

ASE Test Preparation and Study Guide

Covers ASE Areas A1-A8 plus A9, G1 and L1

Third Edition

James D. Halderman

**ASE Certified Master Automobile Technician
(A1-A8), plus A9, F1, G1, L1 and L3**



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Library of Congress Cataloging-in-Publication Data

Names: Halderman, James D., author.

Title: ASE test preparation and study guide : covers ASE areas A1-A8 plus A9, G1 and L1 / James D. Halderman.

Description: Third edition. | Boston : Pearson, [2018]

Identifiers: LCCN 2018034148 | ISBN 9780135232866 | ISBN 0135232864

Subjects: LCSH: Automobiles—Maintenance and repair—Examinations—Study guides. | Automobiles—Maintenance and repair—Examinations, questions, etc. | Automobile mechanics—Certification—United States. | National Institute for Automotive Service Excellence—Examinations—Study guides.

Classification: LCC TL157 .H37 2018 | DDC 629.28/72—dc23

LC record available at <https://lcn.loc.gov/2018034148>

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ASE STUDY GUIDE, Third Ed.

Prepare tomorrow's automotive professionals for success on the National ASE Certification Tests with the *ASE Test Preparation and Study Guide*. This guide covers ASE areas A1-A8, and is designed to help service technicians and students of automotive technology prepare to take the National ASE Certification Tests. Written by a service technician and an automotive instructor—not a technical writer—this is the ideal supplement to all automotive technology courses.

New to this Edition

As a result of changes made to the ASE tests, many questions have been replaced with new ones, especially in the Electrical (A6) section. Many new questions were added that include reading schematics, which is difficult for beginning technicians when it involves finding a possible source of an open or shorted circuit.

Questions that involved older systems have been replaced with similar questions of newer systems, such as gasoline direct injection (GDI) and electronic throttle control (ETC) systems. The wording of the answers has also been updated to be similar to how it is on the actual ASE certification tests.

The ASE task list for each certification test has been added at the beginning of each test section. As a result of questions and concerns from technicians, a new feature in the Preface called *Test Taking Tips* has been added. This section includes the step-by-step procedure that every test taker must go through when taking the ASE tests.

Additional information about the tests has been added, including the time allowed for each test. This information is very important because often the time allowed is about equal to one minute per question. Many technicians struggle to figure out one question and can easily run out of time. The L1 (Advanced Level Engine Performance) has been updated to include questions that require the use of the Composite Vehicle Type-4 Reference Booklet. The booklet needs to be downloaded from the ASE website www.ase.com.

What Is ASE?

ASE is an abbreviation for the National Institute for Automotive Service Excellence (simply known as ASE), which was formed in 1972 to provide standardized testing of service technicians.

ASE is a nonprofit association, and its main goal is to improve the quality of vehicle service through testing and volunteer certification.

What areas of vehicle service are covered by the ASE tests?

The standard automobile test service areas include:

- A1** Engine Repair
- A2** Automatic Transmission/Transaxle
- A3** Manual Drive Train and Axles
- A4** Suspension and Steering
- A5** Brakes
- A6** Electrical/Electronic Systems
- A7** Heating and Air Conditioning
- A8** Engine Performance

- If a technician passes a test and has met the experience requirement, the technician will be awarded certification in that area.
- If a technician takes and passes all eight of the automobile tests and has achieved two or more years of work experience, ASE will award the designation of ASE Certified Master Automobile Technician.
- Check the ASE website at www.ase.com for other certification areas.



Frequently Asked Questions

How can I contact ASE?

ASE
1503 Edwards Ferry Road, NE
Suite 401

Leesburg, VA 20176
Website: www.ase.com
1-703-669-6600

When are the tests given and where?

The ASE tests are given at hundreds of test sites many times during the year. Consult the ASE website for details and locations of the test sites and the dates.

What do I have to do to register?

Register online at www.ase.com.

Telephone: 703-669-6600

Call ASE toll-free at 1-800-390-6789 or visit the website for details about cost, test locations, and dates.

How many years of work experience are needed?

