

# Apprenticeship and Certification Study Guide



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# Introduction

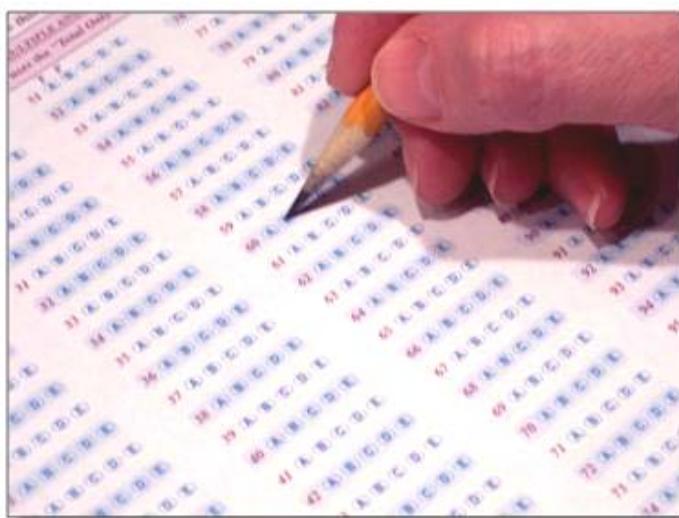
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This Study Guide has been developed by the Newfoundland and Labrador Department of Education and Early Childhood Development, Apprenticeship and Trades Certification Division, to assist apprentices and trade qualifiers as they prepare to write the Red Seal Exam. Red Seal Exams are available for all Red Seal trades. For a list of Red Seal trades please refer to the Department of Education and Early Childhood Development website: <https://www.gov.nl.ca/atcd/designated-trades/list-of-designated-trades/>

**Some of the specific goals of this guide are:**

- ⇒ to help you understand the skills and knowledge that might be covered on the exam
- ⇒ to help you identify your strengths and weaknesses
- ⇒ to provide organization and structure for a course of study
- ⇒ to provide a list of resources to help you with your study plan
- ⇒ to support and supplement the teaching and learning process

This study guide outlines the theoretical portion of the program. The intent is not to replace technical training provided under the guidance of instructors. Rather, it is a tool to be used in conjunction with formal training.



## Exam Process

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### Before the Exam

You must contact the nearest Apprenticeship and Trades Certification Divisional office to make request to write the Red Seal exam (*See Appendix A for a list of regional offices*). Upon approval, the Apprenticeship Program Officer (APO) will notify you of your eligibility to write the exam, and provide you with scheduling information. If you require special accommodations due to a disability or language barrier, please contact your regional office for information on applying for this service.

### During the Exam

#### You must bring:

- personal identification such as a photo or signature ID or valid Newfoundland and Labrador driver's license
- your notification letter

#### The following will be provided:

- a calculator (*see Appendix B for calculator information*)
- all other items required such as pencils, scrap paper, etc.

#### Important Note:

Personal cell phones, calculators, or other electronic equipment are NOT allowed into the exam room. If you do bring them, they will be stored away and returned to you when you have completed the exam.

### After the Exam

Results will be mailed to you approximately seven to ten days after completion of the exam. All necessary instructions and information will be provided in the results letter.

The percentage mark you obtained will be provided. You will also be given a section by section breakdown, showing how many questions were in each section, as well as the number of questions in each section you completed successfully.

If you are successful in obtaining a 70% or more on your exam, you will be issued a Newfoundland and Labrador Certificate of Qualification with a Red Seal endorsement.

## Exam Format

All Red Seal exams are written in multiple-choice format. Each exam has between 100 and 150 questions. A multiple choice question consists of a stem (a complete question) followed by four options (A, B, C, D). The stem contains all the information necessary to answer the question. The options consist of the one correct answer and three “distracters.” Distracters are incorrect. (See *Appendix C for a sample answer sheet*).

IP Red Seal exams contain three types of questions:

### Level 1    Knowledge and Recall

Questions at this level test your ability to recall and understand definitions, facts, and principles.

### Level 2    Procedural and Application

Questions at this level test your ability to apply your knowledge of procedures to a new situation.

### Level 3    Critical Thinking

Questions at this level test your ability to interpret data, solve problems and arrive at valid conclusions.

#### Level 1 Examples:

1. Where are the bleeder valves (if used) located in the cooling system?
  - A. In the heater hoses.
  - B. Near the high points of the system.
  - C. On the radiator side of the thermostat.
  - D. At the lowest point of the system.



2. What position is the heater control valve in when the air conditioning is on and the panel controls are in the “max air” setting?
  - A. Fully open.
  - B. Almost closed.
  - C. About 50% open.
  - D. Fully closed.



