

# APPRENTICESHIP & CERTIFICATION

## Study Guide Construction Electrician



**Apprenticeship and Certification**

**Study Guide**

**Construction Electrician**

**(Based on Red Seal Occupational Standard – RSOS 2022)**

Government of Newfoundland and Labrador  
Department of Immigration, Population Growth and Skills

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## Introduction

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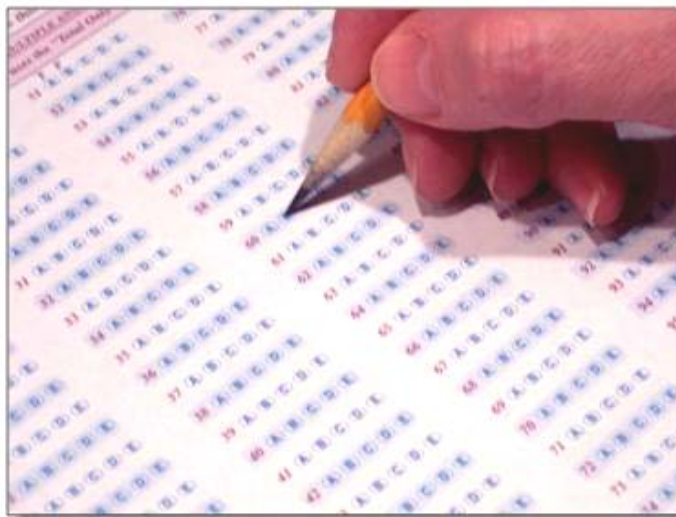
This Study Guide has been developed by the Newfoundland and Labrador Department of Immigration, Population Growth and Skills, Apprenticeship and Trades Certification Division, to assist apprentices and trade qualifiers as they prepare to write the Red Seal Exam. Red Seal Exams are available for all Red Seal trades. For a list of Red Seal trades please refer to the Department of Immigration, Population Growth and Skills 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*)
- Canadian Electrical Code Book
- 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

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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).

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. You need to make a 2" diameter round hole in a piece of 5/8" plywood. Which tool is best suited for this application?

- A. A drill with an auger bit
- B. A reciprocating saw
- C. A drill with a hole saw
- D. A hacksaw



2. You have just finished connecting a new three-phase squirrel cage induction motor. Your foreman asks you to "bump" the motor. What will this test indicate?

- A. The stability of the motor mounts
- B. The resistance of the windings
- C. The amount of inrush current
- D. The direction of rotation



3. Which of the following is one disadvantage of an autotransformer?

- A. Primary current is limited
- B. Secondary current is excessively high
- C. Impedance increases with heat
- D. There is no primary-secondary electrical isolation



### Level 2 Examples:

1. When installing single conductor metal-sheathed cables which of the following is an acceptable method for reducing the sheath current?

- A. Bond the sheath to all non-current carrying components
- B. Bond all of the sheaths together with #6 SWG bare copper
- C. Float the sheaths at the load end
- D. Use the sheath as the bonding conductor



2. When is it permitted to use the neutral conductor to bond equipment to ground?

- A. Only if #2 AWG or larger conductors are installed
- B. Only if the neutral conductor is bare
- C. Only on the supply side of the service connection
- D. Only if it is not practical to ground the equipment



3. A motor has an FLA of 112 A. What is the smallest size RW90 XLPE conductor that can be run from the fused disconnect to the motor if flexible metallic conduit is used as the wiring method?

- A. 2 AWG
- B. 1 AWG
- C. 0 AWG
- D. 00 AWG



### Level 3 Examples:

1. Your customer has a machine that requires a fan to continue running for 30 seconds after a motor is shut off. Which of the following components will you need to use to build the control circuit for this machine?

