10 MOTORIZED EQUIPMENT MAINTENANCE

AUTOMOBILE MECHANICS

5692

SYNOPTIC TABLE OF EXAMINATIONS
PROGRAM ANALYSIS TABLES
TABLES OF SPECIFICATIONS
INFORMATION ON THE EVALUATION
PARTICIPATION EVALUATION CHECKLISTS
EVALUATION FORMS WORKSHEETS
FEEDBACK CHECKLIST

VOCATIONAL and TECHNICAL EDUCATION

Québec

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INTRODUCTION

This document presents program analysis tables, tables of specifications, and tables entitled *Information on the evaluation*. The latter contain comments dealing specifically with the evaluation of each module and are intended for those responsible for developing examinations at the school level. This material should be applied when preparing examinations for the certification of studies.

This document also includes the synoptic table of examinations, and a feedback checklist.

SYNOPTIC TABLE

Number of Modules: 30
Duration in hours: 1800
Number of Credits: 120

Title of program: Automobile Mechanics
Program Code: 5692

CODE	TITLE OF MODULE	HOURS[1]	STATUS[2]
841 611	1. The Trade and the Training Process	15	L
841 622	2. Characteristics of Motor Vehicles	30	L
841 632	3. Interpersonal Communication	30	L
841 641	4. Health, Safety and Environmental Protection	15	L
841 653	5. Welding and Cutting	45	L
841 664	6. Shop Work	60	L
841 675	7. Internal Combustion Engines	75	L
841 687	8. Internal Combustion Engine Repair	105	M
841 695	9. Basic Electrical and Electronic Circuits	75	M
841 704	10. Lighting Circuit Repair	60	L
841 712	11. Engine and Passenger Compartment Temperature Systems	30	L
841 723	12. Cooling, Heating and Air Conditioning System Maintenance and Repair	45	L
841 744	13. Motor Vehicle Maintenance	60	L
841 731	14. Job Search Techniques	15	L
841 754	15. Road Handling Systems	60	M
841 767	16. Suspension, Steering System and Conventional Brake Repair	105	L
841 776	17. Transmission Assemblies	90	L
841 787	18. Transmission Assembly Repair	105	L
841 794	19. Basic Computer-Controlled Systems	60	M
841 805	20. Starting and Charging Systems and Electromagnetic Accessories	75	L
841 815	21. Starting System, Charging System and Electromagnetic Accessory Repair	75	M
841 823	22. Passive and Active Security Systems	45	L
841 834	23. Antilock Brake System and Safety Accessory Repair	60	L
841 844	24. Electronic Ignition Systems	60	L
841 855	25. Electronic Ignition System Repair	75	L
841 864	26. Antipollution and Electronic Injection Systems	60	L
841 876	27. Antipollution and Electronic Injection System Maintenance and Repair	90	L
841 885	28. Engine-Transmission Unit Inspection	75	M
841 891	29. Starting a Business	15	L
841 906	30. Entering the Work Force	90	L

[1] One credit corresponds to 15 hours of study.
[2] Ministry (M) or local (L) examinations.

AUTOMOBILE MECHANICS PROGRAM (5692): SYNOPTIC TABLE OF EXAMINATIONS

Module Code	Number and Title of Module	Hours	Responsibility for Evaluation	Type of Evaluation	Duration of Examination (1)	Maximum Number of Candidates (2)	Minimum Performance Standard	Number of Versions	Complementary Material (3)
841 611	1. The Trade and the Training Process	15	School	Participation Evaluation	–				
841 622	2. Characteristics of Motor Vehicles	30	School	Practical Knowledge					
841 632	3. Interpersonal Communication	30	School	Practical					
841 641	4. Health, Safety and Environmental Protection	15	School	Practical Knowledge					
841 653	5. Welding and Cutting	45	School	Practical					
841 664	6. Shop Work	60	School	Practical					
841 675	7. Internal Combustion Engines	75	School	Practical Knowledge					
841 687	8. Internal Combustion Engine Repair	105	MEQ	Practical	3 hours	4	80	1	
841 695	9. Basic Electrical and Electronic Circuits	75	MEQ	Practical Knowledge Practical	1 hour 1 hour	All 6	9/12 32/40	9 1	 √
841 704	10. Lighting Circuit Repair	60	School	Practical					
841 712	11. Engine and Passenger Compartment Temperature Systems	30	School	Practical Knowledge					
841 723	12. Cooling, Heating and Air Conditioning System Maintenance and Repair	45	School	Practical					
841 744	13. Motor Vehicle Maintenance	60	School	Practical					

(1) Indicates only the duration of the examination for a group of students and does not include the time necessary to read the instructions.
(2) Maximum number of candidates to be evaluated at the same time by a single examiner.
(3) A √ in this column indicates the availability of complementary material for this particular examination.

AUTOMOBILE MECHANICS PROGRAM (5692): SYNOPTIC TABLE OF EXAMINATIONS

Module Code	Number and Title of Module	Hours	Responsibility for Evaluation	Type of Evaluation	Duration of Examination (1)	Maximum Number of Candidates (2)	Minimum Performance Standard	Number of Versions	Complementary Material (3)
841 731	14. Job Search Techniques	15	School	Participation Evaluation	–		15/20		
841 754	15. Road Handling Systems	60	MEQ	Practical Knowledge	90 min.	All	20/25	9	
841 767	16. Suspension, Steering System and Conventional Brake Repair	105	School	Practical			32/40 51/60		
841 776	17. Transmission Assemblies	90	School	Practical Knowledge			16/20		
841 787	18. Transmission Assembly Repair	105	School	Practical			40 40		
841 794	19. Basic Computer-Controlled Systems	60	MEQ	Practical Knowledge Practical	1 hour 1 hour	All 3	12/15 20/25	9 1	
841 805	20. Starting and Charging Systems and Electromagnetic Accessories	75	School	Practical Knowledge			16/20		
841 815	21. Starting System, Charging System and Electromagnetic Accessory Repair	75	MEQ	Practical	2 hours	3	85	1	
841 823	22. Passive and Active Security Systems	45	School	Practical Knowledge			16/20		
841 834	23. Antilock Brake System and Safety Accessory Repair	60	School	Practical			80		
841 844	24. Electronic Ignition Systems	60	School	Practical Knowledge			16/20		

(1) Indicates only the duration of the examination for a group of students and does not include the time necessary to read the instructions.
(2) Maximum number of candidates to be evaluated at the same time by a single examiner.
(3) A √ in this column indicates the availability of complementary material for this particular examination.