3. What is the purpose of the condenser?

- A. Allows outside air to heat the refrigerant.
- B. Acts as a refrigerant reservoir.
- C. Changes the refrigerant vapor into a liquid.
- D. Changes the refrigerant liquid into a vapor.



**Level 2 Examples:**

1. What is the procedure for preparing an engine hoist to lift an engine?

- A. Draw the legs on the hoist in, and then extend the lift arm to access the engine.
- B. Extend the legs as far as possible, and then pull the lifting arm in for stability.
- C. Adjust the leg length and then adjust the lift beam length to lift the engine.
- D. Adjust the engine hoist to carry the engine as low as possible, and then lift the engine.



2. What steps are to be taken if a technician shows symptoms of carbon monoxide poisoning after working in a closed shop all day?

- A. Evacuate the technician to fresh air and then check the cold air return on the shop heater.
- B. Evacuate the technician to fresh air and then check the exhaust system including the makeup air unit.
- C. Keep the technician warm and then contact a doctor.
- D. Test the oxygen level in the shop and then test the carbon monoxide level.



3 What is the procedure for road testing a vehicle for steering, suspension or braking concerns?

- A. Test drive the vehicle by driving it normally on errands, and then perform some hard turns in a parking lot.
- B. Try to drive in the same fashion as the owner, and then start and stop aggressively to make any problems more apparent.
- C. Drive the vehicle long enough to get to full operating temperature, and then observe the handling and braking characteristics.
- D. Test the brakes and handling at low speeds, and then road test on several different surfaces while trying to recreate the condition.



### Level 3 Examples:

1. Testing an engine coolant temperature sensor shows 100 000 ohms resistance at  $-40^{\circ}\text{C}$  ( $-40^{\circ}\text{F}$ ) and 70 ohms at  $130^{\circ}$  ( $266^{\circ}\text{F}$ ). What does this indicate?

- A. The sensor is functioning normally with its design limits.
- B. The sensor circuit is shorted in the powertrain control module.
- C. The sensor is shorted when hot, bypassing all controls.
- D. The engine coolant temperature sensor has a ground fault.



2. A customer reports coolant is being lost. Coolant was recently added to a hot engine. The customer now notices white smoke from the exhaust when the engine is loaded. During a cooling system pressure test, the pressure drops slowly but no external leaks are seen. What is the problem?

- A. The intake manifold is leaking into the crankcase.
- B. The cylinder head gasket is leaking, pressurizing the cooling system.
- C. The transmission cooler is leaking coolant into the transmission.
- D. The cylinder head has cracked, leaking coolant into the combustion chamber.



3. An engine is described as being "sluggish". The vacuum reading at idle is 17 inches Hg (57 kPa). On a snap throttle test the vacuum drops to 8 inches Hg (27 kPa) then rebounds to 18 inches Hg (61 kPa). The vacuum reading drops off slowly when the engine is held at 2500 rpm. What do these results indicate?

- A. A stretched timing chain.
- B. A burned exhaust valve.
- C. A restricted exhaust system.
- D. A rich fuel/air mixture.



**Source of questions:**

<http://www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=23>

## Exam Content

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### Understanding the *Red Seal Occupational Standard (RSOS)*

The Red Seal model has historically been based on the development of the National Occupational Analysis (NOA) which supports the development of multiple-choice format examinations.

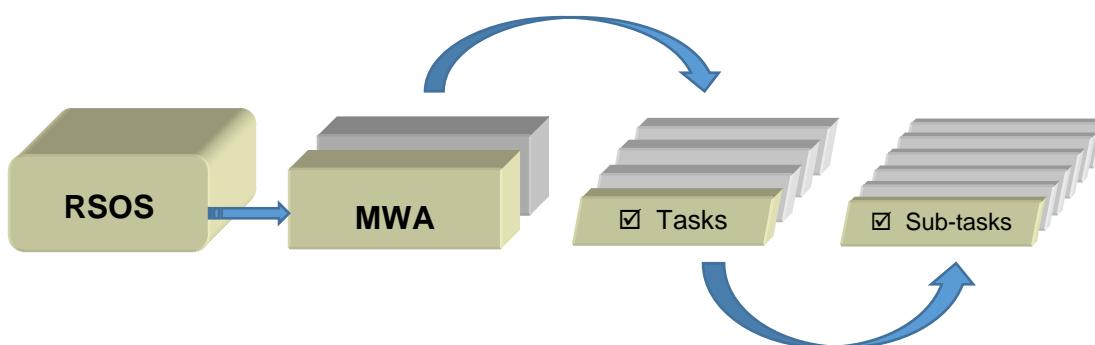
The RSOS was introduced in 2015 and is now taking the place of the NOA. Each RSOS or NOA sets the standard for a Red Seal trade. The Red Seal Examination is based on the Red Seal Standard.

