Study Guide
for
Service Shop Mechanic

Test No. 2611

Staffing & Assessment Services
Southern California Edison Company

REV 022803

Introduction

The Service Shop Mechanic Test is a job knowledge test designed to cover the major knowledges necessary to perform the job. This *Guide* contains strategies to use for taking tests and a study outline, which includes knowledge categories and study references.

Test Scheduling

Employees will be scheduled for testing by their Supervisor through Human Resources. Applicants will be scheduled through the recruiter. If you do not pass the test on your first attempt, please refer to the testing guidelines on MyEdison.Net (employees only) or call 626-302-9830.

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 questions on this test are multiple-choice with four possible answers. Your answers to the questions are indicated by filling in a circle on an answer sheet with a special mark-sense pencil. For your answers to be read accurately by the scanner, you must fill in the circles completely and erase completely any answer you wish to change.

The test has a three hour time limit, and non-programmable scientific calculators are allowed when taking this test.

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.

Introduction

The Service Shop Mechanic Test contains multiple-choice 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
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	• 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.
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.
Doublecheck mathematical 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.

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

Study Guide Outline
Job Knowledge Categories

Below are the major job knowledges categories that are covered on the test.

A. Shop Math. Basic math required for shop operations$_1$ including addition, subtraction, multiplication, division, decimals, ratios. Basic geometry (area and perimeter). Graph and table reading.

B. Printreading and Precision Measurement Readings. Knowledge of mechanical blueprints, including assembly drawings, detail drawings. Knowledge of schematic symbols. How to read venier calipers, outside micrometers, inside, depth micrometers, and dial indicators.

C. Shop Metallurgy and Welding. Principles of metallurgy, including basic definitions, properties of metals, identification of metals, and heat treatment. General welding techniques, welding and joining symbols and safety practices. Oxyacetylene and electric arc cutting, including safety, equipment setup and use, and cutting procedures. Braze welding, including safety, filler metals and fluxes, joint design, and procedures. Shielded metal-arc welding principles, including safety, equipment setup, electrode identification. Principles of TIG and MIG, including safety, equipment, electrodes, shield gas, plate welding.

D. Machine Shop Practices. Knowledge of principles of machining, layout work, and shop safety. Machine shop turning operations (basic lathe operations, drilling and boring, reaming, and threading). Machine shop shaping operations, including milling, turning, and grinding. Knowledge of hand tools including types, characteristics, and safe use of taps, dies, and hammers.

E. Rigging and Material Handling. Knowledge of basic rigging principles, equipment, techniques, safety. How to plan a lift, select equipment, hoist and move a load. Knowledge of safe forklift and mobile crane operations.

Study References

Below is a listing of the study references which can be used in preparation for successful completion of this test. The materials listed in this Guide are available from general company references (e.g. ESM, Accident and Fire Prevention Manual, etc.), public/university libraries, general bookstores, university or technical bookstores. Department reference materials are available from Steam Division Training.

Knowledge Category A - Shop Math
Material covered under this category is typically found in High School Mathematics books.
Shop Mathematics, TPC Training Systems
Math The Easy Way, By Prindle and Prindle
Basic Mathematics, By NTC Learning Works
Mathematics Made Simple, By Sperling and Stuart

Machinery's Handbook

Knowledge Category B - Printreading and Precision Measurement Readings
Machinery's Handbook
Shop Theory, By Anderson / Tatro
Machine Shop Practice, Volume 1 By K.H. Moltrecht

Knowledge Category C - Shop Metallurgy and Welding
Material in this category is typically found in Welding Handbooks or General Welding books.

Modern Welding, By Althouse/ Turnquist / Bowditch
IPT's Metal Trades Handbook, By Garby and Ashton
Welding Principles and Application By Jeffus

Knowledge Category D - Machine Shop Practices

Machinery's Handbook
Shop Theory, By Anderson / Tatro
Machine Shop Practice, Volume 1 By K.H. Moltrecht

Knowledge Category E - Rigging and Material Handling

Rigging Standards Manual
IPT''s Cranes and Rigging Handbook
IPT's Metal Trades Handbook by Garby and Ashton
Accident Prevention Manual

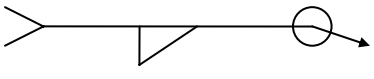
Sample Questions

The following are samples of the type of questions, arranged by knowledge area, that you will encounter in this test. They include a reference for each question to show you the appropriate section to study. An answer page follows the questions.

1. Which of the following is not called out in the welding symbol below:

GTAW

¼



A. Fillet weld.
B. Weld all around
C. Tungsten inert gas weld
D. Bevel joint

2. The best tool to measure the diameter of a pump shaft is:

A. Dial indicator
B. ID micrometer
C. OD micrometer
D. Taper gage

3. Which of the following is not a safe forklift practice:

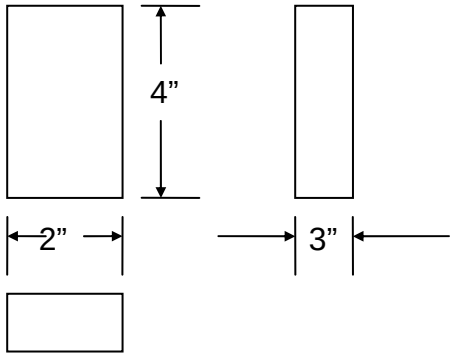
A. Lowering the forks to the floor before dismounting the forklift.
B. Sounding the horn when entering or exiting a building.
C. Lifting equipment to allow personnel to work under the load.
D. Performing daily forklift inspections.

4. Employee working in an elevated heights must be protected from falling when the distance between the platform and lower level is more then:

A. 6. feet
B. 12 feet
C. 16 feet
D. 20 feet

5. The area of the block shown below is:

A. 9 square inches
B. 8 square inches
C. 24 cubic inches
D. 9 cubic inches



Answers to Sample Questions

The following are answers to the sample questions on the previous page

Answer

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

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
Performance Assessment Services
GO4 - Ground Floor
8631 Rush St.
Rosemead, CA 91770

Test Name: **Service Shop Mechanic** Test No: 2611

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