AUTOMOBILE MECHANICS PROGRAM (5692): SYNOPTIC TABLE OF EXAMINATIONS

Module Code	Number and Title of Module	Hours	Responsibility for Evaluation	Type of Evaluation	Duration of Examination (1)	Maximum Number of Candidates (2)	Minimum Performance Standard	Number of Versions	Complementary Material (3)
841 855	25. Electronic Ignition System Repair	75	School	Practical					
841 864	26. Antipollution and Electronic Injection Systems	60	School	Practical Knowledge					
841 876	27. Antipollution and Electronic Injection System Maintenance and Repair	90	School	Practical					
841 855	28. Engine-Transmission Unit Inspection	75	MEQ	Practical	90 min.	3	80	1	
841 891	29. Starting a Business	15	School	Participation Evaluation	–				
841 906	30. Entering the Work Force	90	School	Participation Evaluation	–				

(1) Indicates only the duration of the examination for a group of students and does not include the time necessary to read the instructions.
(2) Maximum number of candidates to be evaluated at the same time by a single examiner.
(3) A √ in this column indicates the availability of complementary material for this particular examination.

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PARTICIPATION EVALUATION CHECKLIST

WORKSHEETS

OBSERVATION CHECKLIST

PROGRAM ANALYSIS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

EXPECTED OUTCOME: To determine their suitability for the trade and the training process.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 1: INFORMATION ON THE TRADE	50	50	
- Learning about the job market in automobile mechanics (i.e. work environments, job prospects, wages, advancement and transfer opportunities, hiring criteria).			• Gather information on the job market in automobile mechanics.
- Learning about the nature and requirements of the job by going on field trips, conducting interviews, studying reference materials, and so forth.			• Gather information on the nature and requirements of the job.
- Learning about continuing education in order to keep up with technological developments and to maintain their qualifications.			• Gather information on continuing education.
- Presenting the information gathered at a group meeting and discussing personal impressions of the trade (i.e. advantages, drawbacks, requirements).			• Express their views on the trade at a group meeting, relating them to the information they have gathered.

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

EXPECTED OUTCOME: To determine their suitability for the trade and the training process.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 2: INFORMATION ON THE PROGRAM AND PARTICIPATION IN THE TRAINING PROCESS	30	25	
- Discussing the skills, aptitudes and knowledge required to practise the trade.			• Give their opinion on some of the requirements for practising the trade.
- Discussing the professional ethics and attitudes required to practise the trade.			• Clearly express their views on the professional ethics and attitudes required to practise the trade.
- Becoming familiar with the training program: training process, evaluation methods, certification of studies.			• Carefully examine the reference material provided.
- Discussing how the training program prepares them to find employment in automobile mechanics.			• Express their views on the training program at a group meeting. • Listen carefully to explanations.
- Giving their first impressions of the trade and the training process.			• Express their impressions clearly.

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

EXPECTED OUTCOME: To determine their suitability for the trade and the training process.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 3: EVALUATION AND CONFIRMATION OF CAREER CHOICE	20	25	
- Writing a report in which they: • describe their preferences, aptitudes and interests with respect to the trade • assess their career choice by comparing the different facets and demands of the trade with their own preferences, aptitudes and interests.			Write a report in which they: • sum up their preferences, interests and aptitudes • explain clearly how they arrived at their career choice.

TABLE OF SPECIFICATIONS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

EXPECTED OUTCOME: To determine their suitability for the trade and the training process.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 1: Information on the trade			
1. Gather information on the job market in automobile mechanics.	20	1.1 Provide a report listing the information gathered with respect to the job market.	20
2. Gather information on the nature and requirements of the job.	20	2.1 Provide a report listing the information gathered with respect to the nature and requirements of the job.	20
3. Express their views on the trade at a group meeting, relating them to the information they have gathered.	10	3.1 Express their views on the trade.	5
		3.2 Interrelate their views and the information gathered.	5
PHASE 2: Information on the program and participation in the training process			
4. Give their opinion on some of the requirements for practising the trade.	5	4.1 Express their opinions clearly on some of the requirements for practising the trade.	5
5. Carefully examine the reference material provided.	10	5.1 Become familiar with the program of study and evaluation methods.	10
6. Express their views on the training program at a group meeting.	10	6.1 Express their views on the training program, relating them to the work environment.	10

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

EXPECTED OUTCOME: To determine their suitability for the trade and the training process.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 3 : Evaluation and confirmation of career choice			
7. Write a report in which they: • sum up their preferences, interests and aptitudes • explain clearly how they arrived at their career choice.	25	7.1 Write a report covering all the topics.	25

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

Items	Comments
Type of examination	This examination consists of three phases to be evaluated throughout the module. PHASE 1: Information on the trade It is suggested that the situation analysis report be used to provide students with the necessary information. PHASE 2: Information on the program and participation in the training process The teacher should provide the students with the program of study, the analysis tables and the tables of specifications, and link the requirements of the trade to the training process. PHASE 3: Evaluation and confirmation of career choice Students should assess and confirm their career choice.
Number of candidates	All candidates.
Note	In this examination, only the students' participation is to be evaluated, not their performance.
Information concerning the criterion components	
Criterion component 1.1	
Provide a report listing the information gathered with respect to the job market.	The report should include information on the various types of companies, job prospects and wages, and advancement and transfer opportunities, as well as hiring criteria.

PROGRAM: Automobile Mechanics **CODE:** 841 611

MODULE: 1 – THE TRADE AND THE TRAINING PROCESS

Items	Comments
Criterion component 2.1	
Provide a report listing the information gathered with respect to the nature and requirements of the job.	Students are expected to list information on the nature and requirements of the job, such as tasks involved, working conditions, evaluation criteria, and workers' rights and responsibilities.
Criterion component 7.1	
Write a report covering all the topics.	The report is expected to include students' preferences, aptitudes, interests and career choice, and show how their preferences, interests and career choice are interrelated.
Minimum performance standard	16 YES.

PARTICIPATION EVALUATION CHECKLIST

Program : Automobile Mechanics
Module: 1 - THE TRADE AND THE TRAINING PROCESS
Program Code: 5692 **Module Code:** 841 611

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Mark	
Phase 1:		**Yes**	**No**
Information on the trade.	**1. Gather information on the job market in automobile mechanics.**		
	1.1 Provide a report listing the information gathered with respect to the job market:		
	- types of companies	❐	❐
	- job prospects and wages	❐	❐
	- advancement and transfer opportunities	❐	❐
	- hiring criteria.	❐	❐
	2. Gather information on the nature and requirements of the job.		
	2.1 Provide a report listing the information gathered with respect to the nature and requirements of the job:		
	- tasks involved	❐	❐
	- working conditions	❐	❐
	- evaluation criteria	❐	❐
	- workers' rights and responsibilities.	❐	❐
	3. Express their views on the trade at a group meeting, relating them to the information they have gathered.		
	3.1 Express their views on the trade.	❐	❐
	3.2 Interrelate their views and the information gathered.	❐	❐
Phase 2:			
Information on the program and participation in the training process.	**4. Give their opinion on some of the requirements for practising the trade.**		
	4.1 Express their opinions clearly on some of the requirements for practising the trade.	❐	❐

Evaluation Focuses	Observations and Judgments	Mark	
		Yes	**No**
	5. Carefully examine the reference material provided.		
	5.1 Become familiar with the program of study and evaluation methods:		
	- program content	❒	❒
	- evaluation methods.	❒	❒
	6. Express their views on the training program at a group meeting.		
	6.1 Express their views on the training program, relating them to the work environment:		
	- program of study	❒	❒
	- links to the work environment.	❒	❒
Phase 3:			
Evaluation and confirmation of career choice.	**7. Write a report in which they sum up their preferences, interests and aptitudes; and explain clearly how they arrived at their career choice.**		
	7.1 Write a report covering all the topics:		
	- preferences	❒	❒
	- interests	❒	❒
	- aptitudes	❒	❒
	- reasons for career choice	❒	❒
	- links between preferences, interests and career choice.	❒	❒

TOTAL: _____ **YES**

Minimum performance standard: 16 YES.