The new standards provide greater consistency in learning resources and allow for increased industry involvement in the development of these standards. This new model places increases emphasis on apprenticeship training and assessing skills with industry learning objectives, outcomes and performance criteria.

The RSOS for each trade describes the tasks and sub-tasks; skills and knowledge requirements; summary of essential skills; safety information; trends affecting the trade; technical terms; names of tools and equipment; acronyms; learning objectives and outcomes; industry expected performance and essential skills related to each sub-task.

The RSOS is an excellent tool to use as you study for the Red Seal exam. RSOSs can be found at <http://www.red-seal.ca/resources/n.4.1-eng.html>

RSOS material is organized into the following categories: **MWA (Major Working Activity)**. The MWAs are further broken down into **TASKS** (*describes activities within an MWA*) and **SUB-TASKS** (*describe activities within a task – This is what the exam is based on*).

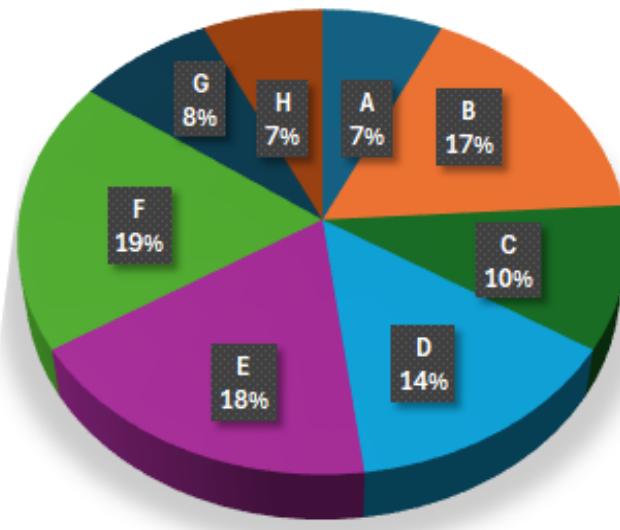


The NOA will continue to be used as the occupational standard for trades that do not yet have an RSOS developed.

## RSOS Pie Chart

The RSOS Pie Chart presents the MWA percentages in the form of a pie chart which tells you the approximate number of questions from each MWA. For example, 7% of the questions on the **Automotive Service Technician** Exam will be based on **MWA A**.

### AUTOMOTIVE SERVICE TECHNICIAN



MWA Titles			
MWA A	Performs Common Occupational Skills	MWA E	Diagnoses and Repairs Electrical and Comfort Control Systems
MWA B	Diagnoses and Repairs Engine and Engine Support Systems	MWA F	Diagnoses and Repairs Steering, Suspension, Braking and Control Systems, Tires, Hubs & Wheel Bearings
MWA C	Diagnoses and Repairs Vehicle Module Communications Systems	MWA G	Diagnoses and Repairs Restraint Systems, Body Components, Accessories and Trim
MWA D	Diagnoses and Repairs Driveline Systems	MWA H	Diagnoses and Repairs Hybrid and Electric Vehicle (EV) Systems

## Exam Breakdown

The **Automotive Service Technician** exam currently has 125 questions. The following table shows a breakdown of the number of questions that come from each RSOS MWA. It is important to note that the exact number of questions can change at any time. When you are ready to write your exam, you may contact your regional office to verify the number of questions (See Appendix A).

