

Professional Licensing Boards Division
**Georgia Construction Industry
Licensing Board**

Division of Electrical Contractors

Licensure Examinations

***Candidate Information
Handbook***

October 2022

Examination Development and Testing Unit



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The Professional Licensing Boards Division does not discriminate among candidates based on age, gender, race, religion, or national origin. The Professional Licensing Boards Division also does not discriminate among mentally or physically challenged candidates.

The Examination Development and Testing Unit gratefully acknowledge the assistance of other state licensing programs in the development of this Candidate Information Handbook. Portions of this Handbook were based on Candidate Information Handbooks of other states.



Introduction

The Division of Utility Contractors of the Georgia Construction Industry Licensing Board was created by the Georgia legislature to protect the public by taking steps to ensure that Utility Managers are competent in their profession. To achieve this goal, minimum standards and requirements were established by the Board for entry into the profession. Passing an examination is one of the requirements for obtaining a Utility Manager License.

Please review this Handbook thoroughly. It provides a good overview of the exam process and content.

Examination Administration

Examinations are Computer Based Tests that are given at PSI Test Centers located throughout the Southeast. The examinations are administered by appointment only Monday through Saturday. Available dates are provided when you schedule your examination. Appointment times may vary by location, and candidates are scheduled on a first-come, first-served basis.

Online Resources

Visit PSI's website for more detailed information.

Video: PSI Test Center Experience -

<https://psi.wistia.com/medias/3321yp1ic8>

Exam Tutorial:

<http://candidate.psiexams.com/tutorial.jp>

Registration deadlines:

<http://schedule.psiexams.com>

FAQs:

<https://candidate.psiexams.com/faqs/faqs.jsp>

Questions about examination appointment scheduling should be directed to PSI Candidate Services at 855-898-0711.

Questions regarding professional licensing should be directed to the Board Office, 237 Coliseum Drive, Macon, GA 31217, 404-424-9966.

Veteran's Preference Points

Georgia law [General Provisions, O.C.G.A. § 43-1-9. (1)(2)(3)] provides that Veterans meeting certain conditions are eligible for five or ten points to be added to their examination scores.

You may be eligible for Veteran's Preference Points to be added to your examination scores if you have served on active duty in the Armed Forces, Reserves, or the National Guard during wartime or during any conflict when military personnel were committed by the President.

The law provides that you may also qualify for Veteran's Preference Points if you were discharged for injury or illness incurred in the line of duty and your disability is officially rated. Click this link for additional information: [Veterans Preference Points](#).

To apply for Veteran's Preference Points, submit a copy of your DD 214 form to Exam Development and Testing Unit, Professional Licensing Boards Division, 237 Coliseum Drive, Macon, GA 31217.

Accommodations for Candidates with Disabilities

PSI complies with the Americans with Disabilities Act and strives to ensure that disabled individuals have the opportunity to take the examination.

Disabled persons who require accommodations must complete the 'Request for Disability Guidelines form. This form can be downloaded from the Board's website - [REQUEST FORM](#) - or call 404-424-9966 to request the form.

If accommodations are requested, contact PSI at 855-898-0711, as they will assist you with scheduling your examination appointment.

Wheelchair access is available at all PSI Test Centers.



Scheduling an Examination Appointment

You must be approved by the Board to sit for an examination. If you have not received notice that you have been approved, you will be unable to schedule an examination appointment.

The Board will notify PSI of your approval to sit for the exam. In turn, PSI will send you a confirmation notice with information on how to register and schedule your examination.

PSI's instructions will direct you to visit <http://schedule.psiexams.com> or to call PSI at 855-898-0711 (toll free) to schedule your examination appointment. PSI's phones are answered from 7:00 a.m. to 9:00 p.m. (Central Time) Monday through Thursday, 7:00 a.m. to 7:00 p.m. on Friday, and 8:30 a.m. to 5:00 p.m. on Saturday.

If you contact PSI by 3:00 p.m. Central Time on	Depending on availability, your examination may be scheduled as early as...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday/Saturday
Thursday	Monday
Friday	Tuesday

Inclement Weather, Power Failure, Emergencies

In the event of inclement weather or emergencies on the day of your exam, PSI will determine if circumstances warrant the cancellation, and subsequent rescheduling, of an examination. If the Test Center personnel open the Test Center, the exam is usually not rescheduled.

