

Study Guide Test

**Automotive District/Traveling Mechanic
Test**

Test No. 2003x

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

Rev 1/27/2009

Introduction

The Automotive District/Traveling Mechanic

test is a job knowledge test designed to cover the major Knowledge Categories necessary to perform the mechanical portion of these jobs. This *Guide* contains strategies to use for taking tests and a study outline, which includes knowledge categories, and study references.

Test Scheduling

Employees who apply for positions, bids, and transfers requiring testing before March 9, 2009, will be scheduled for testing by their Supervisor through Human Resources. For those who apply after March 9, 2009, both the employee and their Supervisor will be notified of a scheduled test date by Human Resources. Test times and dates for positions requiring testing will be specified in the bid/transfer/requisition/job posting. Employees should be prepared to test on the specified dates. Only employees who apply for positions requiring testing, and who meet basic qualifications, will be invited to test. Applicants will be scheduled through the recruiter. If you have any questions, please 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. Prior to March 9, 2009, 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. After March 9, 2009 you will take the exam on a computer. For more information on this, please see the next section of this study guide, Computer Based Testing.

The test has a three hour time limit and testing aides are not allowed.

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.

Computer Based Testing

Effective **March 9, 2009**, all knowledge tests will be administered on the computer. The information below refers only to those tests administered **March 9, 2009** or later.

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, to answer each 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. The amount of time you have remaining to take the test will always be shown in the top left corner of the screen. A sample is shown below:

1. 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.
2. 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.



Time remaining: 29:54

Sample

Please select the best answer for each question below. If you have any comments, please record them on the Test Comments form given to you by the Test Administrator. Good luck!

1 of 13

Two resistors of 20 ohms each are connected in series. The total resistance of the circuit is _____ ohms.

- a. 10
- b. 20
- c. 30
- d. 40

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



Click the left button when the pointer icon is over your answer choice.

4. 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.



Time remaining:

Sample

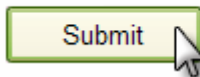
Please select the best answer for each question below. If you have any comments, please record them on the Test Comments form given to you by the Test Administrator. Good luck!

1 of 13

Two resistors of 20 ohms each are connected in series. The total resistance of the circuit is _____ ohms.

- a. 10
- b. 20
- c. 30
- d. 40

5. You can change your answers at any time during the test until the time runs out, or you click the "Submit" button.



Test Taking Strategies

The Automotive District/Traveling 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
<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 <i>immediately</i>.
<i>Budget your time</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.

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 answer.

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 mathematical 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 paper, 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 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.

Study Guide Outline

Job Knowledge Category

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

A. Hydraulic and pneumatic principles:

Knowledge of principles and terminology as they apply to tools, equipment, machinery operation, troubleshooting and diagnosing problems and making and/or assisting with repairs. Ability to interpret information presented in schematics, blueprints and drawings as related to hydraulic and pneumatic theories.

B. Electrical/Electronic systems:

Knowledge of principles and terminology such as watts, volts, ohms, and amperes; and their application in equipment and electrical cars operation, troubleshooting and diagnosing problems, maintenance and making and/or assisting with repairs. Ability to interpret information presented in schematics, blueprints and drawings as related to electrical and electronic theories.

C. Internal Combustion Engines:

Knowledge of terminology, operating principles and related systems- such as: internal fuel systems, lubrication, ignition, emission, and cooling of gasoline and diesel engines. Ability to apply this knowledge to troubleshooting and diagnosing problems, making and/or assisting with repairs. Ability to interpret information presented in schematics, blueprints and drawings as related to internal combustion engines.

D. Tools, Equipment, Manuals, and Work Procedures.

Knowledge of hand and power tools, precision measuring tools, metering tools, and the procedures for application of these tools. Knowledge of using service manuals in troubleshooting, diagnosing problems, making and/or assisting with repairs. Knowledge of Federal, State, Corporate and Department safety requirements, and other work procedures necessary for efficient garage operation.