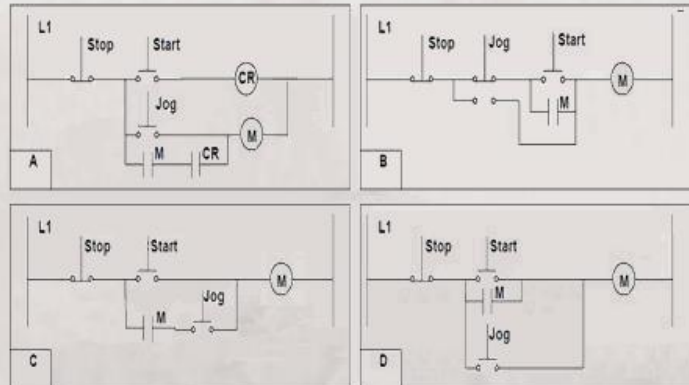
- A. On-delay timer
- B. Off-delay timer
- C. Normally closed timer
- D. Normally open timer





2. Which of the following diagrams represents a circuit that will allow both starting and jogging?

- A. A
- B. B
- C. C
- D. D



3. A motor nameplate gives the following information

Voltage: 600 V	Phase: 3
Current: 25.7 A	Design: B
Ser Fac: 1.15	Type: P
Class: F	Duty: Cont

Which of the following is the proper size of time of delay fuse for the feeders that supply three of these motors if all three motors start simultaneously?

- A. 45 A
- B. 100 A
- C. 135 A
- D. 150 A



Source of questions:

<http://www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=51>

# 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.

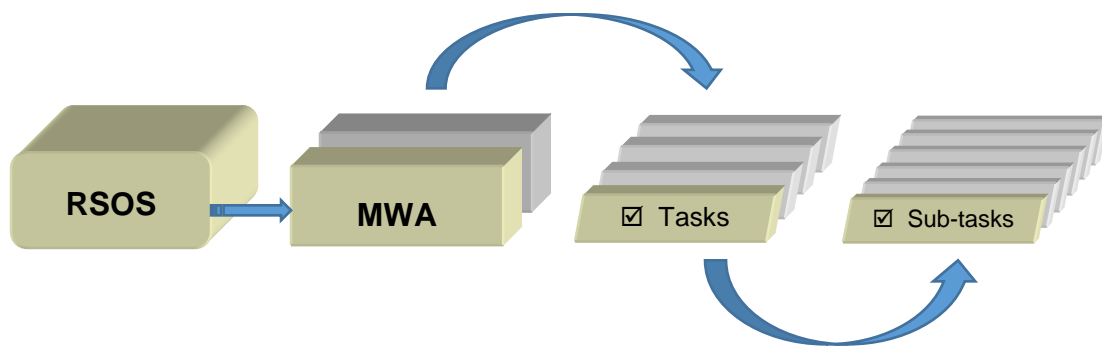
The RSOS was introduced in 2015 and is now taking the place of the NOA. Each RSOS or NOA sets the standard for a Red Seal trade. The Red Seal Examination is based on the Red Seal Standard.

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*).