Pass: ❒ **Fail:** ❒ **Name of examiner :** _____

AUTOMOBILE MECHANICS

DVS 5692

WORKSHEET 1

Phase 1

Trade and Training Process **841 611**

NAME OF STUDENT _____

SCHOOL _____

GROUP NUMBER _____

INFORMATION ON THE JOB MARKET

Types of companies _____

_____

_____

Job prospects and wages _____

_____

_____

Advancement and transfer opportunities

_____

_____

_____

_____

Hiring criteria _____

_____

_____

AUTOMOBILE MECHANICS

DVS 5692

WORKSHEET 2

Phase 1

Trade and Training Process **841 611**

NAME OF STUDENT _____

SCHOOL _____

GROUP NUMBER _____

NATURE AND REQUIREMENTS OF THE JOB

Tasks involved _____

_____

_____

Working conditions _____

_____

_____

Evaluation criteria

_____

_____

_____

_____

Rights and responsibilities _____

_____

_____

AUTOMOBILE MECHANICS

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WORKSHEET 3

Phase 3

Trade and Training Process **841 611**

NAME OF STUDENT _____

SCHOOL _____

GROUP NUMBER _____

1. Describe your preferences, interests and aptitudes for the job.

2. Explain briefly your career choice, and show links between your preferences, your interests and your career choice.

Preferences _____

_____

Interests _____

_____

Aptitudes _____

_____

Career choice _____

_____

_____

Links between my preferences, interests and career choice:

_____

_____

_____

_____

AUTOMOBILE MECHANICS

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OBSERVATION CHECKLIST

Observations	Name of Student																			
PHASE 1																				
Express their views on the trade. (3.1)																				
Interrelate their views and the information gathered. (3.2)																				
PHASE 2																				
Express their opinions clearly on some of the requirements. (4.1)																				
Express their views on the training program. (6.1)																				
Relate their views to the work environment. (6.1)																				

Note to instructor:

- **Place a checkmark in the box for each student who demonstrates the attitude described.**
- **Transfer the results to 3.1, 3.2, 4.1 and 6.1 on the Participation Evaluation Checklist.**

PROGRAM: Automobile Mechanics **CODE:** 841 622

MODULE: 2 – CHARACTERISTICS OF MOTOR VEHICLES

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 622

MODULE: 2 – CHARACTERISTICS OF MOTOR VEHICLES

EXPECTED BEHAVIOUR: To list the characteristics of motor vehicles.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Identify sources of technical information.	10	-	• Types of conventional and computerized documents. • Types of presentations of information.	
B. Find technical information with a view to applying it.	40	35	• Research of diagrams, drawings, codes and manufacturer's instructions and specifications. • Use of research tools.	T
C. Identify the parts, systems and subsystems of a motor vehicle.	30	50	• Parts, systems and subsystems of the vehicle.	T
D. Explain the overall operation of motor vehicles.	20	15	• Function of each part, system and subsystem. • Functional relationships between the parts, systems and subsystems.	T

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS – THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 622

MODULE: 2 - CHARACTERISTICS OF MOTOR VEHICLES

EXPECTED BEHAVIOUR: To list the characteristics of motor vehicles.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Find technical information with a view to applying it.	1. Research of diagrams, drawings, codes and manufacturer's instructions and specifications.	35	1.1 Location of diagrams.	10	2
			1.2 Location of specifications.	15	3
			1.3 Location of recommended work methods.	10	2
C. Identify the parts, systems and subsystems of a motor vehicle.	2. Parts, systems and subsystems of the vehicle.	50	2.1 Identification of the parts, systems and subsystems of the vehicle.	35	7
			2.2 Explanation of the characteristics of motor vehicles using the appropriate English or French terminology.	15	3
D. Explain the overall operation of motor vehicles.	3. Function of each part, system and subsystem.	15	3.1 Description of the function of a part, system or subsystem.	10	2
	4. Functional relationships between the parts, systems and subsystems.		4.1 Identification of the functional relationships between the parts, systems and subsystems.	5	1

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics **Code:** 841 622

MODULE: 2 - CHARACTERISTICS OF MOTOR VEHICLES

Items	Comments
Type of examination	This module includes a theory examination. Technical documentation is to be provided. The questions are to be based on learning situations, diagrams and drawings.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 632

MODULE: 3 – INTERPERSONAL COMMUNICATION

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 632

MODULE: 3 – INTERPERSONAL COMMUNICATION

EXPECTED BEHAVIOUR: To communicate with customers and colleagues.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Approach customers, superiors and colleagues.	20	30	• Elements in the communication process. • Communication styles. • Courteous behaviour. • Approach according to communication style. • Factors influencing communication.	P
B. Identify customers' needs.	15	-	• Effective communication techniques. • Understanding of customers' needs. • Techniques to counteract defensive behaviour. • Techniques for closing a discussion.	
C. Relay technical information verbally and in writing.	40	50	• Technique for relaying technical information verbally. • Quality of written report.	P
D. Use work methods and techniques for communicating in a team.	25	20	• Adherence to communication rules. • Techniques for communicating in a team. • Organization of work area.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 632

MODULE: 3 – INTERPERSONAL COMMUNICATION

EXPECTED BEHAVIOUR: To communicate with customers and colleagues.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Approach customers, superiors and colleagues	PT/PS	1. Approach according to communication style (superiors).	30	1.1 Courteous approach.	15
				1.2 Properly applied the characteristics of effective communication.	15
C. Relay technical information verbally and in writing.	PT	2. Quality of written report.	50	2.1 Accurate information.	10
				2.2 Proper description of tasks carried out.	15
				2.3 Clear indication of time taken to carry out the work.	10
				2.4 Appropriate use of English and French technical terminology.	15
D. Use work methods and techniques for communicating in a team.	PS	3. Techniques for communicating in a team.	20	3.1 Communicated effectively with colleagues.	10
				3.2 Participated actively in the functional organization of the work area.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 632

MODULE: 3 – INTERPERSONAL COMMUNICATION

Items	Comments
Type of examination	It is recommended that this examination be spread over several weeks. Candidates can be evaluated at the appropriate moment in the learning process. The instructor is expected to play the role of the supervisor. The report should be done on the worksheet. Evaluation of the candidates' communication skills in dealing with the team can be carried out during various activities.
Number of candidates	For criterion components 1.1 and 1.2, candidates are to be evaluated individually. For criterion components 2.1 to 2.4 inclusive, there is no set norm, depending on the activities involved. Finally, for criterion components 3.1 and 3.2, candidates are again to be evaluated individually.
Information on the criterion components	
Criterion component 1.1	
Courteous approach.	The instructor is expected to verify whether candidates show availability and respect for authority.
Criterion component 1.2	
Properly applied the characteristics of effective communication.	Candidates are expected to listen attentively, formulate appropriate questions and, if necessary, rephrase the customer's request.

