make sure you have everything you need. Try to avoid interruptions for any reason.

Developing a study plan will allow you to learn the most as you study. Include setting goals in your study plan. Review what you have studied as often as possible. The more you review, the more you will retain.

When you begin studying, learn the layout of the standards that will be used as reference material during the examination. While it is not necessary to memorize the specific requirements contained in the codes and standards, it is important to know what information is covered by the documents and how to quickly locate information in them. Look for tables that summarize requirements, these could save you valuable time during the written examination.

Once you have access to, or have obtained, all the resource materials necessary for study, you should focus on learning the layout of your resource materials. Each NEC document is divided into similar parts, beginning with administration and definitions, followed by the specific requirements in the code. The better you understand the layout of the resources, the easier it will be to find answers to questions during the examination.

Develop an understanding of the general content of each resource. With an understanding of the resource, it will be easier to determine the applicable document for answers to questions during the written examination.

The better you understand the layout, and general content of each resource, the quicker you will be able to find information. It is extremely important that you pace yourself during the written examination. This is one reason why review of materials is so important.

SAMPLE EXAMINATION QUESTIONS

Answers to the Sample Examination Questions can be found on page 9.

Following are sample residential and master inspector questions in the same style and similar content as will be on your examination. Use the sample questions to verify your understanding of the topics in the examination. Answers are provided for the sample questions.

Residential Sample Questions

1. The interrupting rating of a circuit breaker is measured in which of the following?
 - A. Volts
 - B. Watts
 - C. Volt-amperes
 - D. Amperes
2. Which of the following is true about a surface-mounted cabinet that is installed in a wet location?
 - A. There shall be at least a 1/8" airspace between the cabinet and the wall on which it is mounted.
 - B. Nonmetallic cutout boxes shall be permitted to be installed without an air space on a nonmetallic wall.
 - C. A metallic cutout box shall be insulated against accidental contact.
 - D. Both metallic and nonmetallic cutout boxes shall be weatherproof.
3. Which of the following wiring methods is **NOT** permitted for use as the wiring method for a service?
 - A. liquid tight flexible metal conduit 8' long
 - B. rigid nonmetallic conduit 10' long
 - C. a wireway 10' long
 - D. a busway 24' long
4. An effectively grounded metal water pipe is used as the grounding electrode for a single family dwelling. What is the minimum size bonding jumper around insulated joints at a water softener if the service entrance conductors are sized at 4/0 AWG copper.
 - A. 4 AWG copper
 - B. 2 AWG copper
 - C. 1/0 AWG copper
 - D. 2/0 AWG copper

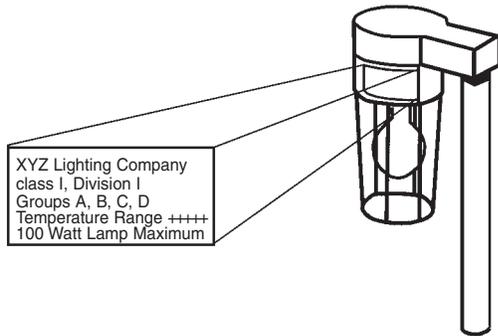


5. A kitchen island counter space 22 inches by 18 inches requires how many receptacle outlets?
 - A. 0
 - B. 1
 - C. one at each end
 - D. one at each side
6. For a Class 1 circuit, what is the maximum rating permitted for overcurrent protection for a 16 AWG conductor?
 - A. 18 amperes
 - B. 14 amperes
 - C. 12 amperes
 - D. 10 amperes
7. For a 125-volt, 15-ampere duplex receptacle, the electrical terminals are often distinguishable by different colors connection terminals. Which conductor must be connected to the white or silver colored receptacle terminal?
 - A. grounding conductor
 - B. grounded conductor
 - C. ungrounded conductor
 - D. bonding conductor
8. The storage batteries of a solar photovoltaic system for a dwelling have live parts that are accessible. The cells of the batteries shall be connected so as to operate at less than
 - A. 25 volts.
 - B. 30 volts.
 - C. 40 volts.
 - D. 50 volts.
9. A fountain that has water common to a pool shall comply with all the provisions for
 - A. permanently installed swimming pools.
 - B. pools.
 - C. fountains only if no lighting is installed in the fountain.
 - D. fountains only if no lighting is installed in the pool.
10. A transfer switch for a standby power system in a dwelling unit shall be
 - A. identified for standby use.
 - B. approved by the authority having jurisdiction.
 - C. electrically operated and mechanically held.
 - D. rated for continuous use.

