

APPRENTICESHIP & CERTIFICATION

Study Guide Heavy Duty Equipment Technician



Apprenticeship and Certification

Study Guide

Heavy Duty Equipment Technician

(Based on 2014 NOA)

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

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Introduction

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 Inter-provincial (IP) Red Seal Exam. IP Exams are available for all Red Seal trades. For a list of Inter-provincial 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

Before the Exam

You must contact the nearest Apprenticeship and Trades Certification Divisional office to make request to write the IP 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 IP 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. What does an exhaust valve do?
 - A. Allows combustion gases to escape.
 - B. Allows for easier installation.
 - C. Allows oil to flow freely.
 - D. Allows for ring expansion.



2. Why adjust crossheads after reassembling an engine?

- A. To ensure proper exhausting occurs.
- B. To ensure both valves open simultaneously.
- C. To ensure the valve seat angle is maintained.
- D. To ensure maximum power is achieved.



3. How many U-bolt clips are required for 1.5 inch diameter rope?

- A. 7.
- B. 6.
- C. 5.
- D. 4.



Level 2 Examples:

1. If the flywheel to crankshaft alignment is not correct, what does it result in?

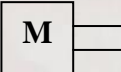
- A. Increased output horsepower.
- B. Slipping of the clutch.
- C. Excessive end play.
- D. Piston positioning being inaccurate.



2. What is the pour point, below zero of #1D winter fuel?

- A. 52.
- B. 44.
- C. 23.
- D. 17.



3. 

The above symbol indicates a(n)?

- A. Electric motor.
- B. Non-electric prime mover.
- C. Pneumatic pressure source.
- D. Hydraulic pressure source.



Level 3 Examples:

1. A diesel engine equipped with a governor has a high idle speed of 2150 rpm and a rated speed of 1995 rpm.

What is the speed droop percentage of this engine?

- A. 2.8.
- B. 7.2.
- C. 7.8.
- D. 8.7.



2. A diesel engine equipped with a governor has a high idle speed of 2125 rpm and a rated speed of 2075 rpm.

What is the speed droop percentage of this engine?

- A. 4.3.
- B. 6.4.
- C. 0.6.
- D. 2.4.



3. What should an Ohmmeter read when placed across a new fusible link?

- A. Almost zero.
- B. Infinity.
- C. 12 Volts.
- D. 24 Volts.



Source of questions:

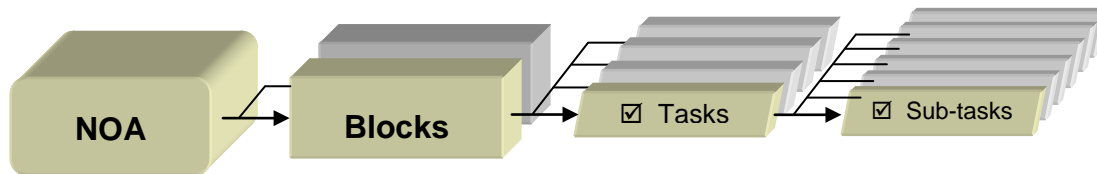
<https://www.red-seal.ca/eng/s.1mpl.2.2x.1mQ.5.2st.3.4ns.shtml?tid=101>

Exam Content

Understanding the *National Occupational Analysis (NOA)*

The NOA is a document used for Red Seal trades that describes the knowledge, skills and abilities required by a fully competent tradesperson working in that trade. The content for the IP Red Seal exam is based on the NOA. The NOA is an excellent tool to use as you study for the Red Seal exam. NOAs can be found at www.red-seal.ca.