Visit www.psionline.com/openings prior to the examination to see if any Test Centers have reported closing. Should a Test Center close, you will be notified regarding procedures to reschedule or re-register.

If a Test Center loses power during an examination, your examination will be restarted. Examination question responses entered up to the point of the power interruption will be saved, but for security reasons, the questions will be randomly resorted upon the restart.

Rescheduling or Canceling an Examination

Exam fees are non-refundable. However, you may reschedule an examination once at no charge online at <http://schedule.psiexams.com> or by calling PSI at 855-898-0711. You must reschedule **at least 2 business days prior to** a scheduled examination appointment. The following schedule applies:

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

The following situations will result in forfeiture of your appointment time and paid fees. You would need to re-register and pay the exam fee again to sit for the exam.:

- Arriving more than 15 minutes after your exam has begun.
- Not showing up for the exam appointment.
- Canceling your appointment after your registration has been submitted.

Failing to Report for an Examination

If you fail to report for an examination, you will forfeit the registration and all fees paid to take the examination. A new registration and fee are required to sit for the examination again.

Examination Content

Two Electrical Contractors licensure examinations are offered to correspond with the two classes of Electrical Contractors licenses – Class I (Restricted) and Class II (Unrestricted).

Both examinations consist of multiple-choice questions. Please refer to the information on the following pages for the number of questions on each examination and the content categories.



Exam Day

Dressing for the Exam

Dress comfortably. Because individuals have different temperature preferences, we recommend that you dress in layers so that you can be comfortable in various conditions.

Arrival, Check In

Report to the Test Center at least 20 minutes before your scheduled appointment time. Upon arrival, look for the signs directing you to PSI Test Center Check-in.

IF YOU ARRIVE MORE THAN 15 MINUTES AFTER YOUR SCHEDULED EXAM TIME, YOU WILL NOT BE ADMITTED.

Identification

You must present two forms of identification at Check-in. Temporary IDs are not accepted. You will also be required to sign a roster for verification of your identity.

- One form of ID must be a current government-issued ID which includes your name, signature, and photograph (i.e., driver's license; state identification card; passport; military identification card).
- The second form of ID must include your name and signature for signature verification (e.g., credit card with signature, social security card with signature, employment/student ID card with signature).
- If your name on your registration is different than it appears on your identification, you must bring proof of your name change (e.g., marriage license, divorce decree, or court order).

Personal Belongings

Personal items, valuables, or weapons should not be brought to the Test Center. Large coats and jackets must be left outside the testing room. You will be provided a soft locker in which to store the following items:

- wallet - keys
- watches - hats

You will not have access to these items until after the examination is completed.

Once you have placed your personal belongings into the soft locker, you will be asked to turn your pockets out to verify that they are empty.

If you bring personal items that will not fit in the soft locker, you will not be able to test. The site will not store or be responsible for your personal belongings.

If any personal items are observed or heard (cell phone, alarm) in the testing room, other than what is noted above, after the examination has started, the individual possessing these items will be dismissed and the examination and the fee will be forfeited.

General Information

- Pencils will be provided during check-in.
- One piece of scratch paper at a time is provided to use during the examination unless otherwise noted on the sign-in roster for a particular candidate. You must return the scratch paper to the supervisor after testing to receive your score report.
- Documents and notes are not to be removed from the Test Center.
- You are not permitted to ask questions about the content of the examination during the examination.
- Eating, drinking, or smoking is not permitted in the Test Center.
- You may take a break whenever you wish, but you will not be awarded additional time to make up for the time lost during breaks.



Security

PSI and the Georgia Construction Industry Licensing Board maintain examination administration and security standards that are designed to ensure all candidates are provided the same opportunity to demonstrate their abilities. The Test Center is continuously monitored by audio and video surveillance for security purposes.

