STUDY GUIDE TRANSFORMER SPECIALIST 1

TEST #2667

INTRODUCTION

The **2667 Transformer Specialist 1** Test is a job knowledge test designed to cover the major knowledge areas necessary to perform the job. This Guide contains strategies to use for taking tests and a study outline, which includes knowledge categories, major job activities, and study references.

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 or other electronic equipment will NOT be allowed in the testing area.

All questions on this test are multiple-choice or hot spot questions.. All knowledge tests will be taken on the computer.

The test has a three hour time limit. A scientific calculator will be provided for you to use during the test.

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

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.

STUDY 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 **2667 Transformer Specialist 1** contains multiple-choice questions and may also contain hot spot questions. 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 **2667 Transformer Specialist 1 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 **2667 Transformer Specialist 1** remains relevant to successful performance of the job.

There are a total of 81 items on the 2667 Transformer Specialist 1 Test and the passing score is 69%. This score was determined during the test validation process.

SAFETY AND ENVIRONMENTAL REQUIREMENTS (17 ITEMS)

Knowledge of SCE/SSID safety procedures and requirements (Accident Prevention Manual, shop procedures, Departmental Safety Policies, fire hazards and fire prevention, etc). Knowledge of the types and application of personal protective equipment. Knowledge of safe substation work practices. Knowledge of proper use and disposal procedures for chemical handling. Knowledge of procedures for working with heavy or hydraulic equipment.

References for Safety and Environmental Requirements:

Accident Prevention Manual (Available from Corporate Safety)

Fire Information, Prevention, and Education Manual (Available from Corporate Safety)

ELECTRICAL THEORY (12 ITEMS)

Knowledge of electrical terms and definitions such as inductance, capacitance, resistance, and conductivity. Understanding of Ohm's law and ability to apply it to work practices. Understanding and proper use of measuring and test equipment (such as megger, ductor, volt-ohm meter, etc).

References for Electrical Theory:

Electricity One – Seven, 3rd Edition, Harry Mileaf (1988).

TRANSFORMER THEORY (18 ITEMS)

Understanding of the electrical properties of a transformer and overall transformer functions. Knowledge and familiarity with transformer components and their functions. Understanding of the importance of transformer insulation systems and materials.

References for Transformer Theory:

Electricity One – Seven, 3rd Edition, Harry Mileaf (1988).

PROCEDURES/WORK PRACTICES (13 ITEMS)

Understanding of procedures for repair, rewind, and new installation of transformers. Knowledge and proper use of hand tools for repairing, rewinding, and installing transformers including box end wrenches, torque wrenches, screwdrivers, etc. Knowledge of specialty tools used in repairing, rewinding, and installing transformers, including band saw, table saw, shears, crimper, hydraulic press, winding machine, gasket cutters, gas torch, etc. Ability to take electrical and linear measurements using micrometer, caliper, ruler, measuring and test equipment (MTE), etc. Understanding of the procedures and requirements for transformer draining, filling, and oil processing. Knowledge and use of equipment for transformer draining, filling, and oil processing, including vacuum chamber, dry-out oven, dew point meters, etc.

RIGGING (11 ITEMS)

Knowledge of rigging and material handling procedures and equipment, as specified in the Accident Prevention Manual and Rigging Manual. Knowledge of proper inspection techniques and safety requirements for equipment such as slings, cranes, forklifts, man-lifts, etc. Knowledge of the hand signals used for communicating with crane/boom operators.

References for Rigging:

Rigging Manual: Available on TDBU Training Website.

PRINT READING (10 ITEMS)

Ability to read, recognize, and understand blueprints and diagrams.

References for Print Reading:

Substation Operator's Manual: Diagrams, Signs, and Symbols. Available from TDBU Substation Training.

SAMPLE QUESTIONS

The following sample questions should give you some idea of the form the test will take.

1. Which of the following metals has the least electrical resistance?

a. Copper

b. Iron

c. Silver

d. Aluminum

2. **How much current does a 60 watt lamp draw in a 120 VAC circuit?**
    a. 0.12 amps
    b. 0.50 amps
    c. 1.0 amps
    d. 2.0 amps

Sample Question Answers

1. C
2. D

STUDY GUIDE FEEDBACK

Please email Southern California Edison's Corporate Testing to notify us of any changes in policies, procedures, or materials affecting this guide.

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