MWA		# of Questions
<b>MWA A</b>	<b>Performs Common Occupational Skills</b>	<b>9</b>
<b>Task 1</b>	Performs safety related functions	
<b>Task 2</b>	Uses tools, equipment and documentation	
<b>Task 3</b>	Uses communication and mentoring techniques	
<b>MWA B</b>	<b>Diagnoses and Repairs Engine and Engine Support Systems</b>	<b>22</b>
<b>Task 4</b>	Diagnoses engine systems	
<b>Task 5</b>	Repairs engine systems	
<b>Task 6</b>	Diagnoses gasoline engine support systems	
<b>Task 7</b>	Repairs gasoline engine support systems	
<b>Task 8</b>	Diagnoses diesel engine support systems	
<b>Task 9</b>	Repairs diesel engine support systems	
<b>MWA C</b>	<b>Diagnoses and Repairs Vehicle Module Communications Systems</b>	<b>12</b>
<b>Task 10</b>	Diagnoses vehicle networking systems	
<b>Task 11</b>	Repairs vehicle networking systems	
<b>MWA D</b>	<b>Diagnoses and Repairs Drive Line Systems</b>	<b>17</b>
<b>Task 12</b>	Diagnoses driveline systems	
<b>Task 13</b>	Repairs driveline systems	
<b>MWA E</b>	<b>Diagnoses and Repairs Electrical and Comfort Control Systems</b>	<b>23</b>
<b>Task 14</b>	Diagnoses electrical systems and components	
<b>Task 15</b>	Repairs electrical systems and components	
<b>Task 16</b>	Diagnoses heating, ventilation and air conditioning (HVAC) and comfort control systems	
<b>Task 17</b>	Repairs heating, ventilation and air conditioning (HVAC) and comfort control systems	
<b>MWA F</b>	<b>Diagnoses and Repairs Steering, Suspension, Braking and Control Systems, Tires, Hubs and Wheel Bearings</b>	<b>23</b>
<b>Task 18</b>	Diagnoses steering, and suspension, braking, control systems, tires, wheels, hubs and wheel bearings	
<b>Task 19</b>	Repairs steering, and suspension, braking, control systems, tires, wheels, hubs and wheel bearings	
<b>MWA G</b>	<b>Diagnoses and Repairs Restraint Systems, Body Components, Accessories and Trim</b>	<b>10</b>
<b>Task 20</b>	Diagnoses restraint systems, body components, accessories and trim	
<b>Task 21</b>	Repairs restraint systems, body components, accessories and trim	
<b>MWA H</b>	<b>Diagnoses and Repairs Hybrid and Electric Vehicle (EV) Systems</b>	<b>9</b>
<b>Task 22</b>	Diagnoses hybrid and Electric Vehicles (EV)	
<b>Task 23</b>	Repairs hybrid and Electric Vehicles (EV)	
<b>Total</b>		<b>125</b>

## RSOS Sub-tasks

The following *RSOS Task Profile Checklist* outlines the MWAs, tasks and sub-tasks for your trade. The Red Seal exam is written to test your knowledge and abilities regarding the sub-tasks in the RSOS. This chart can be used to review your current knowledge. You can review by placing a check mark (✓) next to those you understand fully.

Place your focus on those you do not understand and study them until you are comfortable with the material. Think of possible questions in that particular content area.

The RSOS also contains a list of “supporting knowledge and abilities” for each sub-task. They are the skills and knowledge you must have to perform a sub-task. The supporting knowledge and abilities identified under each sub-task will be very helpful as you review. The list can be found in the RSOS, on the Red Seal website, for your trade.

**Task Profile Checklist**  
**Based on RSOS 2023**  
**Automotive Service Technician**

## **MWA A: Performs Common Occupational Skills**

<b>Sub-Tasks</b>	<input type="checkbox"/> <b>Task 1: Performs safety-related functions</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Maintains safe work environment</li><li><input type="checkbox"/> Uses personal protective equipment (PPE) and safety equipment</li><li><input type="checkbox"/> Implements specific safety protocols for hybrid and electrical vehicles (EV)</li></ul>
<b>Sub-Tasks</b>	<input type="checkbox"/> <b>Task 2: Uses tools, equipment and documentation</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Uses tools and equipment</li><li><input type="checkbox"/> Uses fasteners, tubing, hoses and fittings</li><li><input type="checkbox"/> Uses hoisting and lifting equipment</li><li><input type="checkbox"/> Uses electronic service tools and systems for diagnostics and programming</li><li><input type="checkbox"/> Uses documentation and technical information</li></ul>
<b>Sub-Tasks</b>	<input type="checkbox"/> <b>Task 3: Uses communication and mentoring techniques</b> <ul style="list-style-type: none"><li><input type="checkbox"/> Uses communication techniques</li><li><input type="checkbox"/> Uses mentoring techniques</li></ul>

## MWA B: Diagnoses and Repairs Engine and Engine Support Systems

### Task 4: Diagnoses engine systems

**Sub-Tasks**

- Diagnoses cooling systems
- Diagnoses lubricating systems
- Diagnoses engine assembly
- Diagnoses accessory drive systems

### Task 5: Repairs engine systems

**Sub-Tasks**

- Repairs cooling systems
- Repairs lubricating systems
- Repairs engine assembly
- Repairs accessory drive systems

### Task 6: Diagnoses gasoline engine support systems

**Sub-Tasks**

- Diagnoses gasoline fuel delivery and injection systems
- Diagnoses gasoline ignition systems
- Diagnoses gasoline intake/exhaust systems
- Diagnoses gasoline emission control systems

### Task 7 : Repairs gasoline engine support systems

**Sub-Tasks**

- Repairs gasoline fuel delivery and injection systems
- Repairs gasoline electronic ignition systems
- Repairs gasoline intake and exhaust systems
- Repairs gasoline emission control systems

### Task 8: Diagnoses diesel engine support systems

**Sub-Tasks**

- Diagnoses diesel fuel delivery and injection systems
- Diagnoses diesel intake and exhaust systems
- Diagnoses diesel emission control systems