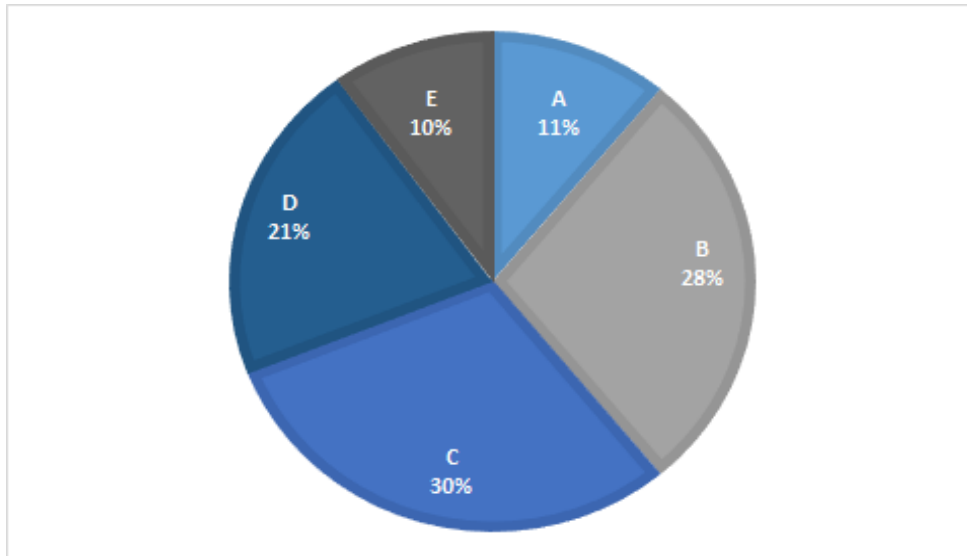


The NOA will continue to be used as the occupational standard for trades that do not yet have an RSOS developed.

## 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, 11% of the questions on the **Construction Electrician** Exam will be based on **MWA A**.

### CONSTRUCTION ELECTRICIAN



MWA Titles			
<b>MWA A</b>	Performs Common Occupational Skills	<b>MWA D</b>	Installs, Services and Maintains Motors and Control Systems
<b>MWA B</b>	Installs, Services and Maintains Generating, Distribution and Service Systems	<b>MWA E</b>	Installs, Services and Maintains Signaling and Communication Systems
<b>MWA C</b>	Installs, Services and Maintains Wiring Systems		

## Exam Breakdown

The **Construction Electrician** exam currently has 100 questions. The following table shows a breakdown of the approximate number of questions that come from each RSOS MWA. It is important to note that the 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).

		# of Questions
<b>MWA A</b>	<b>Performs Common Occupational Skills</b>	<b>11</b>
<b>Task 1</b>	Performs safety-related functions	
<b>Task 2</b>	Uses tools and equipment	
<b>Task 3</b>	Organizes work	
<b>Task 4</b>	Fabricates and installs support components	
<b>Task 5</b>	Commissions and decommissions electrical systems	
<b>Task 6</b>	Uses communication and mentoring techniques	
<b>MWA B</b>	<b>Installs, Services and Maintains Generating, Distribution and Service Systems</b>	<b>28</b>
<b>Task 7</b>	Installs, services and maintains consumer/supply services and metering equipment	
<b>Task 8</b>	Installs, services and maintains protection devices	
<b>Task 9</b>	Installs, services and maintains power distribution equipment	
<b>Task 10</b>	Installs, services and maintains power conditioning, uninterruptible power supply (UPS) and surge suppression systems	
<b>Task 11</b>	Installs, services and maintains bonding, grounding, ground fault protection & detection systems	
<b>Task 12</b>	Installs, services and maintains power generation and conversion systems	
<b>Task 13</b>	Installs, services and maintains renewable energy generating and storage systems	
<b>Task 14</b>	Installs, services and maintains high voltage systems	
<b>Task 15</b>	Installs, services and maintains transformers	
<b>MWA C</b>	<b>Installs, Services and Maintains Wiring Systems</b>	<b>30</b>
<b>Task 16</b>	Installs, services and maintains raceways, conductors, cables and enclosures	
<b>Task 17</b>	Installs, services and maintains branch circuitry and devices	
<b>Task 18</b>	Installs, services and maintains heating, ventilating and air-conditioning (HVAC) systems	
<b>Task 19</b>	Installs, services and maintains electric heating systems	
<b>Task 20</b>	Installs, services and maintains exit and emergency lighting systems	
<b>Task 21</b>	Installs, services and maintains cathodic protection systems	
<b>MWA D</b>	<b>Installs, Services and Maintains Motors and Control Systems</b>	<b>21</b>
<b>Task 22</b>	Installs, services and maintains motor starters and controls	
<b>Task 23</b>	Installs, services and maintains drives	
<b>Task 24</b>	Installs, services and maintains motors	
<b>Task 25</b>	Installs, programs, services and maintains automated control systems	
<b>MWA E</b>	<b>Installs, Services and Maintains Signalling and Communication Systems</b>	<b>10</b>
<b>Task 26</b>	Installs, services and maintains signalling systems	
<b>Task 27</b>	Installs, services and maintains communication systems	
<b>Task 28</b>	Installs, services and maintains integrated control systems	
	<b>Total</b>	<b>100</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 checkmark (✓) 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 2022**  
**Construction Electrician**