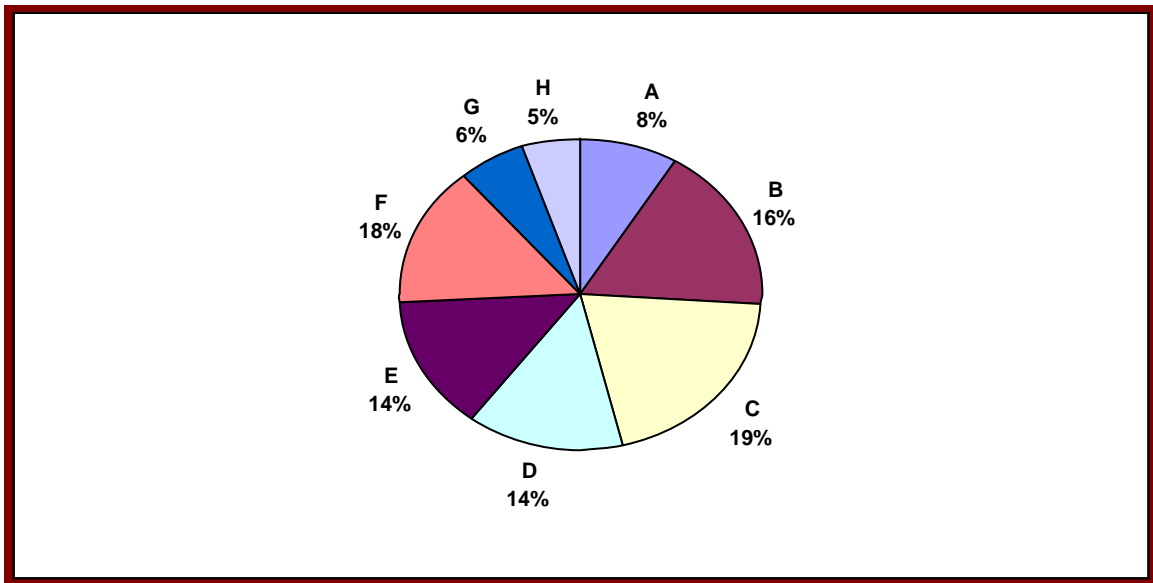
NOA material is organized into major content areas called **BLOCKS**. The blocks are further broken down into **TASKS** and **SUB-TASKS**.



NOA Pie Chart

The NOA Pie Chart presents the block percentages in the form of a pie chart which tells you the approximate number of questions from each block. For example, 8% of the questions on the **Heavy Duty Equipment Technician Exam** will be based on **Block A**.

HEAVY DUTY EQUIPMENT TECHNICIAN



Block Titles			
Block A	Common Occupational Skills	Block E	Steering, Suspension, Brake Systems, Wheel Assemblies and Undercarriage
Block B	Engines and Engine Support Systems	Block F	Electrical and Vehicle Management Systems
Block C	Hydraulic, Hydrostatic and Pneumatic Systems	Block G	Environmental Control Systems
Block D	Drive Train Systems	Block H	Structural Components, Accessories and Attachments

Exam Breakdown

The **Heavy Duty Equipment Technician** exam currently has 135 questions. The following table shows a breakdown of the number of questions that come from each NOA block. 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).

		# of Questions
Block A	Common Occupational Skills	11
Task 1	Uses and maintains tools and equipment	
Task 2	Performs general maintenance and inspections	
Task 3	Organizes work	
Task 4	Performs routine trade activities	
Block B	Engines and Engine Support Systems	21
Task 5	Diagnoses engines and engine support systems	
Task 6	Repairs engines and engine support systems	
Block C	Hydraulic, Hydrostatic and Pneumatic Systems	26
Task 7	Diagnoses hydraulic, hydrostatic and pneumatic systems	
Task 8	Repairs hydraulic, hydrostatic and pneumatic systems	
Block D	Drive Train Systems	18
Task 9	Diagnoses drive train systems	
Task 10	Repairs drive train systems	
Block E	Steering, Suspension, Brake Systems, Wheel Assemblies and Undercarriage	20
Task 11	Diagnoses steering, suspension, brake systems, wheel assemblies and undercarriage	
Task 12	Repairs steering, suspension, brake systems, wheel assemblies and undercarriage	
Block F	Electrical and Vehicle Management Systems	24
Task 13	Diagnoses electrical systems	
Task 14	Repairs electrical systems	
Task 15	Diagnoses electronic vehicle management systems	
Task 16	Repairs electronic vehicle management systems	
Block G	Environmental Control Systems	8
Task 17	Diagnoses environmental control systems	
Task 18	Repairs environmental control systems	
Block H	Structural Components, Accessories and Attachments	7
Task 19	Diagnoses structural components, accessories and attachments	
Task 20	Repairs structural components, accessories and attachments	
	Total	135

NOA Sub-tasks

The following *NOA Task Profile Checklist* outlines the blocks, tasks and sub-tasks for your trade. The IP Red Seal exam is written to test your knowledge and abilities regarding the sub-tasks in the NOA. 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 NOA 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 NOA for your trade.