### Task 9: Repairs diesel engine support systems

**Sub-Tasks**

- Repairs diesel fuel delivery and injection systems
- Repairs diesel intake and exhaust systems
- Repairs diesel emission control systems

## MWA C: Diagnoses and Repairs Vehicle Module Communications Systems

### Task 10: Diagnoses vehicle networking systems

**Sub-Tasks**

- Reads diagnostic trouble codes (DTCs)
- Monitors data
- Tests system circuitry and components
- Interprets test results

### Task 11: Repairs vehicle networking systems

**Sub-Tasks**

- Updates component software
- Replaces components
- Repairs system circuitry and components
- Verifies vehicle module communications system repair

## MWA D: Diagnoses and Repairs Driveline Systems

### Task 12: Diagnoses driveline systems

**Sub-Tasks**

- Diagnoses drive shafts and axles
- Diagnoses manual transmissions and transaxles
- Diagnoses automatic transmissions and transaxles
- Diagnoses clutches
- Diagnoses transfer cases
- Diagnoses final drive assemblies

### Task 13: Repairs driveline systems

**Sub-Tasks**

- Repairs drive shafts and axles
- Repairs manual transmissions and transaxles
- Repairs automatic transmissions and transaxles
- Repairs clutches
- Repairs transfer cases
- Repairs final drive assemblies

## MWA E: Diagnoses and Repairs Electrical and Comfort Control Systems

### Task 14: Diagnoses electrical systems and components

**Sub-Tasks**

- Diagnoses basic wiring and electrical systems
- Diagnoses starting/charging systems and low voltage (12 volt) batteries
- Diagnoses lighting and wiper systems
- Diagnose entertainment systems
- Diagnoses electrical options and accessories
- Diagnoses instrumentation and information displays
- Diagnoses advanced driver assistance system (ADAS) components

### Task 15: Repairs electrical systems and components

**Sub-Tasks**

- Repairs basic wiring and electrical systems
- Repairs starting/charging systems and low voltage (12 volt) batteries
- Repairs lighting and wiper systems
- Repairs entertainment systems
- Repairs electrical options and accessories
- Repairs instrumentation and information displays
- Repairs advanced driver assistance system (ADAS) components

### Task 16: Diagnoses heating, ventilation and air conditioning (HVAC) and comfort control systems

**Sub-Tasks**

- Diagnoses air flow control systems
- Diagnoses refrigerant systems
- Diagnoses heating systems

### Task 17: Repairs heating, ventilation and air conditioning (HVAC) and comfort control systems

**Sub-Tasks**

- Repairs air flow control systems
- Repairs refrigerant systems
- Repairs heating systems

## MWA F: Diagnoses and Repairs Steering, Suspension, Braking and Control Systems, Tires, Hubs and Wheel Bearings

### Task 18: Diagnoses steering and suspension, braking, control systems, tires, wheels, hubs and wheel bearings

#### Sub-Tasks

- Diagnoses steering, suspension and control systems
- Diagnoses braking and control systems
- Diagnoses tires, wheels, hubs and wheel bearings
- Diagnoses advanced driver assistance system (ADAS) components related to steering, suspension and braking systems

### Task 19: Repairs steering, suspension, braking and control systems, tires, wheels, hubs and wheel bearings

#### Sub-Tasks

- Repairs steering, suspension and control systems
- Repairs braking and control systems
- Repairs tires, wheels, hubs and wheel bearings
- Repairs advanced driver assistance system (ADAS) components related to steering, suspension and braking systems

## MWA G: Diagnoses and Repairs Restraint Systems, Body Components, Accessories and Trim

### Task 20: Diagnoses restraint systems, body components, accessories and trim

#### Sub-Tasks

- Diagnoses restraint systems
- Diagnoses wind noises, rattles and water leaks
- Diagnoses interior and exterior components, accessories and trim
- Diagnoses latches, locks and movable glass

### Task 21: Repairs restraint systems, body components, accessories and trim

#### Sub-Tasks

- Repairs restraint systems
- Repairs wind noises, rattles and water leaks
- Repairs interior and exterior components, accessories and trim
- Repairs latches, locks and movable glass

## MWA H: Diagnoses and Repairs Hybrid and Electric Vehicles (EV) Systems

### Task 22: Diagnoses hybrid and EV

**Sub-Tasks**

- Diagnoses hybrid vehicle systems
- Diagnoses electric vehicle (EV) systems
- Diagnoses high voltage batteries
- Diagnoses hybrid and electric vehicle (EV) HVAC systems

### Task 23: Repairs hybrid and Electric vehicle (EV) systems

**Sub-Tasks**

- 
- Repairs hybrid vehicle systems
- Repairs electric vehicle (EV) systems
- Services high voltage batteries

## Create a Study Plan

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As you prepare for your exam, it is important to plan a schedule. The following two tables will help you stay on track.