PROGRAM: Automobile Mechanics CODE: 841 632

MODULE: 3 – INTERPERSONAL COMMUNICATION

Items	Comments
Criterion components 2.1, 2.2 and 2.3	
Quality of written report.	The instructor is expected to verify whether the descriptions with regard to working order, verifications and repair work are accurate and detailed. The instructor should also verify whether the time needed to carry out the work for each of the operations has been clearly indicated.
Criterion component 3.1	
Communicated effectively with colleagues.	Candidates are expected to communicate effectively with their colleagues and show respect.
Minimum performance standard	75 marks.

EVALUATION FORM

Program: Automobile Mechanics
Module: 3 - INTERPERSONAL COMMUNICATION
Program Code: 5692 **Module Code:** 841 632

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
A. Approach customers, superiors and colleagues.	**1. Approach according to communication style (superiors).**			
	1.1 Courteous approach:	❑	❑	0 15
	- availability			
	- respect for authority.	❑	❑	
	1.2 Properly applied the characteristics of effective communication:			0 15
	- listened attentively	❑	❑	
	- asked appropriate questions	❑	❑	
	- rephrased customer's request, if necessary.	❑	❑	
C. Relay technical information verbally and in writing.	**2. Quality of written report.**			
	2.1 Accurate information:			0 10
	- accurate description of problems.	❑	❑	
	2.2 Proper description of tasks carried out:			0 15
	- description of verifications	❑	❑	
	- detailed description of repairs.	❑	❑	
	2.3 Clear indication of time taken to carry out the work:			0 10
	- indication of the time taken to complete each operation.	❑	❑	
	2.4 Appropriate use of English and French technical terminology.			0 15

Evaluation Focuses	Observations			Mark
		Yes	No	
D. Use work methods and techniques for communicating in a team.	**3. Techniques for communicating in a team.**			
	3.1 Communicated effectively with colleagues:			0 10
	- showed respect for others	❑	❑	
	- conversed in a clear manner.	❑	❑	
	3.2 Participated actively in the functional organization of the work area.			0 10

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 75 marks.

TOTAL: /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 641

MODULE: 4 – HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 641

MODULE: 4 - HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION

EXPECTED BEHAVIOUR: To apply concepts related to health, safety and environmental protection.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Explain the aspects of the laws related to health, safety and environmental protection that apply to automobile mechanics.	10	-	• Objectives of the legislation. • Measures provided for in the legislation. • Measures taken by manufacturers to protect the environment.	
B. Explain the preventive measures to be taken when setting up a repair shop.	30	25	• Safe layout of a repair shop. • Preventive measures. • Methods for storing hazardous materials.	T T T
C. Associate preventive measures with the risks inherent in the chemicals most commonly used in the trade.	20	30	• Effects of the chemicals on health, safety and the environment. • Preventive measures. • Methods for recycling hazardous materials. • WHMIS symbols.	T T T
D. Associate preventive measures with the performance of trade-related operations.	25	25	• Dangerous operations. • Safe behaviours.	T
E. Identify different individual safety measures.	10	10	• Individual safety measures.	T
F. Determine the action to take in the case of an accident or emergency.	5	10	• Basic first-aid operations. • Steps to be taken.	 T

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 641

MODULE: 4 - HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION

EXPECTED BEHAVIOUR: To apply concepts related to health, safety and the environmental protection.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Explain the preventive measures to be taken when setting up a repair shop.	1. Safe layout of a repair shop.	10	1.1 Description of the safe layout of a repair shop.	10	2
	2. Preventive measures.	5	2.1 Identification of the rules for preventing fire in a repair shop.	5	1
	3. Methods for storing hazardous materials.	10	3.1 Identification of methods for storing hazardous materials.	10	2
C. Associate preventive measures with the risks inherent in the chemicals most commonly used in the trade.	4. Effects of the chemicals on health, safety and the environment.	10	4.1 Description of the effects of the chemicals on health, safety and the environment.	10	2
	5. Preventive measures.	10	5.1 Identification of the different preventive measures related to chemicals.	10	2
	6. WHMIS symbols.	10	6.1 Identification of WHMIS symbols.	10	2
D. Associate preventive measures with the performance of trade-related operations.	7. Dangerous operations.	25	7.1 Identification of preventive measures related to certain operations.	25	5

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 641

MODULE: 4 - HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION

EXPECTED BEHAVIOUR: To apply concepts related to health, safety and the environmental protection.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
E. Identify different individual safety measures.	8. Individual safety measures.	10	8.1 List of various individual preventive measures.	10	2
F. Determine the action to take in the case of an accident or emergency.	9. Steps to be taken.	10	9.1 List of action to be taken in the case of an accident.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics **Code:** 841 641

MODULE: 4 - HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION

Items	Comments
Type of examination	This theory examination is based on preventive measures related to health, safety and environmental protection. As far as possible, the examiner is to ask questions based on learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	17 correct answers out of 20, or 85 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 653

MODULE: 5 – WELDING AND CUTTING

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 653

MODULE: 5 - WELDING AND CUTTING

EXPECTED BEHAVIOUR: To weld and cut metals.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Prepare the work.	9	10	• Assembly of welding station. • Choice of type of weld.	P
B. Heat parts.	3	-	• Mastery of techniques. • Uniform heating.	
C. Weld metals in flat, horizontal and vertical positions, using: • tin • autogenous and heterogenous welding.	65	55	• Choice of tools and equipment. • Tacking technique. • Welding technique. • Quality of welds.	 P P
D. Cut thin steel and thick steel.	20	28	• Cutting techniques. • Quality of cuts.	P P
E. Disassemble the welding station.	3	-	• Storage of equipment and tools.	
F. Observe health and safety rules in the workplace.	-	7	• Observance of health and safety rules.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 653

MODULE: 5 - WELDING AND CUTTING

EXPECTED BEHAVIOUR: To weld and cut metals.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Prepare the work.	PT	1. Assembly of welding station.	10	1.1 Correct assembly of welding station.	10
C. Using autogenous welding, weld metals in the flat position (butt joint).	PS	2. Welding technique.	10	2.1 Correctly adjusted flame.	10
	PT	3. Quality of welds.	10	3.1 No major defect in weld bead.	10
Using autogenous welding, weld metals in the vertical position (lap welding).	PT	4. Quality of welds.	10	4.1 No major defect in weld bead.	10
Using heterogeneous welding, weld metals in the flat position (lap welding).	PS	5. Welding technique.	5	5.1 Held tip at correct angle.	5
	PT	6. Quality of welds.	10	6.1 No major defect in weld bead.	10
Using heterogeneous welding, weld metals in the vertical position (butt joint).	PT	7. Quality of welds.	10	7.1 No major defect in weld bead.	10

N.B. The techniques - vertical and flat positions, autogenous and heterogeneous welding - are to be evaluated separately.