Master Sample Questions

1. A water pipe is installed 6 ft 6 in over the top of a switchboard. This installation is permitted
 - A. if protection from leaks is provided for the switchboard.
 - B. as long as the pipe is above the dedicated space.
 - C. only by special permission of the AHJ.
 - D. only in existing installations.
2. Conductors are feeding through a fusible safety switch enclosure that has adequate space for this provided purpose. Assuming there are no splices on taps, what is the maximum fill at any cross section for a 3-inch x 4-inch wiring space within the switch?
 - A. 4.8 square inches
 - B. 6.0 square inches
 - C. 7.2 square inches
 - D. 9.0 square inches
3. A service is installed where equipment ground fault protection is required. Which of the following is true about testing of the system?
 - A. Testing is not required.
 - B. Testing is not required if installed by qualified persons.
 - C. Testing is required within 30 days of operation.
 - D. Testing is required before putting it into operation.
4. A 1000-ampere service is supplied with three, 400 kcmil copper THWN conductors per phase. The water piping system for the building is not effectively grounded. What is the minimum size copper bonding conductor required for bonding the water piping system to the service?
 - A. 1/0 AWG
 - B. 2/0 AWG
 - C. 3/0 AWG
 - D. 400 kcmil
5. Overhead service conductors must have certain clearances from windows, decks, porches, etc. Which of the following statements are true?
 - A. The point of attachment can be mounted directly over the top of a window, which is screwed shut with tamper proof screws.
 - B. A through-the-roof mast can be mounted within 2 ft 6 in of the edge of a deck, provided the drip loop is 10 feet or more above the deck surface.
 - C. The point of attachment can be located within 3 feet of a ladder, if the ladder incorporates safety brackets.
 - D. A point of attachment located 4 feet horizontally from a second floor deck can be mounted 8 feet vertically above the deck.

6. What is the minimum ampacity of the feeder conductors supplying 2-10 hp, 2-15 hp, and 4-30 hp three-phase, 460-volt squirrel cage motors?
- A. 230 amperes
 B. 240 amperes
 C. 276 amperes
 D. 280 amperes
7. If the auto ignition temperature of acetylene is 305° C, what is the maximum temperature (Identification Number) rating allowed for this fixture and to what ambient temperature is this referenced?



- A. T1 and 30° C
 B. T2 and 30° C
 C. T1 and 40° C
 D. T2 and 40° C
8. Which of the following is an example of a place of assembly?
- A. shopping mall
 B. auditorium
 C. machine shop
 D. hospital
9. A 480-volt, 3 phase, 4-wire wye service consists of two 3000 amp disconnecting means. An interactive system is operating in parallel with this service. Where is the output of the interactive system required to be connected?
- A. to the load side of the service equipment
 B. to the supply side of the service equipment ground fault protection
 C. to the underground conductors of the service
 D. to the ground fault system
10. Which of the following wiring methods is permitted for the control circuit wiring for a fire pump?
- A. liquid tight flexible metal conduit
 B. type MC cable
 C. electrical metallic tubing
 D. rigid nonmetallic conduit

Sample Questions – Answer Key

Please use this answer key to evaluate your responses. Mark on this answer key those questions you answered incorrectly and review those documents to find the correct answer when preparing for the examination.