**Task Profile Checklist
Based on 2014 NOA
Heavy Duty Equipment Technician**

Block A: Common Occupational Skills

Task 1: Uses and maintains tools and equipment

Sub-Tasks

- Maintains tools and equipment
- Uses hoisting and lifting equipment
- Operates access equipment
- Uses personal protective equipment (PPE) and safety equipment

Task 2: Performs general maintenance and inspections

Sub-Tasks

- Maintains fluids
- Services fasteners, sealing devices, adhesives and gaskets
- Services hoses, tubing, piping and fittings
- Services bearings and seals
- Services safety features
- Performs scheduled maintenance procedures
- Identifies operational faults
- Performs operational checkout

Task 3: Organizes work

Sub-Tasks

- Uses documentation and reference materials
- Completes documentation
- Communicates with others
- Prepares job action plan
- Maintains safe work environment

Task 4: Performs routine trade activities

Sub-Tasks

- Heats materials
- Cools materials
- Cuts materials
- Welds materials
- Cleans parts and materials

Block B: Engines and Engine Support Systems

Task 5: Diagnoses engines and engine support systems

Sub-Tasks

- Diagnoses base engine
- Diagnoses lubrication systems
- Diagnoses cooling systems
- Diagnoses intake and exhaust systems
- Diagnoses fuel systems
- Diagnoses engine control systems
- Diagnoses emission control systems

Task 6: Repairs engines and engine support systems

Sub-Tasks

- Repairs base engines
- Repairs lubrication systems
- Repairs cooling systems
- Repairs intake and exhaust systems
- Repairs fuel systems
- Repairs engine control systems
- Repairs emission control systems

Block C: Hydraulic Hydrostatic and Pneumatic Systems

Task 7: Diagnoses hydraulic, hydrostatic and pneumatic systems

Sub-Tasks

- Diagnoses hydraulic systems
- Diagnoses hydrostatic systems
- Diagnoses pneumatic systems

Task 8: Repairs hydraulic, hydrostatic and pneumatic systems

Sub-Tasks

- Repairs hydraulic systems
- Repairs hydrostatic systems
- Repairs pneumatic systems

Block D: Drive Train Systems

Task 9: Diagnoses drive train systems

Sub-Tasks

- Diagnoses clutch systems
- Diagnoses torque converters, fluid couplers and retarders
- Diagnoses driveline systems
- Diagnoses transmission and transfer case systems
- Diagnoses axle and differential systems
- Diagnoses final drive systems

Task 10: Repairs drive train systems

Sub-Tasks

- Repairs clutch systems
- Repairs torque converters, fluid couplers and retarders
- Repairs driveline systems
- Repairs transmission and transfer case systems
- Repairs axle and differential systems
- Repairs final drive systems

Block E: Steering, Suspension, Brake Systems, Wheel Assemblies and Undercarriage

Task 11: Diagnoses steering, suspension, brake systems, wheel assemblies and undercarriage

Sub-Tasks

- Diagnoses steering systems
- Diagnoses suspension systems
- Diagnoses brake systems
- Diagnoses wheel assemblies
- Diagnoses undercarriage systems

Task 12: Repairs steering, suspension, brake systems, wheel assemblies and undercarriage

Sub-Tasks

- Repairs steering systems
- Repairs suspension systems
- Repairs brake systems
- Repairs wheel assemblies
- Repairs undercarriage systems

Block F: Electrical and Vehicle Management Systems

Task 13: Diagnoses electrical systems

Sub-Tasks

- Diagnoses starting/charging systems and batteries
- Diagnoses electrical components, motors and accessories

Task 14: Repairs electrical systems

Sub-Tasks

- Repairs starting/charging systems and batteries
- Repairs electrical components, motors and accessories