The first table is a “**Weekly Study Plan.**” In this table list the areas you will focus your study for each day. You should include items you need to review as well as items you need to study. Remember, more time will be needed for study in areas you find difficult, whereas you may only require review in areas you are more familiar with. As you work through the RSOS sub-task list you can start to fill in this table.

The second table is a “**Study Time Table.**” It is important to create a study schedule where you determine the best days of the week and times of day for you to study.

Print several copies of these tables and fill out for each week of study. It is important to stick to your study schedule.

**Weekly Study Plan for Week of: \_\_\_\_\_**

	<b>Area of Study 1</b>	<b>Area of Study 2</b>	<b>Area of Study 3</b>	<b>Area of Study 4</b>	<b>Area of Study 5</b>	<b>Area of Study 6</b>
<b>Mon.</b>						
<b>Tues.</b>						
<b>Wed.</b>						
<b>Thu.</b>						
<b>Fri.</b>						
<b>Sat.</b>						
<b>Sun.</b>						

**Study Time Table for Week of: \_\_\_\_\_**

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00 AM - 9:00 AM							
9:00 AM - 10:00 AM							
10:00 AM - 11:00 AM							
11:00 AM - 12:00 Noon							
12:00 Noon - 1:00 PM							
1:00 PM - 2:00 PM							
2:00 PM - 3:00 PM							
3:00 PM - 4:00 PM							
4:00 PM - 5:00 PM							
5:00 PM - 6:00 PM							
6:00 PM - 7:00 PM							
7:00 PM - 8:00 PM							

# Resources - Websites

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Study information can be drawn from a variety of sources. A sample list of study materials (websites and books) is provided below. These and other helpful resources may be found in a local college bookstore, on the internet, or at your place of employment. You may also be able to borrow them from an apprentice or journeyperson in your trade.

## Study Strategies and Exam Preparation Guide

The *Study Strategies & Exam Preparation Guide* is meant to be used in conjunction with this study guide. It provides direction and information on such areas as study habits, test preparation and test taking techniques.

<https://www.gov.nl.ca/atcd/files/Study-Strategies-and-Exam-Prep-Guide-November-2025.pdf>

## Plan of Training (POT)

A *Provincial Plan of Training* details the full scope of learning for a particular occupation, including both technical training competencies and industry experiences necessary to write a Red Seal exam (and complete the requirements for Red Seal Certification), or to write a provincial examination. The Plan of Training is based on the RSOS.

<https://www.gov.nl.ca/atcd/designated-trades/pots-aacs/>

## Red Seal Website

**Red Seal** is a program that sets common standards to evaluate the skills of tradespeople across Canada. It is a partnership between the Federal Government and the provinces/territories.

The Red Seal model has been based on the National Occupational Analyses (NOA) which supports the development of multiple-choice examinations. A new Red Seal Occupational Standard (RSOS) was introduced in 2015 and is taking the place of the NOA.

<http://www.red-seal.ca/>

## Automotive Service Technician PRACTICE Exam

This is **NOT** a Red Seal exam. This is a practice exam provided by the Red Seal program. It was developed using similar question types to that of a Red Seal exam. The exam is intended to be used for self-assessment in preparation for writing a Red Seal Exam.

<http://www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=23>

## Red Seal Exam Self-Assessment Guide

Use this self-assessment tool to rate your own understanding and experience with the tasks of the trade that are on the Red Seal examination:

[https://www.red-seal.ca/\\_conf/assets/custom/docms/auto-serv-tech/self-assessment.pdf](https://www.red-seal.ca/_conf/assets/custom/docms/auto-serv-tech/self-assessment.pdf)

## Acronyms

The Red Seal website lists Acronyms which will be helpful in preparing for your Red Seal exam:

[http://www.red-seal.ca/trades/autoservtech/2016rs.4s\\_.1pp.1\\_.1cr.4nym-eng.html](http://www.red-seal.ca/trades/autoservtech/2016rs.4s_.1pp.1_.1cr.4nym-eng.html)

## List of Tools and Equipment

The Red Seal website lists Tools and Equipment which will be helpful in preparing for your Red Seal exam:

[http://www.red-seal.ca/trades/autoservtech/2016rs.4s\\_.1ppb\\_t.4.4ls-eng.html](http://www.red-seal.ca/trades/autoservtech/2016rs.4s_.1ppb_t.4.4ls-eng.html)

## Glossary of Terms

The Red Seal website lists a Glossary of Terms which will be helpful in preparing for your Red Seal exam:

[http://www.red-seal.ca/trades/autoservtech/2016rs.4s\\_.1ppc\\_gl.4ss.1ry-eng.html](http://www.red-seal.ca/trades/autoservtech/2016rs.4s_.1ppc_gl.4ss.1ry-eng.html)

## Resources – Book List

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The books listed below can help you obtain information on specific topics. It is not necessary to use these books specifically, as you may find others that will be equally beneficial.