ASE requires that you have two or more years of full-time, hands-on working experience either as an automobile or truck technician, except as noted below. If you have *not* previously provided work experience information, you will receive a Work Experience Report Form with your admission ticket. You *must* complete and return this form to receive a certificate.

Substitutions for work experience. You may receive credit for up to one year of the two-year work experience requirement by substituting relevant formal training in one, or a combination, of the following:

- **High School Training:** Three full years of training, either in automobile, truck, school bus repair, or in collision repair, refinishing, or damage estimating, may be substituted for one year of work experience.
- **Post-High School Training:** Two full years of post-high school training in a public or private trade school, technical institute, community or four-year college, or in an apprenticeship program may be counted as one year of work experience.
- **Short Courses:** For shorter periods of post-high school training, you may substitute two months of training for one month of work experience.

You may receive full credit for the two-year work experience requirement with the following:

- **Completion of Apprenticeship:** Satisfactory completion of either a three- or four-year bona fide apprenticeship program.

Are there any hands-on activities on the ASE test?

No. All ASE tests are written, using objective-type questions, with the correct answer selected from four possible answer choices.

Who writes the ASE questions?

All ASE test questions are written by a panel of industry experts, educators, and experienced ASE-certified service technicians. Each question is reviewed by the committee and checked for the following:

- **Technically accurate.** All test questions use the correct terms and only test for vehicle manufacturer's recommended service procedures. Slang is not used, nor are any after-market accessories included on the ASE test.

- **Manufacturer-neutral.** All efforts are made to avoid using vehicle-specific procedures that are manufacturer-specific, such as General Motors or Toyota vehicles. A service technician should feel comfortable about being able to answer the questions regardless of the type or brand of vehicle.
- **Logical answers.** All efforts are made to be sure that all answers (not just the correct answers) are probable. While this may seem to make the test tricky, it is designed to test for real knowledge of the subject.
- **Random answer.** All efforts are made to ensure the correct answers are not always the longest answer or that one letter, such as c, is not used more than any other letter.

What types of questions are asked on the ASE test?

All ASE test questions are objective. There will not be questions where you will have to write an answer. Instead, all you have to do is select one of the four possible answers and place a mark in the correct place on the score sheet.

- **Multiple-choice questions**

This type of question has one correct (or mostly correct) answer (called the key) and three incorrect answers (called distracters).

A multiple-choice question example:

What part of an automotive engine does not move?

- Piston
- Connecting rod
- Block
- Valve

The correct answer is c (block). This type of question asks for a specific answer. Answer a (piston), b (connecting rod), and d (valve) all move during normal engine operation. The best answer is c (block) because even though it may vibrate, it does not move as the other parts do.

- **Technician A and Technician B questions**

This type of question is generally considered to be the most difficult according to service technicians who take the ASE test. This type of question is basically two true and false questions. A situation or condition is usually stated and two technicians (A and B) say what they think could be the correct answer and you must decide which technician is correct.

- A only
- B only
- Both A and B
- Neither A nor B

The best way to answer this type of question is to carefully read the question and consider each Technician A and Technician B answers to be solutions to a true or false question. Then, answer the question based on either one technician or both technicians are correct or not correct.

Example:

Two technicians are discussing an engine that has lower-than specified fuel pressure. Technician A says that the fuel pump could be the cause. Technician B says that the fuel-pressure regulator could be the cause. Which technician is correct?

- A only
- B only
- Both A and B
- Neither A nor B



Analysis:

Is Technician A correct? The answer is yes, because if the fuel pump was defective, the pump pressure could be lower than specified by the vehicle manufacturer. Is Technician B

correct? The answer is yes, because a stuck open or a regulator with a weak spring could be the cause of lower-than-specified fuel pressure. The correct answer is therefore c (Both Technicians A and B are correct).

- **Most-likely-type questions**

This type of question asks which of the four possible items listed is the most likely to cause the problem or symptom. This type of question is often considered to be difficult because recent experience may lead you to answer the question incorrectly. Even though it is possible, it is not the “most likely” answer.

Example:

Which of the items below is the most likely to cause blue exhaust at engine start?

