Study Guide
for
E-Crew Foreman Knowledge Test

Test Number: #2350

Human Resources
Performance Assessment Services
Southern California Edison
An Edison International Company

5252016

Introduction

The **2350 E-Crew Foreman Knowledge Test** was designed to assess technical knowledge necessary to perform the job. This guide contains strategies and study references to prepare for the interview.

Test Session

It is important that you follow the directions of the Test Administrator exactly. If you have any questions about the testing session, be sure to ask the Test Administrator before the testing begins. During testing, you may **NOT** leave the room, talk, smoke, eat, or drink.

This test has a three hour time limit.

All cellular/mobile phones, pagers or other electronic equipment will NOT be allowed in the interviewing area.

A non-programmable basic calculator will be provided for you to use during the interview. You will NOT be able to bring or use your own calculator during the interview.

All questions on this test are multiple choice questions. Some questions will have four possible answers with only one correct answer. You will also be presented with questions that instruct you to check all that apply. These questions have multiple correct answers and you must choose all the correct answers in order to receive credit for the question. For more information on this, please see the next section of this study guide on *Computer Based Testing*.

Study Guide Feedback

At the end of this Guide you have been provided with a Study Guide Feedback page. If a procedure or policy has changed, making any part of this Guide incorrect, your feedback would be appreciated so that corrections can be made.

You will receive a Test Comment form so that you can make comments about test questions. Write any comments you have and turn it in with your test when you are done.

Computer Based Testing

Taking an SCE knowledge test on the computer is simple. You do not need any computer experience or typing skills. You will only use the keyboard to enter your candidate ID and password. You'll answer all questions by pressing a single button on the mouse.

Log in Screen

You will be seated at a testing station. When you are seated, the computer will prompt you to enter the candidate ID and password you received in your invitation e-mail. You **MUST** have your candidate ID and password or you will be unable to take the test. Once you have confirmed your identity by entering this information, you will see a list of tests available to you.

Sample/Tutorial

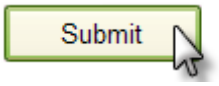
Before you start your actual test, a Sample/Tutorial Test is provided to help you become familiar with the computer and the mouse. From the list of exams that appear when you complete the log in, you will select Sample/Tutorial. You will have up to 10 minutes to take the Sample/Tutorial Test. The time you spend on this Sample Test does **NOT** count toward your examination time. Sample questions are included so that you may practice answering questions. In the Sample/Tutorial Test, you will get feedback on your answers. You will not receive feedback on your actual test.

Example

During the test, you may see several different types of items. Many of the questions will be multiple choice items. A few items instruct you to check all that apply, where you'll have to click on multiple correct answers. More information on each type is below.

Overall Test Information

- When you begin the test, you can see the total time allowed for completion displayed at the top of the screen. You can scroll up to see that information at any time during the test.
- You can change your answers at any time during the test until the time runs out, or you click the "Submit" button. Once you click Submit, you cannot change your answers.

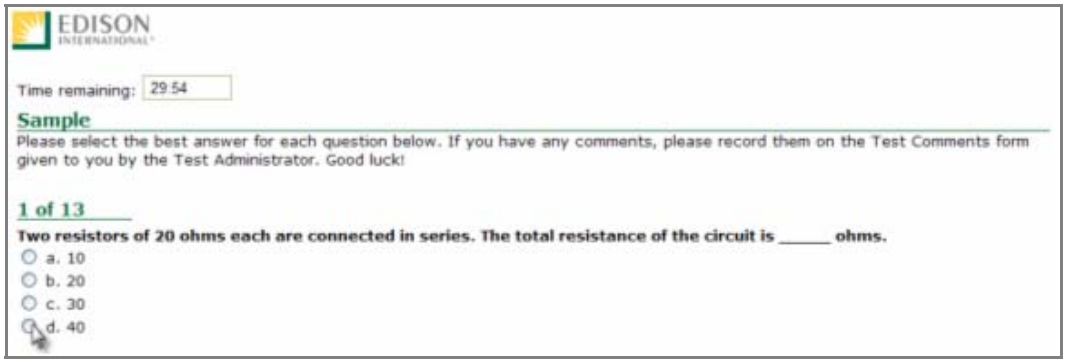


Multiple Choice Questions

To answer each multiple choice question, you should move the mouse pointer over the circle (radio button) next to the answer of your choice, and click the left mouse button.