**MWA A: Performs Common Occupational Skills**

**Task 1: Performs Safety-Related Functions**

- Sub-Tasks**
- Uses personal protective equipment (PPE) and safety equipment
  - Maintains safe work environment
  - Performs lock-out and tag-out procedures

**Task 2: Uses Tools and Equipment**

- Sub-Tasks**
- Uses common and specialty tools and equipment
  - Uses access equipment
  - Uses rigging, hoisting and lifting equipment

**Task 3: Organizes Work**

- Sub-Tasks**
- Interprets plans, drawings and specifications
  - Organizes materials and supplies
  - Plans project tasks and procedures
  - Prepares worksite
  - Finalizes required documentation

**Task 4: Fabricates and Installs Support Components**

- Sub-Tasks**
- Fabricates support structures
  - Installs brackets, hangers and fasteners
  - Installs seismic restraint systems

**Task 5: Commissions and Decommissions Electrical Systems**

- Sub-Tasks**
- Performs start-up and shutdown procedures
  - Performs commissioning and decommissioning of systems

**Task 6: Uses Communication and Mentoring Techniques**

- Sub-Tasks**
- Uses communication techniques
  - Uses mentoring techniques

## MWA B: Installs, Services and Maintains Generating, Distribution and Service Systems

### Task 7: Installs, Services and Maintains Consumer/Supply Services and Metering Equipment

#### Sub-Tasks

- Installs single-phase consumer/supply services and metering equipment
- Installs three-phase consumer/supply services and metering equipment
- Performs servicing and maintenance of single-phase consumer/supply services & metering equipment
- Performs servicing and maintenance of three-phase consumer/supply services & metering equipment

### Task 8: Installs, Services and Maintains Protection Devices

#### Sub-Tasks

- Installs over-current protection devices
- Installs ground fault, arc fault and surge protection devices
- Performs servicing and maintenance of protection devices

### Task 9: Installs, Services and Maintains Power Distribution Equipment

#### Sub-Tasks

- Installs power distribution equipment
- Performs servicing and maintenance of power distribution equipment

### Task 10: Installs, Services and Maintains Power Conditioning, Uninterruptible Power Supply (UPS) and Surge Suppression Systems

#### Sub-Tasks

- Installs power conditioning, UPS and surge suppression systems
- Performs servicing & maintenance of power conditioning, UPS & surge suppression systems

### Task 11: Installs, Services and Maintains Bonding and Grounding, Ground Fault Protection and Detection Systems

#### Sub-Tasks

- Installs bonding and grounding systems
- Installs ground fault protection and detection systems
- Installs lightning protection systems
- Performs servicing and maintenance of bonding and grounding systems

### Task 12: Installs, Services and Maintains Power Generation and Conversion Systems

#### Sub-Tasks

- Installs alternating current (AC) generating systems
- Performs servicing and maintenance of AC generating systems
- Installs direct current (DC) generating and conversion systems
- Performs servicing and maintenance of DC generating and conversion systems

### Task 13: Installs, Services and Maintains Renewable Energy Generating and Storage Systems

#### Sub-Tasks

- Installs renewable energy generating and storage systems
- Performs servicing and maintenance of renewable energy generating and storage systems

## MWA B: Installs, Services and Maintains Generating, Distribution and Service Systems (Cont'd)

### Task 14: Installs, Services and Maintains High Voltage Systems

#### Sub-Tasks

- Installs high voltage equipment
- Installs high voltage cables
- Performs servicing and maintenance of high voltage systems