Task 15: Diagnoses electronic vehicle management systems

Sub-Tasks

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

Task 16: Repairs electronic vehicle management systems

Sub-Tasks

- Updates component software
- Repairs components

Block G: Environmental Control Systems

Task 17: Diagnoses environmental control systems

Sub-Tasks

- Diagnoses heating systems
- Diagnoses ventilation and filtration systems
- Diagnoses air conditioning systems
- Diagnoses sound suppression systems

Task 18: Repairs environmental control systems

Sub-Tasks

- Repairs heating systems
- Repairs ventilation and filtration systems
- Repairs air conditioning systems
- Repairs sound suppression systems

Block H: Structural Components, Accessories and Attachments

Task 19: Diagnoses structural components, accessories and attachments

Sub-Tasks

- Diagnoses structural components
- Diagnoses operator station components
- Diagnoses attachments and accessories

Task 20: Repairs structural components, accessories and attachments

Sub-Tasks

- Performs mechanical repairs on structural components
- Repairs operator station components
- Repairs attachments and accessories
- Installs attachments and accessories

Create a Study Plan

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 NOA 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

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 journeyman 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.

Exam Preparation Guide: <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 an IP 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 NOA.

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

Red Seal Website

National Occupational Analysis - The NOA is a document used for Red Seal trades that describes the knowledge and abilities required by a fully competent trades-person working in that trade. The content for the IP exam is based on the NOA.

Red Seal Website: <https://www.red-seal.ca/eng/w.2lc.4m.2.shtml>

Heavy Duty Equipment Technician PRACTICE Exam

This is **NOT** an IP exam. This is a practice exam provided by the Inter-provincial Standards 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 an IP Exam.

www.red-seal.ca/s.1mpl.2.2x.1mQ.5.2st.3.4ns-eng.html?tid=101

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/heavy-duty-equip-tech/self-assessment.pdf

Glossary Terms

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

www.red-seal.ca/trades/heavydutyequiptech/2014n.4.1_.1ppb_gl.4ss.1ry-eng.html

Acronyms

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

http://www.red-seal.ca/trades/heavydutyequiptech/2014n.4.1_.1ppc_.1cr.4nym-eng.html

Tools and Equipment

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

http://www.red-seal.ca/trades/heavydutyequiptech/2014n.4.1_.1pp.1_t.4.4ls-eng.html

Resources – Book List

The books listed below are sorted according to NOA blocks as referenced throughout this study guide. 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.

BOOK	BLOCK							
	A	B	C	D	E	F	G	H
Modern Diesel Technology (MDT): Electricity and Electronics						✓		
MDT: Diesel Engines		✓				✓		
MDT: Brakes, Steering and Suspension Systems					✓			
MDT: Electronic Diesel Engine Diagnosis		✓				✓		
MDT: Heating, Ventilation, Air Conditioning and Refrigeration							✓	
MDT: Heavy Equipment Systems			✓	✓	✓	✓		
Diesel Mechanics, 4 th edition	✓	✓						
Medium/Heavy Duty Truck Engines, Fuel & Computerized Management Systems, 3 rd edition		✓					✓	
Canadian Truck and Transport Technician: Inter-provincial Certificate of Qualification Test Preparation	✓	✓	✓	✓	✓	✓	✓	✓

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

- Modern Diesel Technology: Electricity and Electronics*, Delmar Gengage Learning, Bennett, ISBN 1-4018-801304
- Modern Diesel Technology: Diesel Engines*, Delmar Gengage Learning, Spears, ISBN 1-4018-9809-2
- Modern Diesel Technology: Brakes, Steering and Suspension Systems*, Delmar Gengage Learning, Bennett, ISBN 1-4180-1372-2
- Modern Diesel Technology: Electronic Diesel Engine Diagnosis*, Delmar Gengage Learning, Bennett, ISBN 1-4018-7079-1
- Modern Diesel Technology: Heating, Ventilation, Air Conditioning and Refrigeration*, Delmar Gengage Learning, Dixon, ISBN 1-4018-7849-0
- Modern Diesel Technology: Heavy Equipment Systems*, Delmar Gengage Learning, 2009, Bennett, Huzij and Spano, ISBN 1-4180-0950-4
- Diesel Mechanics*, 4th edition, McGraw-Hill, 1999, Evridge and Schulz, ISBN 0-02-803462-7
- Medium/Heavy Duty Truck Engines, Fuel & Computerized Management Systems*, 3rd edition, Delmar Gengage Learning, 2009, Bennett, ISBN 1-4283-6666-0
- Canadian Truck and Transport Technician: Interprovincial Certificate of Qualification Test Preparation*, Centennial College Press, 2003, Bennett, Parsons and Restoule, ISBN 0-919852-44-0 ** (85% of the Heavy Duty content is covered here).