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics CODE: 841 653

MODULE: 5 - WELDING AND CUTTING

EXPECTED BEHAVIOUR: To weld and cut metals.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
D. Cut thin steel and thick steel.	PS	8. Cutting techniques.	15	8.1 Correctly adjusted pressure valves.	5
				8.2 Correctly adjusted flame.	10
	PT	9. Quality of cuts.	13	9.1 Conformity of cut to outline.	8
				9.2 Absence of molten metal on upper edges.	5
F. Observe health and safety rules in the workplace.	PS	10. Observance of health and safety rules.	7	10.1 Observed safety rules.	7

N.B. The techniques - vertical and flat positions, autogenous and heterogeneous welding - are to be evaluated separately.

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 653

MODULE: 5 - WELDING AND CUTTING

Items	Comments
Type of examination	This examination consists of five projects: • Autogenous flat position welding, with a metal sheet 1.6 mm thick, using the butt joint technique. • Autogenous vertical position welding, with a metal sheet 1.6 mm thick, using the lap welding technique. • Heterogeneous flat position welding, with a metal sheet 1.6 mm thick, using the lap welding technique. • Heterogeneous vertical position welding, with a metal sheet 1.6 mm thick, using the butt joint technique. • Cutting a sheet of steel 6.4 mm thick.
Number of candidates	It is suggested that the number of candidates being evaluated be equal to the number of welding stations available, i.e. approximately five candidates.
Information on the criterion components	
Criterion component 3.1	
No major defect in weld bead.	The weld bead should be uniform over at least 100 mm and the two edges should be correctly welded so as to ensure a proper degree of resistance.

PROGRAM: Automobile Mechanics CODE: 841 653

MODULE: 5 - WELDING AND CUTTING

Items	Comments
Criterion component 4.1	
No major defect in weld bead.	The weld bead should be uniform over at least 100 mm and the weld should be resistant.
Criterion component 6.1	
No major defect in weld bead.	The weld bead should be uniform over at least 100 mm and the weld should be resistant.
Criterion component 7.1	
No major defect in weld bead.	The weld bead should be uniform over at least 100 mm and the two edges should be correctly welded so as to ensure a proper degree of resistance.
Criterion component 10.1	
Observed safety rules.	This aspect should be evaluated throughout the examination.
Minimum performance standard	75 marks.

EVALUATION FORM

Program: Automobile Mechanics
Module: 5 - WELDING AND CUTTING
Program Code: 5692 **Module Code:** 841 653

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark	
A. Prepare the work.	**1. Assembly of welding station.**				
	1.1 Correct assembly of welding station:			0	10
	- correct pressure setting.	❑	❑		
C. Using autogenous welding, weld metals in the flat position (butt joint).	**2. Welding technique.**				
	2.1 Correctly adjusted flame.	❑	❑	0	10
	3. Quality of welds.				
	3.1 No major defect in weld bead:			0	10
	- weld bead uniform over at least 100 mm	❑	❑		
	- correct welding of the two edges (resistance).	❑	❑		
Using autogenous welding, weld metals in the vertical position (lap welding).	**4. Quality of welds.**				
	4.1 No major defect in weld bead:			0	10
	- weld bead uniform over at least 100 mm	❑	❑		
	- resistant welds.	❑	❑		
Using heterogeneous welding, weld metals in the flat position (lap welding).	**5. Welding technique.**				
	5.1 Held tip at correct angle.			0	5
	6. Quality of welds.				
	6.1 No major defect in weld bead:			0	10
	- weld bead uniform over at least 100 mm	❑	❑		
	- resistant welds.	❑	❑		

Evaluation Focuses	Observations and Judgments			Mark	
		Yes	No		
Using heterogeneous welding, weld metals in the vertical position (butt joint).	**7. Quality of welds.**				
	7.1 No major defect in weld bead:			0	10
	- weld bead uniform over at least 100 mm	❑	❑		
	- correct welding of the two edges (resistance).	❑	❑		
D. Cut thin steel and thick steel.	**8. Cutting techniques.**				
	8.1 Correctly adjusted pressure valves:			0	5
	- 20 to 30 lb. oxygen.	❑	❑		
	8.2 Correctly adjusted flame.			0	10
	9. Quality of cuts.				
	9.1 Cut metal according to outline: Tolerance: ± 3 mm.			0	8
	9.2 Absence of molten metal on upper edges.			0	5
F. Observe health and safety rules in the workplace.	**10. Health and safety rules.**				
	10.1 Observed safety rules.			0	7

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 75 marks.

TOTAL: /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 664

MODULE: 6 – SHOP WORK

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

DRAWING

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 664

MODULE: 6 - SHOP WORK

EXPECTED BEHAVIOUR: To perform repair shop operations.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Use hand tools to disassemble and reassemble a simple mechanical device.	20	-	• Choice of hand tools. • Use of tools.	
B. Measure components and fasteners in the metric and imperial systems using instruments.	25	30	• Selection of appropriate instruments. • Use of measuring instruments. • Accuracy of measurements. • Interpretation of readings.	 P
C. Use fasteners.	15	20	• Selection of fasteners. • Preparation of fasteners. • Quality of assemblies. • Quality of flares.	 P P
D. Cut ferrous and nonferrous metals at the workbench.	30	45	• Use of cutting tools. • Observance of threading and tapping techniques. • Extraction of a broken screw. • Installation of threaded inserts. • Quality of machining.	P P P
E. Use repair shop equipment.	10	-	• Observance of recommended procedures. • Replacement of grindstone.	
F. Observe health and safety rules.	-	5	• Observance of health and safety rules.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 664

MODULE: 6 - SHOP WORK

EXPECTED BEHAVIOUR: To perform repair shop operations.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
B. Measure components and fasteners in the metric and imperial systems using instruments.	PT/PS	1. Use of measuring instruments.	30	1.1 Correctly used measuring instruments.	10
				1.2 Accurate recording of readings.	20
C. Use fasteners.	PT	2. Preparation of fasteners.	10	2.1 Proper cutting of tubing connectors.	5
				2.2 Proper bending of tubing connectors.	5
	PT	3. Quality of flares.	10	3.1 Proper centering of flare.	10
D. Cut ferrous and nonferrous metals at the workbench.	PT/PS	4. Use of cutting tools.	20	4.1 Drill bit correctly sharpened.	15
				4.2 Observed cutting and filing techniques.	5
	PS	5. Observance of threading and tapping techniques.	20	5.1 Observed threading technique.	10
				5.2 Observed tapping technique.	10
	PT	6. Quality of machining	5	6.1 Proper machining in accordance with the drawing.	5
F. Observe health and safety rules.	PS	7. Observance of health and safety rules.	5	7.1 Observed health and safety rules.	5