### Task 15: Installs, Services and Maintains Transformers

#### Sub-Tasks

- Installs extra-low voltage transformers
- Installs low voltage single-phase transformers
- Installs low voltage three-phase transformers
- Installs high voltage transformers
- Performs servicing and maintenance of transformers

## MWA C: Installs, Services and Maintains Wiring Systems

### Task 16: Installs, Services and Maintains Raceways, Conductors, Cables and Enclosures

#### Sub-Tasks

- Installs conductors and cables
- Installs conduit and fittings
- Installs raceways
- Installs boxes and enclosures
- Performs servicing and maintenance of raceways, cables and enclosures

### Task 17: Installs, Services and Maintains Branch Circuitry and Devices

#### Sub-Tasks

- Installs luminaires
- Installs wiring devices
- Installs lighting controls
- Installs lighting standards
- Performs servicing of branch circuitry
- Installs, services and maintains airport visual aid systems
- Installs, services and maintains traffic signal lights and controls

### Task 18: Installs, Services and Maintains Heating, Ventilating and Air-Conditioning (HVAC) Systems

#### Sub-Tasks

- Connects HVAC systems and associated equipment
- Installs HVAC controls
- Performs servicing and maintenance of HVAC systems and controls

### Task 19: Installs, Services and Maintains Electric Heating Systems

#### Sub-Tasks

- Installs electric heating systems
- Installs electric heating system controls
- Performs servicing and maintenance of electric heating systems and controls

## MWA C: Installs, Services and Maintains Wiring Systems (Cont'd)

### Task 20: Installs, Services and Maintains Exit and Emergency Lighting Systems

#### Sub-Tasks

- Installs exit and emergency lighting
- Performs servicing and maintenance of exit and emergency lighting systems

### Task 21: Installs, Services and Maintains Cathodic Protection Systems

#### Sub-Tasks

- Installs cathodic protection systems
- Performs servicing and maintenance of cathodic protection systems

## MWA D: Installs, Services and Maintains Motors and Control Systems

### Task 22: Installs, Services and Maintains Motor Starters and Controls

#### Sub-Tasks

- Installs motor starters
- Performs servicing and maintenance of motor starters
- Installs motor control devices
- Performs servicing and maintenance of of motor controls

### Task 23: Installs, Services and Maintains Drives

#### Sub-Tasks

- Installs AC drives
- Performs servicing and maintenance of AC drives
- Installs DC drives
- Performs servicing and maintenance of DC drives

### Task 24: Installs, Services and Maintains Motors

#### Sub-Tasks

- Installs single-phase motors
- Performs servicing and maintenance of single-phase motors
- Installs three-phase motors
- Performs servicing and maintenance of three-phase motors
- Installs DC motors
- Performs servicing and maintenance of DC motors

### Task 25: Installs, Programs, Services and Maintains Automated Control Systems

#### Sub-Tasks

- Installs automated control systems
- Performs servicing and maintenance of automated control systems
- Programs and configures automated control systems

## MWA E: Installs, Services and Maintains Signaling and Communication Systems

### Task 26: Installs, Services and Maintains Signaling Systems

#### Sub-Tasks

- Installs fire alarm systems
- Performs servicing and maintenance of fire alarm systems
- Installs security and surveillance systems
- Performs servicing and maintenance of security and surveillance systems

### Task 27: Installs, Services and Maintains Communication Systems

#### Sub-Tasks

- Installs voice/data/video (VDV) and community antenna television (CATV) systems
- Installs public address (PA) and intercom systems
- Installs nurse call systems
- Performs servicing and maintenance of communication systems

### Task 28: Installs, Services and Maintains Integrated Control Systems

#### Sub-Tasks

- Installs building automation systems
- Installs building control systems
- Performs servicing and maintenance of integrated control systems



## 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:** \_\_\_\_\_

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

**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 journey person 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/apprentices-youth/self-study/study-guides/>

### 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.

POT Website: <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.