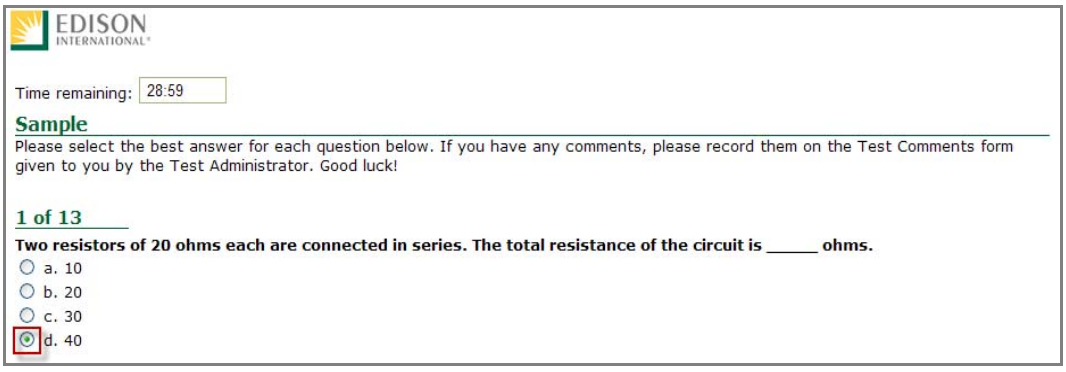
A sample is shown below:

1. In order to answer each question, first read the question and determine the response that best answers the question. Put the mouse pointer directly over the circle corresponding to that response.



2. While the pointer is over the circle corresponding to the best answer, click the left mouse button.

3. The answer you selected should now have a green dot in the circle. If you need to select an alternate answer, simply move the pointer over that circle, and click again.



Check all that apply questions

To answer check all that apply questions you should move the mouse pointer over the check boxes next each answer of your choice, and click the left mouse button.

Remember check all that apply questions have multiple correct answers.

Which of the following colors are found on the American flag? (**check all that apply**)

- ☐ Orange
- ☐ Yellow
- ☐ Green
- ☑ Blue
- ☐ Purple
- ☑ White
- ☑ Red

The answers you selected should have a black check mark inside the check box.

Test Taking Strategies

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Technique	Remarks
Be confident	- If you feel confident about passing the test, you may lose some of your anxiety. - Think of the test as a way of demonstrating how much you know, the skills you can apply, the problems you can solve, and your good judgment capabilities.
Be punctual	- Arrive early enough to feel relaxed and comfortable before the test begins.
Concentrate	- Try to block out all distractions and concentrate only on the test. You will not only finish faster but you will reduce your chances of making careless mistakes. - If possible, select a seat away from others who might be distracting. - If lighting in the room is poor, sit under a light fixture. - If the test room becomes noisy or there are other distractions or irregularities, mention them to the Test Administrator immediately.
*Budget your time*s	- Pace yourself carefully to ensure that you will have enough time to complete all items and review your answers.
Read critically	- Read all directions and questions carefully. - Even though the first or second answer choice looks good, be sure to read all the choices before selecting your answer.
Make educated guesses	- Make an educated guess if you do not know the answer or if you are unsure of it.
Changing answers	- If you need to change an answer, be sure to erase your previous answer completely. On the computer, be sure that the new answer is selected instead of the old one.

Return to difficult questions	-	If particular questions seem difficult to understand, make a note of them, continue with the test and return to them later.
Double-check math calculations	-	Use scratch paper to double check your mathematical calculations.
Review	-	If time permits, review your answers.
	-	Do the questions you skipped previously.
	-	Make sure each answer bubble is completely filled in. Erase any stray marks on your answer sheet. When testing on the computer, make sure each multiple choice question has a green dot next to the correct answer.

Remember the techniques described in this section are only suggestions. You should follow the test taking methods that work best for you.

Job Knowledge Categories

Below are the major job knowledge areas (topics) covered on the 2350 E-Crew Foreman Knowledge Test. Listed next to each knowledge category is the number of items on the exam that will measure that topic. You can use this information to guide your studying. Some exams also contain additional pretest items. Pretest items will appear just like all of the other items on your exam, but they will not affect your score. They are an essential part of ensuring the 2350 E-Crew Foreman Knowledge Test remains relevant to successful performance of the job.

There are a total of 133 items on the 2350 E-Crew Foreman Knowledge Test and the passing score is 75%. This score was determined during the test validation process.

A. Fundamentals (14 items)

Knowledge of the basic electricity, including electrical calculations, AC/D\C theory, single phase/three phase power, and phasing. Knowledge of the basic concepts of capacitance, its relationship to voltage, associated hazards, inductive reactance and power factor. Knowledge of SCE system configurations (primary and secondary) such as loops, radial lines and placement of branch line fuses. Knowledge of Distribution System Operations, including the roles and functions of the Distribution Switching Centers; responsibilities and support provided by the Distribution Operations Center (DOC). Knowledge of power system equipment and material, including typical substation equipment related to clearances and no test orders, A & B materials, transformers, transformer banks/connections, and SCE terminology for equipment. Knowledge of SCE map and diagram symbols related to work order, circuit maps, circuit strip maps and FIM maps.

