



Study Guide for Test Technician A (Hydro)

Test Number: 2737

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

REV051719

Introduction

Test 2737 Test Technician A (Hydro) 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. 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 computer based testing, follow the link: www.edison.com/studyguides and click on Computer Based Testing Information.

The test is divided into 2 parts. Both Parts I and II have 3-hour (180 min.) time limits. You have been allowed enough time to make any necessary calculations. **The total allowed test time is six hours.** A scientific non-programmable calculator will be provided for you to use during the test. The calculator provided during the test session will be the following model:

- Texas Instruments TI-36X

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 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.

Test Taking Strategies

Introduction

Test 2737 Test Technician A (Hydro) 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.

Technique	Remarks
<i>Be confident</i>	<ul style="list-style-type: none"> - 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.
<i>Be punctual</i>	<ul style="list-style-type: none"> - Arrive early enough to feel relaxed and comfortable before the test begins.
<i>Concentrate</i>	<ul style="list-style-type: none"> - 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.
<i>Budget your times</i>	<ul style="list-style-type: none"> - Pace yourself carefully to ensure that you will have enough time to complete all items and review your answers.
<i>Read critically</i>	<ul style="list-style-type: none"> - 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.
<i>Make educated guesses</i>	<ul style="list-style-type: none"> - 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 and Study References

Below are the major job knowledge areas (topics) covered on **Test 2737 Test Technician A (Hydro)** 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 **Test 2737 Test Technician A (Hydro)** remains relevant to successful performance of the job.

There are a total of 117 items on **Test 2737 Test Technician A (Hydro)** and the passing score is 70%. This score was determined during the test validation process.

A. Electrical Theory (39 items)

Knowledge and application of AC/DC theory and Ohm's Law. Thorough knowledge of wiring, circuit diagrams, electrical symbols, and electrical terminology.

References

- ✓ Electricity by Richard J. Fowler, McGraw Hill (2007)

B. Electronic Theory (5 items)

Includes knowledge and application of electronic theory, circuitry, and electronic symbols. Knowledge of solid state theory. Knowledge of diodes, amplifiers, oscillators, rectifiers, transistors, and resonance theory.

References

- ✓ Grob's Basic Electronics by Mitchel E. Schultz, McGraw Hill (2010)
- ✓ Understand Electronics by Malcolm Plant, McGraw Hill (2010)
- ✓ Modern Digital Electronics, by R.P. Jain, McGraw Hill, (2006)

C. Mathematics (24 items)

Knowledge of basic math including simple arithmetic. Also includes working knowledge of algebra, geometry, and basic trigonometry. Knowledge of binary systems and binary conversions in addition to vectoring, working with percentages, and the proper application of mathematical formulas.

References

- ✓ Basic math book such as:
- ✓ Mathematics Made Simple by Thomas Cusick, Broadway, 2003

D. Equipment and System Knowledge (32 items)

Refers to knowledge of hydro equipment and instruments including relays, meters, transformers, generators, circuits, flow metering devices, regulators, and other equipment tested, maintained, and repaired by the Test Technician A. Knowledge of hydro systems such as power plant operations, supervisory control systems, automated systems, etc., which includes the testing, maintenance, and repair of such systems.

References

- ✓ Protective Relaying, Principles and Applications by J. Lewis Blackburn
- ✓ Protective Relaying: Theory and Applications by Walter A. Elmore

E. Test Procedures and Instruments (17 items)

Knowledge of test procedures, instruments and equipment including voltmeters, ohmmeters, meggers, soldering tools, transformer turns ratio meters, oscilloscopes, and other electrical and electronic equipment.

References

- ✓ Handbook for Electricity Metering published by Edison Electric Institute

Sample Questions

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

1. Which of the following equipment is appropriate for testing a distance relay?
 - a. phase shifter, phase angle meter, ammeter and voltmeter.
 - b. oscilloscope, ammeter, voltmeter, and wheatstone bridge.
 - c. phase shifter, phase angle meter, oscilloscope, and wheatstone bridge
 - d. phase shifter, ammeter, voltmeter, and wheatstone bridge.

2. One advantage of using a variac and resistor arrangement over a two-barrel carbon pile is:
 - a. greater current capacity .
 - b. less temperature.
 - c. fewer losses.
 - d. stability.

3. Negative feedback is characterized by:
 - a. in phase feedback.
 - b. increased distortion
 - c. reduced gain
 - d. oscillation.

4. In a DC circuit given voltage and current, what is the correct formula for finding resistance?
 - a. I divided by E
 - b. P divided by E
 - c. I² times E
 - d. E divided by I

5. In order for the potential differences and the current to be in phase, the circuit must have only:
 - a. capacitance.
 - b. resistance
 - c. reactance.
 - d. inductance.

Sample Question Answers

1. A
2. D
3. C
4. D
5. B

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 – Talent and Assessment Programs
G.O. 5, 1st Floor
1515 Walnut Grove Ave.
Rosemead, CA 91770

Test Name: 2737 Test Technician A (Hydro) Test

Page	Comments
_____	_____

_____	_____

_____	_____

_____	_____

_____	_____