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 664

MODULE: 6 - SHOP WORK

Items	Comments
Type of examination	This examination consists of three projects: • Taking measurements using a dial gauge, an imperial or metric micrometer and a vernier caliper. Candidates must take at least six measurements. • Cutting, bending and performing a double flare, using steel tubing. • Machining a part (70 mm x 35 mm x 35 mm), and tapping it three times. Finally, cutting a rod and threading it.
Number of candidates	No more than five candidates should be evaluated at the same time by a single examiner.
Information on the criterion components	
Criterion component 1.1	
Correctly used measuring instruments.	The instructor is to evaluate the use of a dial gauge, a metric or imperial micrometer, as well as a metric or imperial vernier.
Criterion component 1.2	
Accurate recording of readings.	Candidates are required to take six readings on different components. The instructor is to verify whether the measurements are carefully recorded. One error or omission is allowed.
Criterion component 2.1	
Proper technique cutting of tubing connectors.	The size should be respected and the cut should be straight.

PROGRAM: Automobile Mechanics CODE: 841 664

MODULE: 6 - SHOP WORK

Items	Comments
Criterion component 4.1	
Drill bit correctly sharpened.	The drill bit should be sharpened in such a way that the angle of the two lands is identical, the chisel edge centered and the clearance angle correct.
Criterion component 4.2	
Observed cutting and filing techniques.	While the rod is being cut, the adjustment of the saw blade, the saw movements and the pressure exerted on the saw are to be evaluated. While the part is being filed, the following should be evaluated: holding technique, pressure exerted and cleaning of file.
Criterion component 6.1	
Proper machining in accordance with the drawing.	It is expected that the size of the part be correct, and that the taps be placed in accordance with the drawing.
Criterion component 7.1	
Observed health and safety rules.	The instructor is to observe whether the tools and equipment are used safely and whether candidates wear the appropriate protective gear while performing machining operations.
Minimum performance standard	80 marks.

EVALUATION FORM

Program: Automobile Mechanics
Module: 6 - SHOP WORK
Program Code: 5692 **Module Code:** 841 664

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
B. Measure components and fasteners in the metric and imperial systems using instruments.	**1. Correct use of measuring instruments.**			
	1.1 Use of measuring instruments:			0 10
	- dial gauge	❑	❑	
	- metric or imperial micrometer	❑	❑	
	- metric or imperial vernier.	❑	❑	
	1.2 Accurately recorded readings.			0 20
	Tolerance: One error or omission.			
C. Use fasteners.	**2. Preparation of fasteners.**			
	2.1 Proper cutting of tubing connectors:			0 5
	- proper size	❑	❑	
	- straight cut.	❑	❑	
	2.2 Proper bending of tubing connectors:			0 5
	- proper angle.	❑	❑	
	3. Quality of flares.			
	3.1 Flare carefully centered.			0 10
D. Cut ferrous and nonferrous metals at the workbench.	**4. Use of cutting tools.**			
	4.1 Drill bit correctly sharpened:			0 15
	- lands of identical angle	❑	❑	
	- chisel edge centered	❑	❑	
	- correct clearance angle.	❑	❑	

Evaluation Focuses	Observations and Judgments			Mark	
	4.2 Observed cutting and filing techniques:	**Yes**	**No**	0	5
	- cutting:				
	• saw blade properly adjusted	❑	❑		
	• straight and steady cutting movement	❑	❑		
	• pressure applied on forward movement and released on return	❑	❑		
	- filing:				
	• file held in flat position	❑	❑		
	• pressure applied on file on forward movement only	❑	❑		
	• file cleaned, when necessary.	❑	❑		
	5. Observance of threading and tapping techniques.				
	5.1 Observed threading technique.			0	10
	5.2 Observed tapping technique.			0	10
	6. Quality of machining.				
	6.1 Proper machining in accordance with the drawing:			0	5
	- proper size of block	❑	❑		
	- proper positioning of taps.	❑	❑		

Evaluation Focuses	Observations and Judgments	Mark
F. Observed health and safety rules.	**7. Observance of health and safety rules.** 7.1 Observed health and safety rules: - used tools and equipment safely ❑ ❑ - wore protective gear while performing machining operations. ❑ ❑	0 5

Notes for the examiner:
1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

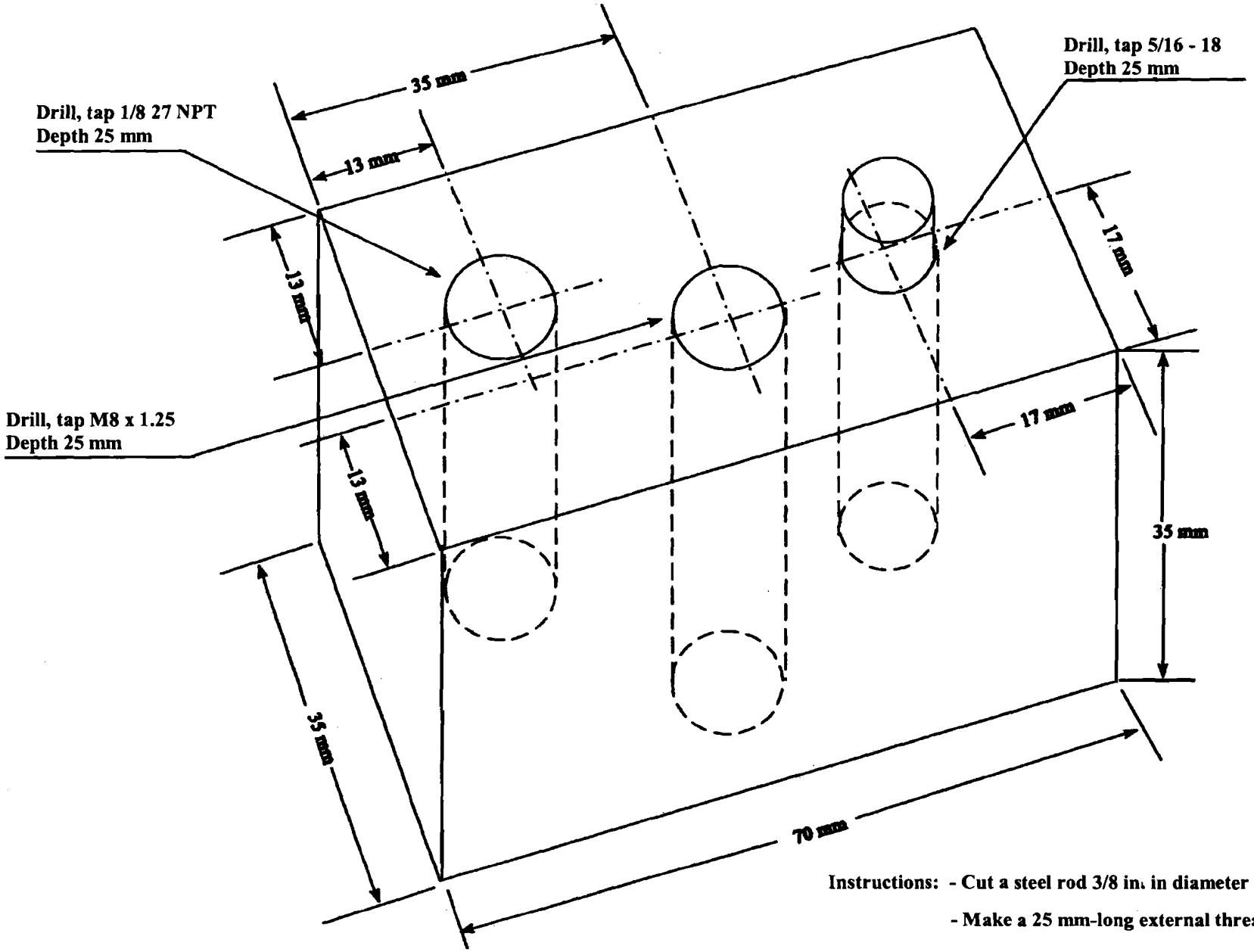
Minimum performance standard: 80 marks.