Red Seal Website: <http://www.red-seal.ca/>

### Construction Electrician PRACTICE Exam

This is **NOT** a Red Seal exam. This is a practice exam provided by the Red Seal Standards 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=51>

### 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/const-elect/self-assessment.pdf](https://www.red-seal.ca/_conf/assets/custom/docms/const-elect/self-assessment.pdf)

### Glossary of Terms

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

<https://www.red-seal.ca/eng/trades/constelectric/app-c.shtml>

### Acronyms

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

<https://www.red-seal.ca/eng/trades/constelectric/app-a.shtml>

### List of Tools and Equipment

The Red Seal website also shows a list of Tools and Equipment which will be helpful in preparing for the exam:

<https://www.red-seal.ca/eng/trades/constelectric/app-b.shtml>

## Resources – Book List

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You can use this list to 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 above, here is the reference information:**

- Canadian Electrical Code*, Canadian Standards Association, 2009, ISBN 1553246926\*\*\***2012 version is being used now.**
- Delmar's Standard Textbook of Electricity*, 4<sup>th</sup> Edition, Herman, Stephen L. ISBN 1418065803
- Electrical Motors Controls for Integrated Systems*, 3<sup>rd</sup> Edition, Rockis, Gary J.Mazur. Glen A, ISBN 0826912079
- Electrical Motors Controls for Integrated Systems (workbook)*, 3<sup>rd</sup> Edition, ISBN 0826912084
- Electrical Wiring Commercial*, 5<sup>th</sup> Canadian Edition, Mullin.Miller.Stephenson.Filice. Maltese.Marchetti, ISBN 0176502165
- Electrical Wiring Industrial*, 3<sup>rd</sup> Canadian Edition, Smith.Herman.Miller.Stephenson.Branch.Granelli, ISBN 0176502149
- Electrical Wiring Residential*, 5<sup>th</sup> Canadian Edition, Mullin.Miller.Stephenson.Branch.Todd.Trineer, ISBN 0176502157
- Industrial Motor Control*, 5<sup>th</sup> Edition, Herman, Stephen L, ISBN 1401838022
- IPT's Crane and Rigging Handbook*, 4<sup>th</sup> Edition, Garby, Roland G, ISBN 0920855016
- IPT's Electrical Handbook*, 4<sup>TH</sup> Edition, Putz, Herb, ISBN 0920855229
- IPT's Safety First Handbook*, 3<sup>rd</sup> Edition, Basaraba, Bruce M, ISBN 02920855342



## 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 Immigration, Population Growth and Skills, 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 Immigration, Population Growth and Skills has no control over the content of external textbooks and websites listed, and 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 Immigration, Population Growth and Skills  
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

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Facsimile: (709) 729-5878

### Happy Valley – Goose Bay

163 Hamilton River Road  
Burse Building  
Happy Valley-Goose Bay, NL  
AOP 1E0

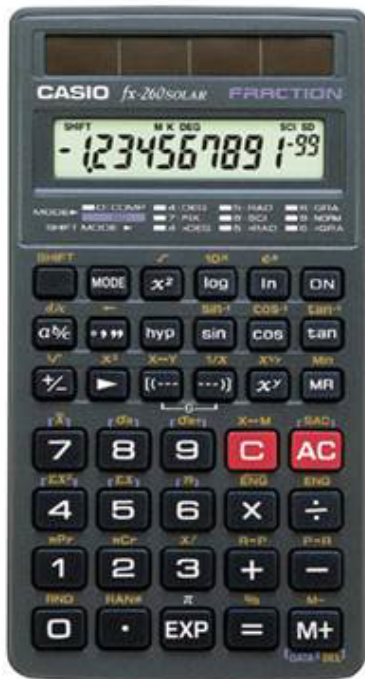
Telephone: (709) 896-6348  
Facsimile: (709) 896-3733