RESIDENTIAL SAMPLE QUESTION ANSWERS

"✓" for Incorrect Responses	Question Number	Answer	NEC Reference
_____	1	D	110.9
_____	2	D	312.2(A)
_____	3	A	230.43
_____	4	B	250.66
_____	5	A	210.52(C)(2)
_____	6	D	725.23
_____	7	B	200.10(B)
_____	8	D	690.71(B)(1)
_____	9	B	680.50
_____	10	B	702.4

MASTER SAMPLE QUESTION ANSWERS

"✓" for Incorrect Responses	Question Number	Answer	NEC Reference
_____	1	A	110.26(F)(1)(a) & (b)
_____	2	A	312.8, 404.3(B)
_____	3	D	230.95, 215.10
_____	4	C	250.104(A)(1), Table 250.66
_____	5	D	230.24
_____	6	B	430.24, Table 430.150
_____	7	D	500.8(B), 505.9(d)(1)
_____	8	B	518.2(A)
_____	9	B	705.32
_____	10	A	695.14(E)



TAKING THE EXAMINATION

The CEI-R and CEI-M Examinations are open-book, 3 and 4-hour, 90 and 120 multiple-choice question examinations, respectively. Only the reference documents NEC® (NFPA 70-2002), NFPA *Electrical Inspection Manual*, and the current edition of the UL *General Information for Electrical Equipment* (White Book) may be used during the examination.

It is highly recommended that applicants practice for the examination using the sample examination questions included in this Handbook or the Comprehensive Examination Study Guide, which is available from IAEI. Candidates should become familiar with each of the referenced documents' content and organization.

During the examination, applicants will be expected to interpret and apply code-related material in response to the examination questions. Applicants will need access to each of the referenced publications during the examination. It is the applicant's responsibility to bring those materials that are needed to complete the examination to the test site.

On the day of your testing appointment, report to the Assessment Center no later than your scheduled testing time. Once you enter the office, look for the signs indicating AMP Assessment Center Check-in. **A CANDIDATE WHO ARRIVES MORE THAN 15 MINUTES AFTER THE SCHEDULED TESTING TIME WILL NOT BE ADMITTED.**

To gain admission to the Assessment Center, a candidate needs to present two forms of identification, one with a current photograph. Both forms of identification must be current and include the candidate's current name and signature. The candidate will be required to sign a roster for verification of identity.

Acceptable forms of photo identification include a current driver's license with photograph, a current state identification card with photograph, a current passport, or a current military identification card with photograph. Employment ID cards, student ID cards and any type of temporary identification are NOT acceptable as primary forms of identification. **YOU MUST HAVE PROPER IDENTIFICATION TO GAIN ADMISSION TO THE ASSESSMENT CENTER.**

After your identification has been confirmed, you will be directed to a testing carrel. You will be instructed on-screen to enter your Social Security number. You will take your photograph which will remain on screen throughout your testing session. This photograph will also print on your score report.

SECURITY

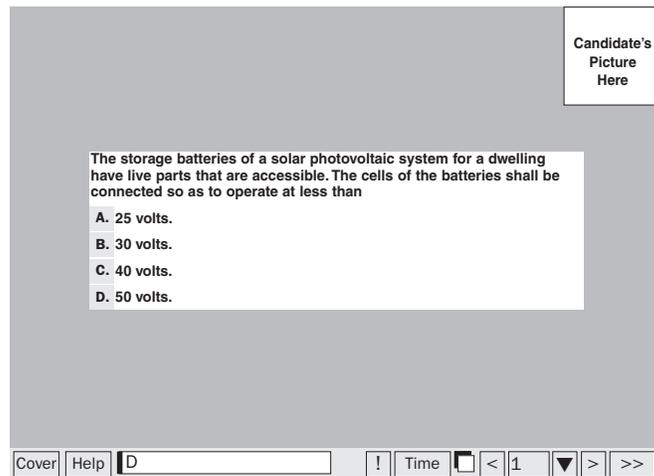
IAEI/NFPA and AMP maintain test administration and test security standards that are designed to assure that all candidates are provided the same opportunity to demonstrate their abilities. The Assessment Center is continuously monitored by audio and video surveillance equipment for security purposes.