TOTAL: /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

DRAWING



Instructions: - Cut a steel rod 3/8 in. in diameter and 100 mm long

- Make a 25 mm-long external thread 5/16 - 18

PROGRAM: Automobile Mechanics **CODE:** 841 675

MODULE: 7 – INTERNAL COMBUSTION ENGINES

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 675

MODULE: 7 - INTERNAL COMBUSTION ENGINES

EXPECTED BEHAVIOUR: To analyze the operation of internal combustion engines.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information in the technical documentation.	10	-	• Mechanical diagrams. • Interpretation of the information.	
B. Identify the types of internal combustion engines and their components.	5	25	• Types of internal combustion engines.	T
C. Explain the operation of gasoline and diesel engines.	15	35	• Characteristics of the components. • Principles of operation of two- and four-stroke internal combustion engines. • Overall operation of a four-stoke engine. • Interpretation of specifications related to the performance of an internal combustion engine.	T T
D. Explain the operation of the lubrication system.	25	30	• Operation of the system and its components. • Circulation of the lubricant. • Relationships between the properties of oils and the proper operation of an engine.	T T T
E. Recognize foreseeable anomalies in the engine.	20	10	• Recognition of foreseeable anomalies.	T
F. Diagnose the mechanical condition of the engine before disassembly.	25	-	• Diagnostic equipment. • Use of the equipment. • Observance of manufacturer's recommended inspection methods. • Interpretation of results.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 675

MODULE: 7 - INTERNAL COMBUSTION ENGINES

EXPECTED BEHAVIOUR: To analyze the operation of internal combustion engines.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify the types of internal combustion engines and their components.	1. Types of internal combustion engines.	25	1.1 Identification of the different types of internal combustion engines.	10	2
			1.2 Identification of their components.	15	3
C. Explain the operation of gasoline and diesel engines.	2. Characteristics of the components.	25	2.1 Description of the operation of the components.	10	2
			2.2 Differentiation among the properties of the materials.	5	1
			2.3 List of the relationships among the components.	10	2
	3. Principles of operation of two- and four-stroke internal combustion engines.	10			
			3.1 Differentiation between the cycle of operation of two- and four-stroke internal combustion engines.	5	1
			3.2 Description of the overall operation of a four-stroke engine.	5	1
D. Explain the operation of the lubrication system.	4. Operation of the system and its components.	15			
			4.1 Identification of the components.	10	2
			4.2 Description of the operation of the components.	5	1

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 675

MODULE: 7 - INTERNAL COMBUSTION ENGINES

EXPECTED BEHAVIOUR: To analyze the operation of internal combustion engines.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
	5. Circulation of the lubricant.	10	5.1 Description of the circulation of the lubricant.	10	2
	6. Relationships between the properties of oils and the proper operation of an engine.	5	6.1 Identification of oils, according to their classification and properties.	5	1
E. Recognize foreseeable anomalies in the engine.	7. Recognition of foreseeable anomalies.	10	7.1 Identification of anomalies related to oils.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 675

MODULE: 7 - INTERNAL COMBUSTION ENGINES

Items	Comments
Type of examination	In this theory examination, candidates are to be evaluated on their knowledge of internal combustion engines, given drawings, diagrams and learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 687

MODULE: 8 – INTERNAL COMBUSTION ENGINE REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 687

MODULE: 8 - INTERNAL COMBUSTION ENGINE REPAIR

EXPECTED BEHAVIOUR: To repair internal combustion engines.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Plan the work.	5	-	• Consultation of manufacturer's recommendations and specifications. • Choice of tools and equipment.	
B. Disassemble an internal combustion engine.	15	20	• Observance of technique for disassembling the cylinder block and head. • Work method.	P
C. Determine the condition of the components of the cylinder block and head.	25	22	• Visual inspection. • Observance of techniques for inspecting each component. • Interpretation and recording of measurements. • Report on the repair work to be done.	P
D. Repair and replace the components of the cylinder block and head.	25	22	• Application of manufacturer's recommendations. • Quality of surface finish on repaired components. • Quality of tuning. • Quality of machined valves.	P
E. Reassemble the internal combustion engine.	20	20	• Observance of techniques for reassembling the cylinder block and head. • Quality of assembly. • Quality installation of seals and gaskets.	P
F. Determine whether the condition of the engine is in conformity with the manufacturer's specifications.	10	16	• Observance of recommended testing procedures. • Accuracy of measurements recorded. • Quality of report.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 687

MODULE: 8 - INTERNAL COMBUSTION ENGINE REPAIR

EXPECTED BEHAVIOUR: To repair internal combustion engines.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
B. Disassemble an internal combustion engine (cylinder block).	PS	1. Observance of technique for disassembling the components of the cylinder block.	15	1.1 Observed the proper sequence for disassembling the piston-connecting rod component.	10
				1.2 Correctly disassembled the piston rings.	5
C. Determine the condition of the components of the cylinder block.	PT	2. Interpretation and recording of measurements.	12	2.1 Accurate measurement of the piston and the cylinder and correct interpretation of the measurements.	12
E. Reassemble the internal combustion engine (cylinder block).	PS	3. Observance of techniques for reassembling the cylinder block.	12	3.1 Properly reassembled the cylinder block components.	12
F. Determine whether the condition of the engine is in conformity with the manufacturer's specifications.	PS	4. Observance of recommended testing procedures.	16	4.1 Correctly used recommended testing equipment.	5
				4.2 Recorded accurate readings and made a correct diagnosis.	11
B. Disassemble an internal combustion engine (head).	PS	5. Observance of technique for disassembling the components of the head.	5	5.1 Observed the proper sequence for disassembling the valves.	5
C. Determine the condition of the components of the head.	PT	6. Interpretation and recording of measurements.	10	6.1 Accurate measurement of the valve stem and the valve guide, and correct interpretation of the measurements.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 687

