

# **STUDY GUIDE**

# **METER TECHNICIAN 6 TEST**

**TEST #2686 & 4686**

## INTRODUCTION

There are two tests that you will need to pass in order to qualify for the Meter Technician 6 position. The first test, **2686 Meter Technician 6 Test** is a job knowledge test designed to cover the major knowledge areas to perform the job. The second test, **4686 Meter Technician 6 Performance Test** is a performance test that simulates tasks you perform on the job.

## 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. Since some tests take several hours, you should consider these factors before the test begins.

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

All questions on this test are multiple-choice or hot spot questions. Multiple choice questions have four possible answers. Hot spot questions have a picture, and you must click the correct spot on the picture to answer the question. All knowledge tests will be taken on the computer. For more information on this, please see the next section of this study guide on *Computer Based Testing*.

**The test has a three hour time limit. A scientific calculator will be provided for you to use during the test. The calculator provided during the test session will be one of these models:**

Casio fx-250HC, Texas Instruments TI-30XA, Texas Instruments TI-36X

**You will NOT be able to bring or use your own calculator during testing.**

### **Performance Test**

You will be given a test booklet in which you will mark directly onto with the pencil provided.

**The performance test has a one hour time limit.**

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.

## INFORMATION GUIDE FEEDBACK

At the end of this Guide you have been provided with an Information 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.

## TEST TAKING STRATEGIES

### INTRODUCTION

The **2686 Meter Technician 6 Knowledge Test** contains multiple-choice questions and may also contain hot spot questions. The **2686 Meter Technician 6 Performance Test** contains a performance test that simulates tasks you perform on the job. The purpose of this section is to help you to identify some special features of a multiple-choice test and to suggest techniques for you to use when taking one.

Your emotional and physical state during the test may determine whether you are prepared to do your best. The following list provides common sense techniques you can use before the test begins.

### CONFIDENCE

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.

### PUNCTUALITY

Arrive early enough to feel relaxed and comfortable before the test begins.

### CONCENTRATION

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 TIMES

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 when testing on a 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. When testing on a computer, make sure each multiple choice question has a 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 AND STUDY REFERENCES**

Below are the major job knowledge areas (topics) covered on the **2686 Meter Technician 6 Test** and the associated study references. 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 **2686 Meter Technician 6 Test** remains relevant to successful performance of the job.

There are a total of 75 items on the **2686 Meter Technician 6 Test** and the passing score is 73%. This score was determined during the test validation process.

### **ADVANCED METERING THEORY & CALCULATIONS (27 ITEMS)**

Knowledge of Single-phase, Poly-phase, and Primary metering theory including: metering calculations and formulas (i.e., performing meter tests; standard read calculations, consumption, load, etc...); metering errors including how they are calculated; phase angles and power factor; billing constant; back-up tests.

#### **References for Metering Theory & Calculations:**

EI Meter and Service Committee, Handbook for Electricity Metering. 10th Ed. Washington, D.C.: Edison Electric Institute, 2002.

Mileaf, Harry, ed. Electricity One-Seven. 2nd ed. New Jersey: Prentice Hall, 1996.

EMS Meter Shop & Field Training: Single-phase and Poly-phase course materials and references

Introduction to Primary Training: Course materials and references

On the job training.

### **INSTRUMENT TRANSFORMERS (19 ITEMS)**

Knowledge of voltage and current transformers including theory, operating procedures, and relevant standards/requirements.

### **References for Instrument Transformers:**

EI Meter and Service Committee, Handbook for Electricity Metering. 10th Ed. Washington, D.C.: Edison Electric Institute, 2002.

Mileaf, Harry, ed. Electricity One-Seven. 2nd ed. New Jersey: Prentice Hall, 1996.

EMS Meter Shop & Field Training: Single-phase and Poly-phase course materials and references

Introduction to Primary Training: Course materials and references

On the job training.

### **METER TESTING AND CONNECTION PROCEDURES (11 ITEMS)**

Knowledge of how to test and connect meters including: troubleshoot and report jobs including: Field Automated Test System (FATS) reporting; voltage limitations and standard procedures for testing the accuracy and functionality of meters and metering equipment; service wiring procedures for installing new or modified meters; metering problems that lead to irregularities; metering adjustments; how to report metering problems; and complete overall and modified overall modified test connections.

### **References for Meter Service Troubleshooting and Reporting:**

Field Automated Test System (FATS) training manual

Alexander, Richard. Pocket Guide to Watthour Meters. 2nd Ed. California: Alexander Publications, 1996.

EI Meter and Service Committee, Handbook for Electricity Metering. 10th Ed. Washington, D.C.: Edison Electric Institute, 2002.

Hart, George. Ugly's Electrical References. Burleson Distributing Corporation, 2005.

Mileaf, Harry, ed. Electricity One-Seven. 2nd ed. New Jersey: Prentice Hall, 1996.

EMS Meter Shop & Field Training: Single-phase and Poly-phase course materials and references

Introduction to Primary Training: Course materials and references

On the job training.

## **SAFETY (18 ITEMS)**

Knowledge of safety procedures, standards, and policies associated with the duties of a Meter Technician 6 including: Metering Service Organization (MSO) Standards of Performance and SCE's Accident Prevention Manual (APM) as it relates to all work being performed; how to handle electrical equipment and power tools (i.e., grounding techniques, de-energizing equipment, voltage requirements, etc...); and proper tailboarding procedures.

### **References for Safety and Field Operations (20 items):**

Related sections in The SCE Accident Prevention Manual\*:

Policy Section

General Rules

First Aid Rules

Definitions

Substation Rules

MSO Standards of Performance Manual including the EMS Addendum

Introduction to Primary Training: Course materials and references

Electrical Metering Services: Field Meter Test Procedures Manual

On the job training.

\* Can be found on the SCE portal

## **STUDY REFERENCES FOR THE METER TECHNICIAN 6 PERFORMANCE TEST**

For the **4686 Meter Technician 6 Performance Test**, you will be completing tasks that are representative of the work performed as a Meter Technician. Specifically, for the work sample exercise, you will be completing a paper/pencil exercise that measures your ability to successfully perform wire hook-up for various types of meter tests.

In preparation for the Performance Test, you can use the reference list below as a guide to enhance your knowledge of meter test hook-ups.

### **Study Resources for Meter Test Hook-ups:**

EI Meter and Service Committee, Handbook for Electricity Metering. 10th Ed. Washington, D.C.: Edison Electric Institute, 1981.

EMS Meter Shop & Field Training: Single-phase and Poly-phase course materials and references

Introduction to Primary Training: Course materials and references

On the job training.





## **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:

Southern California Edison Human Resources - Performance Assessment Services G.O. 4, Ground Floor 8631 Rush St. Rosemead, CA 91770

### **Test Name: 2686 and 4686 Meter Technician 6 Test**

If you have encountered any discrepancies in the test, please provide an explanation and the page number below.

COMMENTS