PRACTICE TEST

Prior to attempting the examination, you will be given the opportunity to practice taking an examination on the computer. The time you use for this practice test is NOT counted as part of your examination time. When you are comfortable with the computer testing process, you may quit the practice session and begin the timed examination.

TIMED EXAMINATION

Following the practice test, you will begin the actual examination. Before beginning, instructions for taking the examination are provided on-screen. Below is an example of the examination screen.



The computer monitors the time you spend on the examination. The examination will terminate if you exceed the time allow (3 hours for CEI-R and 4 hours for CEI-M). You may click on the "Time" box in the lower right-hand corner of the screen or select the Time key to monitor your time. A digital clock indicates the time remaining for you to complete the examination. The Time feature may be turned off during the examination.

Only one examination item is presented at a time. The item number appears in the lower right portion of the screen. Choices of answers to the test item are identified as A, B, C, or D. You must indicate your choice by either typing in

the letter in the response box in the lower left portion of the computer screen or clicking on the option using the mouse. To change your answer, enter a different option by pressing the A, B, C, or D key or by clicking on the option using the mouse. You may change your answer as many times as you wish during the testing time limit.

To move to the next item, click on the forward arrow (>) in the lower right portion of the screen or select the NEXT key. This action will move you forward through the examination item by item. If you wish to review any item or items, click the backward arrow (<) or use the left arrow key to move backward through the examination.

A test item may be left unanswered for return later in the testing session. Items may also be bookmarked for later review by clicking in the blank square to the right of the Time button. Click on the double arrow (>>) or select the NEXT key to advance to the next unanswered or bookmarked item on the examination. To identify all unanswered and bookmarked items, repeatedly click on the double arrow (>>) or press the NEXT key. When the examination is completed, the number of test items answered is reported. If not all items have been answered and there is time remaining, return to the examination and answer those items. Be sure to provide an answer for each test item before ending the examination. There is no penalty for guessing.

During the examination, online comments may be provided for any item by clicking on the button displaying an exclamation point (!) to the left of the Time button. This opens a dialogue box where comments may be entered. Comments will be reviewed, but individual responses will not be provided.

INCLEMENT WEATHER, POWER FAILURE OR EMERGENCY

In the event of inclement weather or unforeseen emergencies on the day of an examination, AMP will determine whether circumstances warrant the cancellation, and subsequent rescheduling, of an examination. The examination will usually not be rescheduled if the Assessment Center personnel are able to open the Assessment Center. If power to a testing center is temporarily interrupted during an administration, your examination will restart where you left off and you may continue the examination.

Candidates may contact AMP's Weather Hotline at 913/495-4418 (24 hours/day) prior to the examination to determine if AMP has been advised that any Assessment Centers are closed. Every attempt is made to administer the examination as scheduled; however, should an examination be canceled at an Assessment Center, all scheduled candidates will receive notification following the examination regarding a rescheduled examination date or reapplication procedures.