The following security procedures apply during the examination:

- Examination content is proprietary. Notes, cameras, tape recorders, pagers, cell phones, tablets, or laptops are not allowed in the testing room. These and similar electronic devices are prohibited and will result in dismissal from the examination if found in your possession during the examination.
 - Silent, non-programmable calculators without alpha keys or printing capabilities are allowed in the testing room.
 - Guests, visitors, and family members are not allowed in the testing room or reception areas
 - You will be asked to store personal items (see Personal Belongings section), and you will be asked to turn your pockets out before entering the exam area to verify that they are empty.
-

Copyrighted Material

All examination questions are the copyrighted property of PSI Services and the Examination Development and Testing Unit (EDTU) of the Georgia Professional Licensing Boards Division. It is prohibited under federal copyright law to copy, reproduce, record, distribute, or display these examination questions by any means, in whole or in part. Doing so may subject you to civil and criminal penalties.

Misconduct

If you engage in any of the following conduct during the examination, you may be dismissed, your scores will not be reported, and examination fees will not be refunded. These are examples of misconduct:

- creating a disturbance, being abusive or otherwise uncooperative;
 - displaying and/or using electronic communications equipment as noted in the Security section on the previous page;
 - conversing with other examination candidates;
 - giving or receiving help or are suspected of doing so;
 - leaving the Test Center during the administration of the examination;
 - attempting to record the examination questions or taking notes;
 - attempting to take the examination for someone else;
 - are observed with prohibited personal belongings;
 - are observed with notes, books, or other aids without it being noted on the sign-in roster.
-

Beta (Pretest) Questions

Beta (pretest) questions are included in the total number of examination questions. These beta questions do not count towards your score but do provide useful information on the quality and relative difficulty of the questions. The beta questions also vet questions that may be used on future exams.

There are 15 beta questions on the Class I exam and 22 beta questions on the Class II exam.

Time Limits

The exam is administered in two parts. Eight (8) hours are allotted to complete both parts of the exam (Class I Restricted and Class II Unrestricted).

You will have four (4) hours to complete Part I, followed by a break. You will also have four (4) hours to complete Part 2.

This limit includes time for the Beta (pretest) questions.



**Content Categories for Class I (Restricted) and
Class II (Unrestricted) Electrical Contractors**

1. Regulations, Laws, and Administrative Functions (C1 - 30 questions / C2 - 30 questions)

A. Comply with Laws (C1 - 10 questions / C2 - 10 questions)

1. Workers' compensation
 2. Unemployment insurance
 3. Employer's tax guide (circular E)
 4. Georgia Construction Industry Licensing Board
 5. State sales and use tax
 6. Business license
-

B. Comply with Regulations (C1 - 9 questions / C2 - 9 questions)

1. Code of Federal Regulations, Title 29, Part 1926 (OSHA)
 2. National Electrical Code (NEC)
 3. National Fire Protection Association (NFPA)
 4. Underwriter's Laboratories (UL) or other National Testing Laboratory (NTL) certification
 5. Obtain necessary electrical permits and inspections
-

C. Comply with Administrative Requirements (C1 - 6 questions / C2 - 6 questions)

1. Bonding and liquidated damages
 2. Insurance: liability, property damage, auto, etc.
 3. Financing and cash flow
 4. Bookkeeping and accounting
 5. Complete an accident or incident report
 6. Job cost estimating and bidding procedures
 7. Contracts and purchase orders
-

D. Plan and Organize Work (C1 - 5 questions / C2 - 5 questions)

1. Interpret drawings and specifications for submittal process
 2. Inventory equipment, materials, and supplies
 3. Scheduling and project management
-

2. Technical Functions (C1 - 110 questions / C2 - 110 questions)

A. Maintain Basic Electrical Circuits (C1 - 21 questions / C2 - 14 questions)

1. Check and/or replace grounding systems and ground fault indicators
 2. Check overloaded and/or shorted circuits
 3. Connect batteries (in parallel and/or series)
 4. Connect simple circuits using schematic diagrams (parallel and series)
 5. Check wire terminations
 6. Make splices and repairs
 7. Check and/or replace meters and other wiring devices
-

B. Install and Maintain the following Electrical Controls and Devices (C1 - 22 questions / C2 - 15 questions)

1. Control relay system
2. Drum switches for motor control
3. Magnetic and reduced voltage starter
4. Operational amplifier
5. Overload relays in starting control circuit
6. Pressure switches, temperature switches, and instrument transmitters
7. Rheostat/potentiometer
8. Solid state 3-phase rectifier