**If you wish to obtain any of the resources listed below, here is the reference information:**

- Automotive Technology: A Systems Approach*, 1<sup>st</sup> edition, Thomson Nelson, 2007, Erjavec. J., Restoule, M., and Playter, A., ISBN 0176104399
- Automotive Technology: Principles, Diagnosis, and Service*, Pearson Prentice Hall, 2006, Davely, R., Halderman J.D., Marchant, J. and Mitchell, Chase D., ISBN 0131248901
- Automotive Technology: A Systems Approach*, 5<sup>th</sup> edition, Thomson Nelson, 2010, Erjavec, J., ISBN-10: 1428311491
- Today's Technician: Basic Automotive Service and Systems*, 4<sup>th</sup> edition, Thomson Nelson, 2009, Owne, C.E., ISBN-10: 1435453840
- Customer Service: A Practical Approach*, 4th edition, Pearson Prentice Hall, 2006, Harris, E.K., ISBN 0131989375
- Practical Problems in Mathematics for Automotive Technicians*, Delmar Gengage Learning, 2008, Moore, G., ISBN 0827346220
- Canadian Automotive Service Technician: Certificate of Qualification Test Preparation*, 2<sup>nd</sup> edition, Centennial College Press, 2007, Bennett, S., and Weatherhead, D., ISBN 9780919852617

## **Disclaimer**

Various external resources (websites, textbooks) have been listed in this study guide to assist an individual in preparing to write a Red Seal Exam. This does not mean the Department of Education and Early Childhood Development, Newfoundland and Labrador endorses the material or that these are recommended as the best resources. There may be other resources of equal or greater value to an individual preparing for a Red Seal exam. The Department of Education and Early Childhood Development has no control over the content of external textbooks or websites listed. No responsibility is assumed for the accuracy of the material.

## **Conclusion**

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We hope this guide has provided you with some useful tools as you prepare for your Red Seal exam. If you have any questions regarding your Red Seal exam please contact your regional office (*see Appendix A for a list of regional offices*).

We appreciate your comments and feedback regarding the usefulness of this study guide. If you have any comments or suggestions, we welcome your feedback. The feedback form at the end of this guide can be used for this purpose.

## Appendix A: Regional Offices

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If you have any questions regarding your Red Seal exam, please contact one of the following regional offices:

Department of Education and Early Childhood Development  
Apprenticeship and Trades Certification Division  
Toll Free: 1-877-771-3737

<https://www.gov.nl.ca/atcd/contact-us/staff-listing-and-office-locations/>

Corner Brook
1-3 Union Street Aylward Building, 2 <sup>nd</sup> Floor Corner Brook, NL A2H 5M7  Telephone: (709) 637-2366 Facsimile: (709) 637-2519

Grand Falls-Windsor
42 Hardy Avenue Grand Falls-Windsor, NL A2A 2J9  Telephone: (709) 292-4215 Facsimile: (709) 292-4502

Clarenville
45 Tilley's Road Clarenville, NL A5A 1Z4  Telephone: (709) 466-3982 Facsimile: (709) 466-3987

St. John's
P.O. Box 8700 1170 Topsail Road Mount Pearl, NL A1B 4J6  Telephone: (709) 729-2729 Facsimile: (709) 729-5878

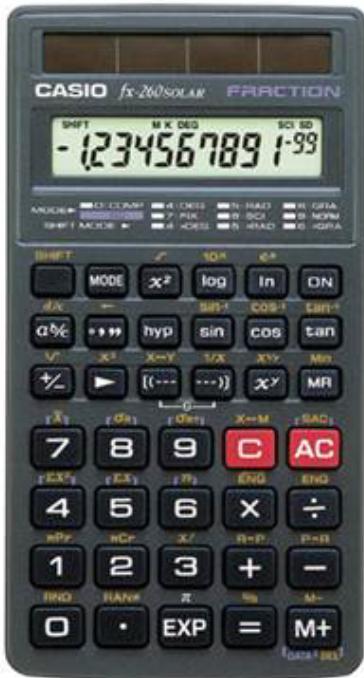
Happy Valley – Goose Bay
163 Hamilton River Road Bursey Building Happy Valley-Goose Bay, NL A0P 1E0  Telephone: (709) 896-6348 Facsimile: (709) 896-3733