RULES FOR EXAMINATION

1. Report to your designated Assessment Center location on the day of the examination at the time you were instructed when your appointment was scheduled. **Candidates arriving more than 15 minutes late will not be admitted, will forfeit their examination fee, and must reapply for the examination by contacting NFPA.**
2. No books, papers, dictionaries, other reference materials or personal items (e.g., purses, briefcases, coats) may be taken into the Assessment Center; you must leave all personal items at home or in your automobile. AMP will not be responsible for loss or damage to personal items.
3. No personal pens, pencils or other writing instruments will be allowed in the testing room. Pencils will be provided during check-in.
4. You will be provided with scratch paper to use during the examination, which must be returned to the supervisor at the completion of testing, or you will not receive a score report. No documents or notes of any kind may be removed from the examination room. All computer screens, questions, paper and written materials are the property of IAEI/NFPA and AMP and may not be reproduced in any form.
5. No questions concerning the content of the examination may be asked during the examination.
6. Eating, drinking or smoking will not be permitted in the Assessment Center.
7. You may take a break whenever you wish, but you will not be allowed additional time to make up for time lost during breaks.
8. The supervisor may dismiss a candidate from the examination for any of the following reasons:
 - the candidate's admission to the examination is unauthorized;
 - the candidate creates a disturbance, is abusive, or otherwise uncooperative;
 - the candidate gives or receives help or is suspected of doing so;
 - the candidate attempts to record test questions or make notes;
 - the candidate attempts to take the examination for someone else; or
 - the candidate is observed with notes.
9. No electronic devices other than approved calculators are permitted in the Assessment Center, including telephones or signaling devices such as pagers and alarms. In addition, personal digital assistants (PDAs) and other hand-held computers are prohibited.

Violation of any of the above provisions results in dismissal from the testing session. The candidate's score on the examination is voided and examination fees are not refunded.



FAILING TO REPORT FOR AN EXAMINATION

A candidate who fails to report for an examination forfeits the application and all fees paid to take the examination. A completed application and examination fee are required to reapply for examination.

FOLLOWING THE EXAMINATION

After completing the examination, candidates are asked to complete a short evaluation of their testing experience. Then, candidates are instructed to report to the Assessment Center Supervisor to receive their score report. Your score report will indicate a "pass" or "fail." Scores are reported in written form only, in person or by U.S. mail. Scores are not reported over the telephone, by electronic mail or by facsimile.

The methodology used to set the minimum passing score is the Angoff method, in which expert judges estimate the passing probability of each item on the examination. These ratings are averaged to determine the minimum passing score (i.e., the number of correctly answered items required to pass the examination).

IF YOU PASS THE EXAMINATION

Once the examination is successfully completed, in 4-6 weeks you will receive a **Practicum Exercises Workbook** that includes:

- Detailed instructions
- Performance checklist
- Submission guidelines
- Verification forms for submittal

See page 13 for more information about the Practicum Phase.

IF YOU DO NOT PASS THE EXAMINATION

Upon notification, those who do not pass the examination must schedule to retake the examination within 45 days. Please follow the procedure included with the did not pass notice, and submit the required retake fee of \$100.

After 45 days, or if a passing score is not achieved after the second attempt, the applicant must reapply to the program by submitting the full application fee and application. Applications cannot be updated.

SCORES CANCELED BY THE IAEI/NFPA OR AMP

IAEI/NFPA and AMP are responsible for the integrity of the scores they report. On occasion, occurrences, such as computer malfunction or misconduct by a candidate, may cause a score to be suspect. IAEI/NFPA and AMP are committed to rectifying such discrepancies as expeditiously as possible. IAEI/NFPA may void examination results if, upon investigation, violation of its regulations is discovered.

CONFIDENTIALITY

Information about candidates for testing and their examination results are considered confidential. Studies and reports concerning candidates will contain no information identifiable with any candidate, unless authorized by the candidate.

DUPLICATE SCORE REPORT

Candidates may purchase additional copies of their score reports at a cost of \$25 per copy. Requests must be submitted to AMP, in writing, within 12 months after the examination. The request must include the candidate's name, Social Security number, mailing address, telephone number, date of examination and examination taken. Submit this information with the required fee payable to AMP. Duplicate score reports will be mailed within approximately two weeks after receipt of the request and fee.

PRACTICUM PHASE

The following is an overview of the Practicum Phase. Details are shown in the Residential and Master Electrical Inspector Practicum Phase Workbooks, which are provided to certificate candidates upon the successful completion of the examination.