- a. Valve stem seals
- b. Piston rings
- c. Clogged PCV valve
- d. A stuck oil pump regulator valve

Analysis:

The correct answer is a because valve stem seals are the most likely to cause this problem. Answer b is not correct because even though worn piston rings can cause the engine to burn oil and produce blue exhaust smoke, it is not the most likely cause of blue smoke at engine start. Answers c and d are not correct because even though these items could contribute to the engine burning oil and producing blue exhaust smoke, they are not the most likely.

- **Except-type questions**

ASE will sometimes use a question that includes answers that are all correct except one. You have to determine which of the four questions is not correct.

Example:

A radiator is being pressure-tested using a hand-operated tester. This test will check for leaks in all except:

- a. Radiator
- b. Heater core
- c. Water pump
- d. Evaporator

Analysis:

The correct answer is d because the evaporator is not included in the cooling system and will not be pressurized during this test. Answers a (radiator), b (heater core), and c (water pump) are all being tested under pressure exerted on the cooling system by the pressure tester.

- **Least-likely-type questions**

Another type of question asked on many ASE tests is a question that asks which of the following is least likely to be the cause of a problem or symptom. In other words, all of the answers are possible, but it is up to the reader to determine which answer is the least likely to be correct.

Example:

Which of the following is the least likely cause of low oil pressure?

- a. Clogged oil pump screen
- b. Worn main bearing
- c. Worn camshaft bearing
- d. Worn oil pump

Analysis:

The correct answer is c because even though worn camshaft bearings can cause low oil pressure, the other answers are more likely to be the cause.

Should I guess if I don't know the answer?

Yes. ASE tests simply record the correct answers, and by guessing, you will have at least a 25% (1 out of 4) chance. If you leave the answer blank, it will be scored as being incorrect. Instead of guessing entirely, try to eliminate as many of the answers as possible as not being very likely. If you can eliminate two out of the four, you have increased your chance of guessing to 50% (two out of four).

HINT: Never change an answer. Some research has shown that your first answer is most likely to be correct. It is human nature to read too much into the question rather than accept the question as it was written.

Is each test the same every time I take it?

No. ASE writes many questions for each area and selects from this “test bank” for each test session. You may see some of the same questions if you take the same test in the spring and again in the fall, but you will also see many different questions.

Can I skip questions I don't know and come back to answer later?

Yes. You may skip a question if you wish, and the program will remind you that you skipped a question. It is often recommended to answer the question or guess, and go on with the test so that you do not run out of time to go back over the questions.

How much time do I have to take the tests?

TEST	TEST NAME	NUMBER OF QUESTIONS	TESTING TIME (MINUTES)
A1	Engine Repair	60	75
A2	Automatic Transmission/Transaxle	60	75
A3	Manual Drive Train and Axles	50	60
A4	Suspension and Steering	50	60
A5	Brakes	55	75
A6	Electrical/Electronic Systems	60	90
A7	Heating and Air Conditioning	60	75
A8	Engine Performance	60	75
A9	Light Vehicle Diesel Engines	60	75
G1	Auto Maintenance and Light Repair	55	90
L1	Advanced Engine Performance Specialist	60	150

Note: Additional questions may be included for research and will not count in the grading, but every question should be answered as these are not labeled as not counting. Recertification tests have about half of the number of questions and reduced time limit to reflect the shorter number of questions. Check the ASE website at www.ase.com for additional information.

Will I have to know specifications and gauge readings?

Yes and no. You will be asked the correct range for a particular component or operation and you must know about what the specification should be. Otherwise, the questions will state that the value is less than or greater than the allowable specification. The question will deal with how the service technician should proceed or what action should be taken.

Can I take a break during the test?

Yes, you may use the restroom, but you must sign out when leaving the test room and sign in when re-entering the room.

How are the tests scored?

The ASE tests are scored immediately and you will know if you passed or failed, as soon as it is submitted.

What percentage do I need to achieve to pass the ASE test?

While there is no exact number of questions that must be answered correctly in each area, an analysis of the test results indicates that the percentage needed to pass is about 65% to 70%. Therefore, in order to pass the Engine Repair (A1) ASE certification test, you will have to answer about 39 questions correct out of 60. In other words, you can miss about 21 questions and still pass.