2. Technical Functions (continued)

B. Install and Maintain the following Electrical Controls and Devices (continued)

9. Temperature operated pilot device
10. Time delay relay
11. Limit switch
12. Selector, push button, HOA switches
13. Surge protectors
14. Voltage regulator
15. Programmable controller
16. Panels, circuit breakers, and disconnects
17. Draw schematic diagrams from prewired circuits
18. Motion detectors (e.g., infrared, lighting controls, EMS)

C. Install and Maintain D-C and A-C Rotating Equipment (C1 - 9 questions / C2 - 16 questions)

1. Change direction of rotation of electrical motor
2. Change speed of single-phase motor
3. Connect single-phase A-C motor to run on different voltages
4. Connect 3-phase A-C motor to run on different voltages*
5. Connect 3-phase motor stator for delta operation*
6. Connect 3-phase motor stator for star operation*
7. Replace capacitor run/start motor
8. Install/Replace D-C compound motor*
9. Install/Replace D-C generator*
10. Install/Replace shunt motor*
11. Install/Replace repulsion-induction motor*
12. Install/Replace series motor*
13. Install/Replace shaded-pole motor*
14. Install/Replace split-phase motor*
15. Install/Replace synchronous motor*
16. Install/Replace 3-phase induction motor*
17. Install/Replace wound rotor motor*
18. Calculate motor loads and overload protection
19. Install fire pump system (NFPA 20)*
20. Interpret motor name plate data
21. Draw diagrams of electrical motor and control circuits
22. Size and install motor short circuit protection
23. Size and install branch circuit wiring for motors

D. Install, Size, and Maintain Transformers (C1 - 7 questions / C2 - 21 questions)

1. Check transformer oil for contaminants*
2. Clean power transformer*
3. Connect a dual voltage transformer for its highest input and output*
4. Connect a dual voltage transformer for the low voltage input and output*
5. Connect an amp meter to a high voltage line using a current transformer*
6. Connect a volt meter to a power line through the use of a potential transformer*
7. Connect an auto-transformer to give a variety of voltages
8. Connect power-supply distribution transformer to supply 115 and 230 volts
9. Connect power-supply distribution transformer to supply 3-phase power, 4-wire connection*
10. Connect power supply distribution transformer to supply 3-phase power, delta configuration*
11. Connect power supply distribution transformer to supply 3-phase power, Y configuration*
12. Connect the secondary of a 3-phase bank to give a 4-wire delta system*
13. Connect the secondary of a 3-phase bank to give a 4-wire star configuration*
14. Connect a single-phase transformer to give a higher output voltage
15. Connect a single-phase transformer to give a lower output voltage



2. Technical Functions (continued)

D. Install, Size, and Maintain Transformers (continued)

- *16. Connect three single-phase transformers to form a delta-delta configuration
- *17. Connect three single-phase transformers to form a delta-star configuration
- *18. Connect three single-phase transformers to form a star-delta 3-phase bank
- *19. Connect three single-phase transformers to form a star-star 3-phase bank
- *20. Connect two single-phase transformers in an open-delta configuration
- *21. Connect two single-phase transformers in parallel
- 22. Test transformer for output and performance under load
- 23. Recognize harmonic problems in electrical systems