## Appendix B: Calculator Use

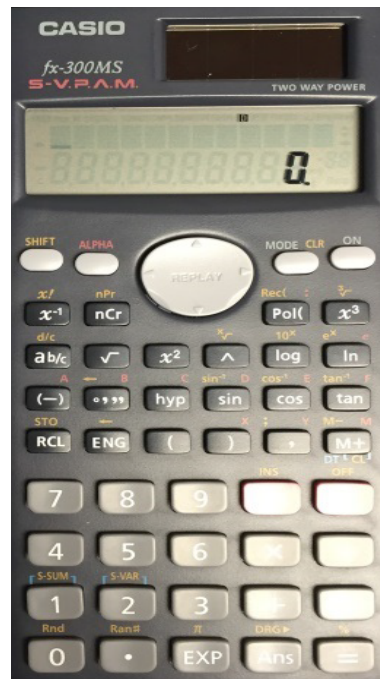
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The picture below shows a calculator with the same functions as the one you will be provided with during your exam. It is advisable to borrow or purchase one with similar functions so that you can familiarize yourself with it before you write your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

Dual readhead scanner  required  to score this sheet

KEY ID  
 A  B  C  D

SCORING & PRINTING OPTIONS:  
 RESCORE  MULTIPLE ANSWER SCORING  
 This sheet always uses the "Total Only" scoring option.

FEED IN THIS DIRECTION

1	T F	A B C D E	26	T F	A B C D E	51	T F	A B C D E	76	T F	A B C D E
2	A B C D E		27	A B C D E		52	A B C D E		77	A B C D E	
3	A B C D E		28	A B C D E		53	A B C D E		78	A B C D E	
4	A B C D E		29	A B C D E		54	A B C D E		79	A B C D E	
5	A B C D E		30	A B C D E		55	A B C D E		80	A B C D E	
6	A B C D E		31	A B C D E		56	A B C D E		81	A B C D E	
7	A B C D E		32	A B C D E		57	A B C D E		82	A B C D E	
8	A B C D E		33	A B C D E		58	A B C D E		83	A B C D E	
9	A B C D E		34	A B C D E		59	A B C D E		84	A B C D E	
10	A B C D E		35	A B C D E		60	A B C D E		85	A B C D E	
11	A B C D E		36	A B C D E		61	A B C D E		86	A B C D E	
12	A B C D E		37	A B C D E		62	A B C D E		87	A B C D E	
13	A B C D E		38	A B C D E		63	A B C D E		88	A B C D E	
14	A B C D E		39	A B C D E		64	A B C D E		89	A B C D E	
15	A B C D E		40	A B C D E		65	A B C D E		90	A B C D E	
16	A B C D E		41	A B C D E		66	A B C D E		91	A B C D E	
17	A B C D E		42	A B C D E		67	A B C D E		92	A B C D E	
18	A B C D E		43	A B C D E		68	A B C D E		93	A B C D E	
19	A B C D E		44	A B C D E		69	A B C D E		94	A B C D E	
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21	A B C D E		46	A B C D E		71	A B C D E		96	A B C D E	
22	A B C D E		47	A B C D E		72	A B C D E		97	A B C D E	
23	A B C D E		48	A B C D E		73	A B C D E		98	A B C D E	
24	A B C D E		49	A B C D E		74	A B C D E		99	A B C D E	
25	A B C D E		50	A B C D E		75	A B C D E		100	A B C D E	

ANSWER KEY INFO.  
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## Feedback Form

### Study Guide - Construction Electrician

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 Immigration, Population Growth and Skills  
Apprenticeship and Trades Certification Division  
Standards and Curriculum Unit  
45 Tilley's Road, Clarenville, NL A5A 1Z4  
Fax: (709) 466-3987