The Practicum Phase is designed to ensure that an individual demonstrates experience in the particular field prior to becoming certified. This phase not only ensures that you have relevant job experience, but also provides additional learning opportunities.

After passing the examination, applicants have 270 days maximum to complete the field practicum portion of the program, and submit Practicum Phase materials.

Practicum for Residential Electrical Inspector

Twenty (20) dwelling inspections must be conducted and reported. The applicant completes check-off items on the performance checklist, and then must have each verification form signed by a supervisor. Additionally, a *Supervisor's Evaluation Form* is required, indicating applicant Pass/Fail for at least five inspections.

Notice: a senior inspector or manager must supervise five of the following inspections, one of which must be a swimming pool.

- A total of twenty (20) residential dwellings must be inspected.
- Ten (10) may be rehabs.
- At least 5 must include service inspections
- At least two (2) swimming pool inspections. *The Swimming Pool Case Study may be substituted for this requirement.*

Practicum for Master Electrical Inspector

Thirty (30) inspections must be conducted and reported. The applicant completes the check-off items on the performance checklist, and then must have a verification form signed by a supervisor for each inspection. Additionally, a *Supervisor's Evaluation Form* is required, indicating applicant Pass/Fail for at least eight inspections.

Thirty (30) Inspections must include the following:

Notice: a senior inspector or manager must supervise eight of the following inspections.

- At least five (5) one and two family dwellings. Five (5) must be supervised inspections.
- At least one (1) must be a Multi-family dwelling. One (1) must be supervised.
- At least five (5) must be commercial or industrial inspections. One (1) must be supervised.
- At least five (5) must include service inspections. One (1) must be supervised.

Optional Inspections for Master Electrical Inspector – Must be Supervised

The Master Electrical Inspector applicant may choose to complete the following inspections, any of which must be supervised.

- Agricultural
- Marina
- Industrial
- Manufactured home

The evaluation parameters for Residential and Master Electrical Inspector are based on the standards and practices identified in:

- NFPA *Electrical Inspection Manual with Checklists* (Based on NFPA 70-2002)
- NEC® (NFPA 70-2002)
- UL *General Information for Electrical Equipment*, current edition (White Book)

After the Practicum Phase requirements have been fulfilled, the information is sent to the IAEI/NFPA Certification Department for final validation.

If all is in order, and other certification program requirements are met, you will then receive your official certification by mail from IAEI/NFPA.

You will receive a letter, certificate, wallet card, and pin acknowledging your credential.

RECERTIFICATION

Once you have been certified as a Residential or Master Electrical Inspector, recertification every three (3) years is mandatory. It is important that you begin accumulating the required points as soon as possible. You are required to track and maintain your recertification points and documentation. You will be notified when to submit your documentation.

The applicant must submit documented evidence of a total of 60 credit points from the following categories.



Evidence may include:

- Course certificates
- Letters of attendance from course sponsors
- College transcripts
- Letters from employers

All recertification activities must be clearly related to the electrical inspector field of practice

If college courses are declared for training hours, the same course cannot be taken twice within the three-year period and credit hours must be converted to actual contact hours.

Category	Allotment	Minimum Points	Maximum Points
Training	One point per contact hour	Twelve (12)	Sixty (60)
Instruction or Lecture	Two points per contact hour	Zero (0)	Forty-Eight (48)
Professional Practice	One point per review	Zero (0)	Thirty (30)
Publications	Five points per published article	Zero (0)	Ten (10)
Publication	Ten points per published book	Zero (0)	Twenty (20)
Electrical Association Membership	One point per membership per year	Zero (0)	Six (6)

ANNUAL PROGRAM FEE

Certificate holders are assessed an annual program fee of \$50 which includes the recertification process. Certificate holders are notified annually by mail when their annual program fee is due.