What happens if I do not pass?

If you fail to achieve a passing score on any ASE test, you can take the test again at the next testing session.

Do I have to pay another registration fee if I already paid it once?

Yes. The registration fee is due at every test session, whether you select to take one or more ASE tests. Therefore, it is wise to take as many tests as you can at each test session.

Are the questions in this study guide actual ASE test questions?

No. The test questions on the actual ASE certification tests are copyrighted and cannot be used by others. The test questions in this study guide cover the same technical information and the question format is similar to the style used on the actual test.

What happens when I arrive at the testing center?

STEP 1 Arrive at the test site prepared to take the test. Bring a photo ID and your test registration paper.

STEP 2 Before being assigned a computer on which you will take the test, the following will be performed:

- A locker will be assigned in which to put everything including keys, cell phone, books, coats, and wallet, except for the government-issued photo ID.
- When entering the test area, you will be asked to turn all of your pockets inside out to verify that there is nothing left in your pockets.
- Then, you will be asked to stand on a line with your arms outstretched and a sensor wand will be used to check for anything on your body. You will be asked to turn around, and again, the wand will be used to check your other side.
- You will also be asked to lift up your pants so the inspector can see your socks and verify there is nothing hidden in them.
- If glasses are being worn, these must be taken off and inspected for any possible recording device that may be used to capture a copy of the questions on the screen.

- STEP 3** After being checked, you will be given your photo ID and the key to the locker.
- STEP 4** You will receive scratch paper and pencils, and if taking an advanced test, such as the L1 Advanced level test, a Composite Vehicle Reference booklet.
- STEP 5** The inspector will ask you to sign in and wait while he/she starts the computer that you will use for your test.

Note: *The testing area is under video surveillance at all times.*

- STEP 6** After the testing computer has been set up, you will be escorted to the computer cubical and instructed to place your photo ID on a holder, and the key to your locker on the desk in front of you.
- STEP 7** At this time, you click on the screen and read through a short tutorial of what you can expect with the test. The tutorial will show you how to flag and unflag questions for review at the end of the test. You can even change the language to Spanish. When the tutorial is finished, the test is ready. Click start and the questions are displayed. Each test has a time limit and the time remaining is displayed on the upper left corner. The number of the test questions is shown at the upper right corner of the screen, such as 17/50.
- HINT:** *If you are spending too much time on one question, flag it and go on to keep on task. The program will display and allow you to go back and answer the question you skipped if there is time remaining at the end.*
- STEP 8** After the last question has been displayed and answered, you will be shown a screen displaying any flagged questions. Once all questions are answered, you can click to exit and you have completed the test. Exit the test area.
- STEP 9** When you exit the testing area, you will be asked to sign out and show your photo ID. Your test score will be printed out, stamped, and signed, and given to you before you retrieve your belongings, and then, you are free to leave the testing center.

Test-Taking Tips

Start Now

Even if you have been working on vehicles for a long time, taking an ASE certification test can be difficult. The questions will not include how things work or other “textbook” knowledge. The questions are based on “real world” diagnosis and service. The tests may seem tricky to some because the “distracters” (the wrong answers) are designed to be similar to the correct answer. If this is your first time taking the test or you are going to recertify, start now to prepare. Allocate time each day to study.

Practice Is Important

Many service technicians do not like taking tests. As a result, many technicians rush through the test to get it over with quickly. Also, many service technicians have lots of experiences on many different vehicles. This is what makes them good at what they do, but when an everyday problem is put into a question format (multiple choice), the answer may not be as clear as your experience has taught you.

Keys to Success

The key to successful test-taking includes:

- Practice answering similar-type questions.
- Carefully read each question two times to make sure you understand the question.
- Read each answer.
- Pick the best answer.
- Avoid reading too much into each question.
- Do not change an answer unless you are sure that the answer is definitely wrong.
- Look over the glossary of automotive terms for words that are not familiar to you.

The best preparation is practice, practice, and more practice. This is where using the ASE Test Prep practice tests can help.