Disclaimer

Various external resources (websites, textbooks) have been listed in this study guide to assist an individual in preparing to write an IP 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 an IP 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

We hope this guide has provided you with some useful tools as you prepare for your IP Red Seal exam. If you have any questions regarding your IP 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

If you have any questions regarding your IP 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, 2nd 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

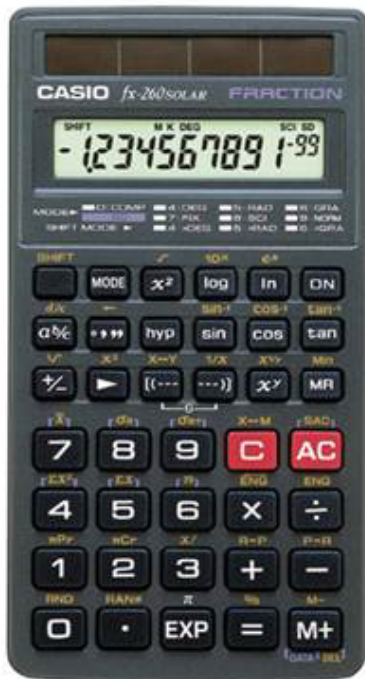
163 Hamilton River Road
Burse Building
Happy Valley – Goose Bay, NL
A0P 1E0

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

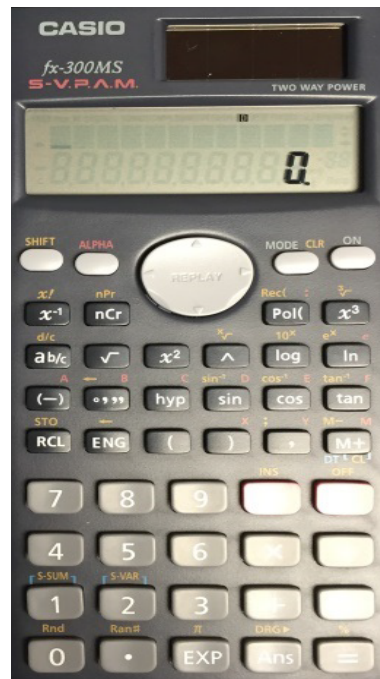
Appendix B: Calculator Use

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

ANSWER KEY INFO.
OF KEYS
ITEM COUNT

0	0	0	2
1	1	1	3
2	2	2	4
3	3	3	5
4	4	4	6
5	5	5	7
6	6	6	8
7	7	7	9
8	8	8	0
9	9	9	1

PERFORMANCE ASSESSMENT
% OF TOTAL SCORE
POINTS EARNED

0% = 100%			
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Bar Code

NUMBER CORRECT	
PERCENT CORRECT	
ROSTER NUMBER	
SCORE	
RESCORE	

COMBINED POINTS EARNED	
COMBINED PERCENT CORRECT	
LETTER GRADE	
SCORE	
RESCORE	

200 ITEM

MARKING INSTRUCTIONS
Use a No. 2 Pencil
Fill oval completely
Erase cleanly

STUDENT ID NUMBER

0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

FEED IN THIS DIRECTION ↑

NAME _____

SUBJECT _____

PERIOD _____ DATE _____

Feedback Form

Study Guide – Heavy Duty Equipment Technician

Please answer the following:

- (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:

Additional Comments:

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, Clarendville, NL A5A 1Z4
Fax: (709) 466-3987