TRANSFERS FROM OTHER RELATED CERTIFICATION PROGRAMS

Consideration for Acceptance

Transfer applicants from other related electrical inspector certification programs are considered for acceptance into the IAEI/NFPA Certification Program for Residential Inspectors and Master Electrical Inspectors.

In addition to the program eligibility requirements shown on page 2, transfer applicants must provide proof of an active certification in a related program. Those in the process of being certified in a related program must complete that certification process not later than December 31, 2003.

Transfer participants from other related certification programs to the IAEI/NFPA Certification Program for Residential and Master Electrical Inspectors are required to complete the IAEI/NFPA Electrical Inspectors Certification Program Practicum Phase requirements and one of the following:

1. Complete a recognized IAEI/NFPA Training Program
OR
2. Complete Recertification Requirements

TRANSFER FEE

The transfer fee is \$250.00.

Note: An additional fee is required for the IAEI/NFPA Training Program.

Transfer participants successfully certified in the IAEI/NFPA Electrical Inspector Program are subject to all program requirements.

APPEALS

Candidates for the IAEI/NFPA Residential Electrical Inspector or the Master Electrical Inspector Certification programs who believe they were unjustly denied eligibility for examination, certification or for recertification, allege inappropriate administration procedures, severe environmental testing conditions, or for other reason challenge results of an examination have the right to appeal. All such appeals must be filed in the office set out below within the earlier of 30 days of the examination or notice of non-certification or recertification. The fee for appeal is \$100. The fee will be refunded to the candidate if the Appeals Committee resolves the appeal in favor of the Candidate.

Each appeal should include a written statement of no more than five typed pages setting out the basis of the appeal, including information as specific as the Candidate feels necessary why he or she is entitled to the relief requested. The Appeals Committee will consider each such written statement. The Appeals Committee is entitled to seek further information from the applicant or any other person, organization or office that it feels appropriate and review any materials that it feels appropriate to determine the appeal. The Appeals Committee will determine the appeal and respond to the applicant. Appeals will be resolved within 90 days of submission. The Appeals Committee reserves the right to waive or extend any time period set out in the procedure, or modify any process as it deems appropriate to properly determine any appeal. All steps of the Appeal process will take place in writing unless otherwise determined by the Appeals Committee.

All appeals along with the \$100 fee should be sent to:

Certification Department
NFPA
1 Batterymarch Park
Quincy, MA 02169

IAEI/NFPA Electrical Inspector Certification Program

Application and Examination Registration Form

Note: Retest complete form only through payment information.

Last Name _____ First Name _____ Middle _____ Date _____
 Mailing Address (Street or P.O. Box) _____
 City _____ State _____ ZIP Code _____
 () _____ () _____ () _____
 Daytime Phone Number _____ Evening Phone Number _____ Fax number _____
 E-mail Address _____
 Birthdate _____ month _____ day _____ year _____ Social Security # _____
 IAEI Membership # _____ NFPA Membership # _____
 Other: Organization _____ Membership # _____

Applications For (please check):

Master \$250.00 Transfer Master \$250.00 Retest-Master \$100
 Residential \$250.00 Transfer Residential \$250.00 Retest-Residential \$100
 Master and Residential \$500.00

Payment by: Check (payable to NFPA) Money order Purchase order # _____
Credit Card: Amex Discover MasterCard Visa

Name of individual on card _____ Credit card number _____ Expiration date _____
 Signature _____
 Total Fees Enclosed: \$ _____,00

Licenses and/or Registration Held

License Type	Date Issued	State	License Limitations (Limited, Unlimited, etc.)	License #
Architect				
Engineer				
Electrical Contractor				
Electrical Inspector				
Other				

Education

	Name & Location of School	Attended—from/to mo/yr – mo/yr	Years Completed	Diploma/GED or degree State major and year received
High School				
Community College				
College or University				
Graduate or Professional				

— continued —

Work Experience

Electrical Contractor Experience — List the sizes of buildings/installations (both in square feet and story height) in which you were in responsible charge of installation under your license or as an employee of another licensee. (Use additional sheets).