## Appendix B: Calculator Use

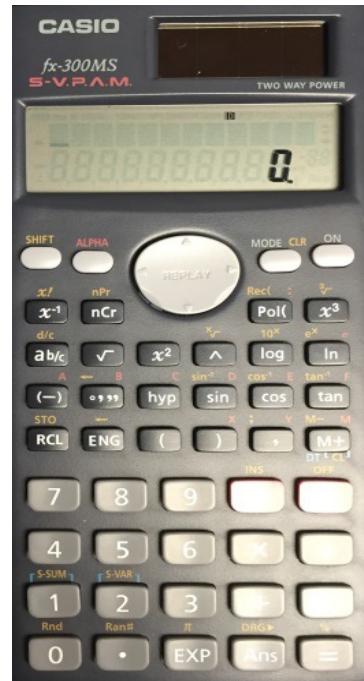
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The picture below shows a calculator with the same functions as the one you will be provided with during your exam. It is advisable to borrow or purchase one with similar functions so that you can familiarize yourself with it before you write your exam.

**Casio FX-260**



**Casio FX-300 MS**



## ***Appendix C: Answer Sheet Example***

With your exam you will be given an answer sheet similar to the one below. When answering multiple choice questions be sure to fill the circle completely and fill the circle that corresponds to the question on the exam.

KEY ID <b>A B C D</b>		<input type="checkbox"/> RESCORE		<input type="checkbox"/> MULTIPLE ANSWER SCORING	
This sheet always uses the "Total Only" scoring option.					
FEED IN THIS DIRECTION		T F		T F	
1	A B C D E	26	A B C D E	51	A B C D E
2	A B C D E	27	A B C D E	52	A B C D E
3	A B C D E	28	A B C D E	53	A B C D E
4	A B C D E	29	A B C D E	54	A B C D E
5	A B C D E	30	A B C D E	55	A B C D E
6	A B C D E	31	A B C D E	56	A B C D E
7	A B C D E	32	A B C D E	57	A B C D E
8	A B C D E	33	A B C D E	58	A B C D E
9	A B C D E	34	A B C D E	59	A B C D E
10	A B C D E	35	A B C D E	60	A B C D E
11	A B C D E	36	A B C D E	61	A B C D E
12	A B C D E	37	A B C D E	62	A B C D E
13	A B C D E	38	A B C D E	63	A B C D E
14	A B C D E	39	A B C D E	64	A B C D E
15	A B C D E	40	A B C D E	65	A B C D E
16	A B C D E	41	A B C D E	66	A B C D E
17	A B C D E	42	A B C D E	67	A B C D E
18	A B C D E	43	A B C D E	68	A B C D E
19	A B C D E	44	A B C D E	69	A B C D E
20	A B C D E	45	A B C D E	70	A B C D E
21	A B C D E	46	A B C D E	71	A B C D E
22	A B C D E	47	A B C D E	72	A B C D E
23	A B C D E	48	A B C D E	73	A B C D E
24	A B C D E	49	A B C D E	74	A B C D E
25	A B C D E	50	A B C D E	75	A B C D E
FEED IN THIS DIRECTION		T F		T F	
NUMBER CORRECT		COMBINED POINTS EARNED		STUDENT ID NUMBER	
PERCENT CORRECT		COMBINED PERCENT CORRECT		200 ITEM	
ROSTER NUMBER		LETTER GRADE		MARKING INSTRUCTIONS	
SCORE RESCORE		SCORE RESCORE		Use a No. 2 Pencil	
NAME _____					
SUBJECT _____					
PERIOD _____ DATE _____					
FEED IN THIS DIRECTION					
ANSWER KEY INFO.					
# OF KEYS ITEM COUNT					
PERFORMANCE ASSESSMENT					
% OF TOTAL SCORE POINTS EARNED					
00 = 100%					
EQUALITY P.T. VARIETY					
Bar Code					

## **Feedback Form**

### **Study Guide – Automotive Service Technician**

Please answer the following:

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- (1) This Study Guide is a useful tool for exam preparation.  
 strongly agree     agree     disagree     strongly disagree
  
- (2) The topics contained in the guide are arranged in a logical order.  
 strongly agree     agree     disagree     strongly disagree
  
- (3) The design and format of the guide caught my attention.  
 strongly agree     agree     disagree     strongly disagree
  
- (4) The instructions throughout the guide are clear and to the point.  
 strongly agree     agree     disagree     strongly disagree
  
- (5) The resources listed in this guide are suitable and valuable.  
 strongly agree     agree     disagree     strongly disagree
  
- (6) The guide should contain more information.  
 strongly agree     agree     disagree     strongly disagree

Suggested information/resources to include:

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Additional Comments:

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**Please complete this form and return via fax or mail to the following:**

Department of Education and Early Childhood Development  
Apprenticeship and Trades Certification Division  
Standards and Curriculum Unit  
45 Tilley's Road, Clarenville, NL A5A 1Z4  
Fax: (709) 466-3987

Department of Education and Early Childhood Development  
Apprenticeship and Trades Certification Division