B. Safety (48 items)

Knowledge of Personal Protective Equipment. Knowledge of safety requirements when entering and working in vaults and other underground structures. Knowledge of APM rules. Knowledge of rubber gloves inspection and testing requirements. Knowledge of insulate and isolate procedures per the Rubber Glove Manual. Knowledge of identification and elimination of “second point of contact.” Knowledge of proper inspection and maintenance of climbing tool. Knowledge of proper testing and inspection of load-break tools (e.g. break-safe, loadbuster tools). Knowledge of testing and maintenance requirements for Faultguard tools. Knowledge of how to identify and install protective equipment (e.g. line covers, blankets, Tupperware, line hose, hoods, etc.). Knowledge of personal and equipment grounding including grounding for personal protection, the purpose of and methods for establishing equal potential zone, grounding priority, faulty duty and the reasons for three different sizes of grounds, ground assembly rotation program, the proper size of grounding jumpers, grounding requirements and methods for transformers, when/why to install temporary grounding devices, sizes and lengths of ground conductor for vault grounds, and method of attaching primary and secondary grounds to the pole. Knowledge of vehicle safety, including the circle of safety, vehicle safety equipment, and requirements for safely attaching trailers and dollies to trucks. Knowledge of environmental procedures including coordinating with Environmental Health and Safety regarding for environmental issues and methods for containing or removing hazardous materials.

C. Safety Application (7 items)

Ability to apply knowledge of the proper safety policies and procedures to the following: energizing a newly placed 600 amp mainline cable; adherence to quality control; adequate cover; working on three phase panels; parking a vehicle; single-phase switching on a capacitor bank.

D. Overhead Apparatus and Materials (20 items)

Knowledge of conductors including the applications of different attachments on poles; methods for setting, framing and bonding poles. Knowledge of pole support structures. Knowledge of OH Apparatus including switching equipment; voltage regulators; transformers; types and sizes of fixed and switched capacitor banks; pole switches and typical applications of each (blade/knife style disconnect, AR/RAR, RCS, etc.); the detection and impact of capacitor bank current on system performance; fuse-holders; fuses (link fuses, current limiting, fault tamer); tap changes on transformers; OH transformer wiring and polarity; installation/wiring techniques for pole mounted transformers; and the methods and procedures for bypassing a voltage regulator. Knowledge of secondary service/customer equipment including secondary conductors and their applications (triplex, open wire, duplex and quad). Knowledge of the types of streetlight systems and their components.

E. Underground Apparatus and Materials (13 items)

Knowledge of cables including: cable types; splicing tools and techniques; and underground phasing techniques. Knowledge of UG switches and fuses including: underground switches; gas switches; and UAD equipment. Knowledge of underground transformers including: transformer types (BURD, padmount, subway, etc.); UG transformer voltage and current ratings; UG transformer switching and fusing options; wiring and connection configurations; and methods of tap changing on padmount transformers. Knowledge of risers including riser materials, components and construction; methods of installing different types of risers. Knowledge of UG connectors and control equipment, including methods for installing underground primary connectors and terminations. Knowledge of UG vaults and other structures, including methods of testing water in vault.

F. Work Standards and Procedures (31 items)

Knowledge of SCE's standards, regulations and work procedures, including GO 95/128/165; OSHA and Cal OSHA; Distribution OH Construction Manual; Distribution UG Construction Manual; DOM; System Operating Bulletins; Electrical Service Requirements; OH/UG Grounding Manuals; Rigging Manual; and Environmental Manual. Knowledge of climbing requirements per GO 95. Knowledge of the proper operation of work vehicles. Knowledge of the requirements for safe truck set up. Knowledge of emergency controls on man lifts. Knowledge of high voltage testing and equipment (phasing sets, multimeter, clamp-on meter). Knowledge of and purpose of the following tests: megger; TTR; and oxygen/gas. Knowledge of proper heat gun operation. Knowledge of dead-end materials. Knowledge of methods and techniques for connecting taps and stringing conductor. Knowledge of conditions involving ferroresonance and resolutions. Knowledge of ground relays. Knowledge of switching (e.g tools and equipment, load break, non load-break, and methods for writing switching procedures). Knowledge of no test order and conditions of use. Knowledge of clearances. Knowledge of tags. Knowledge of requirements for qualified employees. Knowledge of the four "R's" of paralleling a 4 kV circuit. Knowledge of voltage problems and resolution. Knowledge of sectionalizing to locate a fault. Knowledge of rubber glove techniques. Knowledge of hot sticking techniques. Knowledge of rigging including boom/bucket truck operation; different styles of rigging; and rigging safety factors.

Study References

Below are a list of study references to help you prepare for the 2350 E-Crew Foreman Knowledge Test.

- ✓ Accident Prevention Manual (APM)
- ✓ Confined Space Manual
- ✓ Distribution Operations and Maintenance Manual (DOM)
- ✓ Distribution Overhead Construction Standards (DOH)
- ✓ Distribution Underground Construction Standards (DUG)
- ✓ Electrical Service Requirements (ESR)
- ✓ Environmental Policies & Procedures Manual (EN)
- ✓ General Order No. 95 (GO 95)
- ✓ General Order No. 128 (GO 128)
- ✓ General Order No. 165 (GO 165)
- ✓ Rigging Standards Manual (RSM)
- ✓ Rubber Glove Manual (RGM)
- ✓ System Operating Bulletins (SOB)
- ✓ Overhead Grounding Manual (OGM)
- ✓ Underground Grounding Manual (UGM)
- ✓ Underground Standards Manual (USM)

Study Guide Feedback

Please use this page to notify us of any changes in policies, procedures, or materials affecting this guide. Once completed, return to:

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