Inspector Experience — List the sizes of buildings/installations (both in square feet and story height) in which you were in responsible charge of electrical inspections. (Use additional sheets).

Other Experience — List the duties in electrical related fields or duties of that employment (Use additional sheets).

Experiences Record: Work History (Include related experiences. Use additional sheets if necessary).

Present Employer		Address
Date Employment Started	Job Title	Supervisor/Reference
Date Employment Ended	Phone Number	email

Duties/Experience: Work History (Use additional sheets if necessary).

- Electrical contractor experience
 - Inspector experience
 - Other _____
- _____
- _____

Previous Employer		Address
Date Employment Started	Job Title	Supervisor/Reference
Date Employment Ended	Phone Number	email

Duties/Experience: Work History (Use additional sheets if necessary).

- Electrical contractor experience
 - Inspector experience
 - Other _____
- _____
- _____

Use additional sheets if necessary.

IAEI/NFPA reserves the right to accept or reject applications. Once accepted, the applicant will be notified by mail. Please allow a turn-around time of thirty days from the date of receipt.

By signing and submitting this completed form, I certify that all statements are true, complete, and correct to the best of my knowledge and belief and are made in good faith. I authorize investigations of all statements made in this application and also release this information to the IAEI/NFPA Certification Program. I accept the conditions set forth concerning the administration of the test and the reporting of test scores. I am assuming full responsibility for exam selection and I understand that fees are not refundable or transferable.

Signature _____ Date _____

**Upon completion of this form, please return form and payment to the following address:
NFPA • Attn: Certification Department • One Batterymarch Park • Quincy, Massachusetts 02169**



REQUEST FOR SPECIAL EXAMINATION ACCOMMODATIONS

If you have a disability covered by the Americans with Disabilities Act, please complete this form and the Documentation of Disability-Related Needs on the reverse side so your accommodations for testing can be processed efficiently. The information you provide and any documentation regarding your disability and your need for accommodation in testing will be treated with strict confidentiality.

Candidate Information

Social Security # _____ - _____ - _____

Name (Last, First, Middle)

Street Address

City State Zip Code/Postal Code Country

Daytime Phone Number E-mail Address

Special Accommodations

I request special accommodations for the _____ examination.

Please provide (check all that apply):

- Accessible testing site
- Special seating
- Reader
- Extended testing time (time and a half)
- Distraction-free room
- Other special accommodations (Please specify.)

Comments: _____

Signed: _____ **Date:** _____

**Return this form with your examination application and fee to:
NFPA Certification Department, 1 Batterymarch Park, Quincy, MA 02169.**



DOCUMENTATION OF DISABILITY-RELATED NEEDS

Please have this section completed by an appropriate professional (education professional, physician, psychologist, psychiatrist) to ensure that AMP is able to provide the required examination accommodations.

Professional Documentation

I have known _____ since ____ / ____ / ____ in my capacity as a
Candidate's Name Date

Professional Title

The candidate discussed with me the nature of the examination to be administered. It is my opinion that, because of this candidate's disability described below, he/she should be accommodated by providing the special arrangements listed on the reverse side.

Comments: _____

Signed: _____ **Title:** _____

Printed Name: _____

Address: _____

Telephone Number: _____

Date: _____ **License # (if applicable):** _____

**Return this form with your examination application and fee to:
 NFPA Certification Department, 1 Batterymarch Park, Quincy, MA 02169.**



International Association of Electrical Inspectors

901 Waterfall Way, Suite 602
Richardson, TX 75080-7702
972-235-1455
FAX: 972-235-3855
E-mail: cei@iaei.org

www.iaei.org



NFPA Certification Department
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1 Batterymarch Park
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800-344-3555
E-mail: cei@nfpa.org

www.nfpa.org/certification