E. Brakes, Chassis, Suspension, and Drive Trains

Knowledge of terminology and repair procedures for automotive equipment brakes, chassis suspension and drive train components. Ability to interpret information presented in schematics, blueprints and drawings as related to the operation and repair of automotive equipment brakes, chassis, suspension and drive-train.

Activity Groups

Below are the major job activity groups covered on the test.

1. Diesel & gas engines
2. Electronics and Electrical Systems
3. Air brake system
4. Hydraulic brake system
5. Steering, suspension & chassis
6. Hydraulic systems
7. Mechanical boom components
8. Miscellaneous mechanical duties

References

A. HYDRAULIC AND PNEUMATIC PRINCIPLES:

Altec Service Manuals

Edison System Manuals

ASE Test Study Guides for: Medium/Heavy Truck Series; Automobile Series

B. ELECTRICAL/ELECTRONIC SYSTEMS:

Hydraulic Troubleshooting Quiz

ASE Test Study Guides for: A8 "Engine Performance" & A6 "Electrical/Electronics Systems"

C. INTERNAL COMBUSTION ENGINES:

ASE Test Study Guides for: A8 "Engine Performance"; T1 "Gasoline Engines", T2 "Diesel Engines"; A5 "Brakes"; T4 "Brakes"; Engine Machinist Series.

D. TOOLS, EQUIPMENT, MANUALS, AND WORK PROCEDURES:

Altec Manual/Terex: Service Operations Manual

"Gas Buggy Book": Found in all TSD Fuel Trucks.

S. C. E. Accident & Fire Prevention Manual: Section 121.

National Wheel and Rim Association: Tire Safety Module.

ASE Test Study Guides for: Suspension and Steering; Passenger Car Series, including A4, A5, A6, A8.

E. BRAKES, CHASSIS, SUSPENSION AND DRIVE TRAINS:

SCE Edison System Manual: Boom Inspection Requirements

E.D.A.C. Manual: "General Chassis Standards" Section, handout #3.

"Gas Buggy Book": Found in all TSD Fuel Trucks.

ASE Test Study Guides: A5 "Brakes"; A4 "Suspensions and Steering"; A3 "Drive Trains".

ASF Preventative Maintenance Inspection

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.

KNOWLEDGE CATEGORY A: Hydraulic and Pneumatic Principles

1. **An air brake chamber converts:**
 - a. mechanical force to vacuum.
 - b. vacuum to mechanical force.
 - c. mechanical force to air pressure.
 - d. air pressure to mechanical.

KNOWLEDGE CATEGORY B: Electrical/Electronic Systems

2. **A vehicle with a Throttle Position Switch (TPS) voltage of .758 indicates that the throttle position is at:**
 - a. cruise.
 - b. WOT.
 - c. idle.
 - d. power circuit.

KNOWLEDGE CATEGORY C: Internal Combustion Engines

3. **When the fuel on a diesel engine is restricted, what symptom will most likely occur?**
 - a. Diesel will smoke excessively.
 - b. Engine will not start.
 - c. Engine will start and idle, but will lack power.
 - d. Diesel will misfire.

KNOWLEDGE CATEGORY D: Tools, Equipment, Manuals and Work Procedures

- 4. When bleeding a Rear Wheel Anti-Lock (RWAL) brake system, it is advisable to first:**
- a. bleed the front wheels.
 - b. discharge the accumulator.
 - c. bleed the furthest rear wheel.
 - d. disconnect the battery.

KNOWLEDGE CATEGORY E: Brakes, Chassis, Suspension and Drive Trains

- 5. The hand Brake (parking brake) is adjusted:**
- a. before adjusting rear brakes.
 - b. after adjusting rear brakes.
 - c. before adjusting front or rear brakes.
 - d. after adjusting front brakes.

Answers to Sample Questions

The following are answers to the sample questions on the previous pages.

1. **D** (Knowledge Category: A)
2. **C** (Knowledge Category: B)
3. **C** (Knowledge Category: C)
4. **C** (Knowledge Category: D)
5. **B** (Knowledge Category: E)