E. Install and Maintain Interior Electrical Systems (C1 - 30 questions / C2 - 23 questions)

- | | |
|---|---|
| 1. Check emergency lighting system | 21. Install plug-in busway work |
| 2. Correct the power factor on a system | 22. Install power feeder wiring system to machinery |
| 3. Install bundled cables | 23. Install rigid conduit |
| 4. Install busway duct | 24. Install a service entrance head to a service drop |
| 5. Install circuit breakers in panel boards | 25. Install under-floor duct work |
| 6. Install circuits using non-metallic sheathed cable | 26. Install underground service entrance |
| 7. Install and connect system grounds | 27. Install wire in conduit and terminate |
| 8. Install distribution panel boards | 28. Install isolated grounding systems |
| 9. Install electrical metallic tubing | 29. Install service entrance grounding system |
| 10. Install electrical appliances (water heater, A/C, etc.) | 30. Install Intermediate Metal Conduit (IMC) |
| 11. Install fluorescent lighting fixture | 31. Install Electrical Non-metallic Tubing (ENT) |
| 12. Install incandescent lighting fixture | 32. Install Service Entrance cable (SE) |
| 13. Install lay-in busway work | 33. Install underground cable (UF) |
| 14. Install liquid-tight flexible metal conduit | 34. Calculate lighting levels |
| 15. Install multi-conductor cable | 35. Calculate load levels |
| 16. Install multi-conduit layout | 36. Select circuit protective devices |
| 17. Install multi-control lighting circuit | 37. Install temporary services |
| 18. Install non-liquid tight flexible metal conduit | 38. Install service entrance cable round (SER) |
| 19. Install pipe sleeves in concrete beam form | 39. Install building grounding system |
| 20. Install plastic conduit | 40. Size and install junction boxes and conduit |

F. Special Equipment, Conditions, and Locations (C1 - 21 questions / C2 - 21 questions)

- 1. Install health care facility electrical systems
- 2. Install electrical systems for swimming pools, hot tubs, hydromassage tubs, etc.
- 3. Install welding machines
- 4. Install gas station electrical systems
- 5. Install explosion proof devices in hazardous locations
- 6. Install data processing equipment
- 7. Install lighting dimmer system
- 8. Install communication systems (public address, etc.)
- 9. Install UPS and standby systems
- 10. Install elevator electrical service
- 11. Install electric signs
- 12. Install mobile home electrical systems
- 13. Install over 600 volt electrical systems
- 14. Install low voltage systems

	Number of Questions	
	Class I	Class II
Total Number of Test Questions	140	140
Additional Pre-test Questions Per Examination	15	22
Total Number of Test and Pre-test Questions	155	162

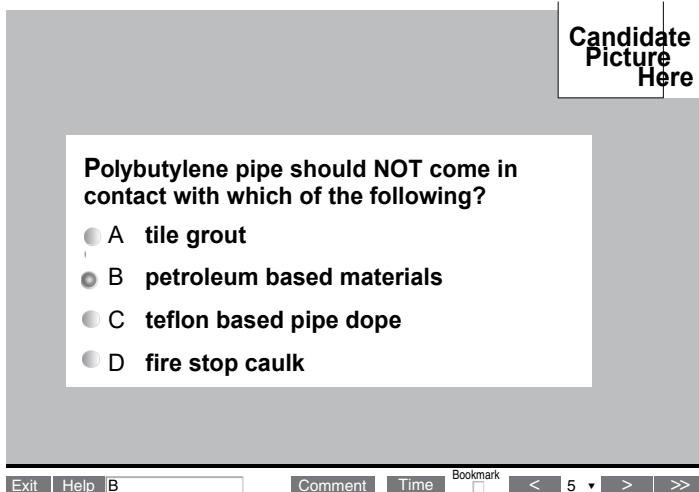


Taking the Examination

Your examination is a Computer Based Exam given at a PSI Test Center. Computer experience or typing skills are not necessary to take your examination.

After confirming your identity, you will be directed to an exam cubicle. Follow the on-screen instructions to enter your Social Security number and take a photo of yourself. Your photo will remain on-screen throughout your examination session and will be printed on your score report.

You will have an opportunity to take a computer based practice exam before starting the official examination. The time used for the practice examination is NOT counted as part of your official examination time or score. When you are comfortable with the testing process, exit the practice session and begin the timed examination.



The computer program tracks the time you spend on the examination. To view your remaining time, click on the "Time" box in the lower right-hand corner of the screen. A digital clock displays the time remaining for you to complete the examination. The Time feature may be turned off during the examination. The examination will terminate if you exceed the time allowed.

One question is presented at a time, and the question number appears in the lower right-hand corner of the screen. Answer choices are identified as A, B, C, or D. You must indicate your choice by either typing the letter in the response box in the lower left-hand of the computer screen or clicking in the option using the mouse. To change your answer, enter a different letter by typing in the response box or click the option using the mouse. You may change your answer as many times as you wish during the examination time limit.

To advance to the next question, click on the forward arrow (>) in the lower right portion of the screen. This action moves you through the examination question by question. To review a question that you've already answered, click the back arrow (<) or use the left arrow key to move back through the examination.

You may skip (not answer) a question and return to it later during the examination session. Questions may also be bookmarked for later review by clicking in the blank square to the right of the Time button. Click the double arrows (>>) to advance to the next unanswered or bookmarked question. To identify all unanswered and bookmarked questions, repeatedly click the double arrows (>>).

If some questions have not been answered and there is time remaining, return to the examination and answer those questions. Be sure to provide an answer for each examination question before ending the examination as there is no penalty for guessing.

When the examination is completed, the number of examination questions answered is reported.

Candidate Comments

During the examination, you may type comments on any question by clicking on the Comment button 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.



After the Examination

Statistical Review of Examination Performance

A statistical analysis of the examination and each question is conducted. Based on the statistics and the candidates' comments, questions that might be flawed will be reviewed by the Division.

Final Scaled Scores

The minimum passing final scaled score for each examination is 70.

The exam scores are scaled. This means that your raw score (the total number of questions answered correctly), taking into consideration question difficulty, is transformed into a scaled score. Because each candidate answers a unique set of questions on an adaptive exam, scaled scores are reported to provide a direct comparison of performance across candidates and exams. This allows candidates to be held to the same passing standard regardless of which questions they receive.

Score Reports

After completing the examination, you are asked to answer a short evaluation of your examination experience.

Then, you are to report to the Test Center supervisor to receive your score report. The score report will include your photograph, your examination results indicating "pass" or "did not pass", and your final scaled score.

Failing candidates will receive their examination score and subscores in the major examination content areas.

Scores are provided in person via print format or by U.S. mail. Scores are not reported over the telephone, by email, or by fax.

Licenses

PSI will provide the Board with an Official Score report. This could take up to 6 weeks to be received by the Board. Once received, Board staff will communicate with you regarding your results.

Re-examination Process

Candidates failing the examination must retake and pass the examination to be considered for licensure.

If you fail the examination twice, you are required to complete a Board-approved Review Course before being allowed to test a third time (Board Rule 121-2-.06).

If after submitting proof of completion of the Review Course, you test and fail the examination again, you are not required to take any other courses. You are allowed to test again.

Duplicate Score Report

Requests for duplicate score reports must be made in writing within one year of the examination date.

Complete the request form included with this Handbook, submit a check or money order for \$25 per copy made payable to PSI Services Inc., and mail your request to PSI.

Duplicate score reports will be processed and mailed within seven (7) business days from receipt of the request. Please note that your receipt of a duplicate score report may be affected by US Postal Service mailing times.



Sample Questions

The following questions are intended to help you become familiar with the types of questions you may encounter on the examination. These sample questions do not represent the full range of content or difficulty levels contained in the actual examinations.

1. A licensed electrical contractor can qualify
 - A. 2 or more companies.
 - B. only 1 company per county.
 - *C. only 1 company at any given time.
 - D. as many companies as the contractor registers.

2. When used as a main building disconnect, a switch must be rated for
 - A. 200 ampere fuses.
 - B. 600 volt service.
 - *C. service entrance equipment.
 - D. circuit breakers.

3. What is the current draw of a 230 volt quick recovery residential water heater that has two 3000 watt elements?
 - *A. 13 amperes
 - B. 18 amperes
 - C. 26 amperes
 - D. 30 amperes

***Correct Answer**



Duplicate Score Report Request

DIRECTIONS: Use this form to request a duplicate score report. Complete all requested information. This form must be received within one year of the examination date and include a check or money order, payable to PSI Services Inc., for \$25 per copy. Duplicate score reports will be mailed within seven (7) business days following receipt of the request.

Name: _____ Social Security #: _____

Address: _____

Daytime Phone: _____ Email: _____

Test Taken: Electrical

Examination Date: _____ Test Center: _____

I hereby authorize PSI to send me a duplicate score report.

Signature: _____ Date: _____

Please take note of the current delivery time frames posted by the US Postal Service. For mailed registrations, this may result in longer processing times.

Mail Request Form to: PSI
18000 W. 105th St.
Olathe, KS 66061