MODULE: 8 - INTERNAL COMBUSTION ENGINE REPAIR

EXPECTED BEHAVIOUR: To repair internal combustion engines.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
D. Repair and replace the components of the head.	PT	7. Quality of machined valves.	22	7.1 Correct machining of valve face.	10
				7.2 Correct machining of valve seat.	12
E. Reassemble the internal combustion engine (head).	PS	8. Observance of techniques for reassembling the head.	8	8.1 Observed recommended techniques for reassembling the cylinder head components.	8

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics **CODE:** 841 695

MODULE: 9 – BASIC ELECTRICAL AND ELECTRONIC CIRCUITS

PROGRAM ANALYSIS TABLE

TABLES OF SPECIFICATIONS

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 695

MODULE: 9 - BASIC ELECTRICAL AND ELECTRONIC CIRCUITS

EXPECTED BEHAVIOUR: To analyze problems related to basic electrical and electronic circuits.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Distinguish among the types of basic electrical and electronic circuits and their components.	25	-	• Different type of circuits. • Specific characteristics of the components.	
B. Explain the operation of basic electric and electronic circuits.	25	50	• Specific characteristics of direct current in a conductor wire. • Explanation of Ohm's law. • Accuracy of calculations. • Specific characteristics of the battery. • Operation of a relay.	 T T
C. Recognize foreseeable anomalies in basic electric and electronic circuits.	10	-	• Main foreseeable anomalies. • Effect of anomalies on the operation of the circuit. • Choice of diagnostic methods.	
D. Assess the condition of different types of basic electric and electronic circuits.	15	20	• Use of the appropriate instruments. • Interpretation of results. • Interpretation of voltage drops.	P
E. Interpret diagrams and drawings of basic electrical and electronic circuits.	25	30	• Location of drawings and diagrams in the technical documentation. • Operation of circuits and correct interpretation of diagrams. • Identification of the path of the current.	P T P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 695

MODULE: 9 - BASIC ELECTRICAL AND ELECTRONIC CIRCUITS

EXPECTED BEHAVIOUR: To analyze problems related to basic electrical and electronic circuits.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Explain the operation of basic electric and electronic circuits.	1. Accuracy of calculations.	30	1.1 Accurate calculations with respect to the resistance, voltage, intensity and power of the circuits.	30	6
	2. Specific characteristics of the battery.	20	2.1 Description of the phenomena and characteristics of the battery.	20	4
E. Interpret diagrams and drawings of basic electrical and electronic circuits.	3. Operation of circuits and correct interpretation of diagrams.	10	3.1 Assembly of the components of electrical circuits.	10	2

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 695

MODULE: 9 - BASIC ELECTRICAL AND ELECTRONIC CIRCUITS

EXPECTED BEHAVIOUR: To analyze problems related to basic electrical and electronic circuits.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
D. Assess the condition of different types of basic electric and electronic circuits.	PS/PT	1. Use of the appropriate instruments.	20	1.1 Correctly used the appropriate instruments.	5
				1.2 Accurate readings on the electronic circuit.	7
				1.3 Accurate readings on the electrical circuit.	8
E. Interpret diagrams and drawings of basic electrical and electronic circuits.	PT	2. Location of drawings and diagrams in the technical documentation.	15	2.1 Accurate location of headlight system.	5
				2.2 Accurate location of flasher system.	5
				2.3 Accurate location of signalling system.	5
	PT	3. Identification of the path of the current.	5	3.1 Accurate identification of the path of the current.	5

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics **CODE:** 841 704

MODULE: 10 – LIGHTING CIRCUIT REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 704

MODULE: 10 - LIGHTING CIRCUIT REPAIR

EXPECTED BEHAVIOUR: To repair lighting circuits.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information in the technical documentation.	20	20	• Consultation of technical documentation. • Interpretation of information in the technical documentation.	P
B. Diagnose the condition of lighting system circuits, components and relays.	30	35	• Observance of inspection techniques. • Diagnosis of condition of system.	P
C. Plan the work.	5	-	• Determination of work to be done. • Choice of tools, instruments and equipment.	
D. Replace lighting system components.	10	10	• Application of method for removing components. • Application of methods for replacing components. • Quality of replacements.	P
E. Repair wiring harnesses and cables, and their components.	25	25	• Application of repair techniques. • Use of specialized tools. • Cleaning of contacts. • Quality of connections.	P
F. Verify the operating condition of the system.	10	-	• Testing of system. • Quality of report.	
G. Take care when handling the vehicle.	-	10	• Handling of vehicle.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 704

MODULE: 10 - LIGHTING CIRCUIT REPAIR

EXPECTED BEHAVIOUR: To repair lighting circuits.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Interpret the information in the technical documentation.	PT	1. Consultation of technical documentation.	20	1.1 Accurate choice of electrical drawing.	20
B. Diagnose the condition of lighting system circuits, components and relays.	PS	2. Observance of inspection techniques.	35	2.1 Observed the manufacturer's recommended techniques.	20
				2.2 Made an accurate diagnosis.	15
D. Replace lighting system components.	PT	3. Quality of replacements.	10	3.1 Circuit in good working order.	5
				3.2 Integrity of the system.	5
E. Repair wiring harnesses and cables, and their components.	PT	4. Quality of connections.	25	4.1 Proper splicing and soldering.	15
				4.2 Correct placement of insulating tape on wires.	10
G. Take care when handling the vehicle.	PS/PT	5. Handling of vehicle.	10	5.1 Used fender covers.	5
				5.2 No traces of soldering debris in vehicle.	5

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 704

MODULE: 10 - LIGHTING CIRCUIT REPAIR

Items	Comments
Type of examination	Candidates are expected to diagnose a lighting circuit problem, then replace a headlight and connect an electric circuit to a trailer.
Prior to the examination	The instructor should cause a lighting problem on a vehicle, such as: - a cut wire; - a defective ground; - a bad contact in a wire, a terminal or a light; - a defective fuse; - a defective relay, etc.
Ruling	Any serious mistake or omission related to the application of the rules of health, safety and environmental protection will immediately put an end to the examination and cause the candidate to fail.
Number of candidates	Three.
Information on the criterion components	
Criterion component 4.1	
Proper splicing and soldering.	The wires must be twisted around one another, not bent one on top of the other.
Minimum performance standard	85 marks and the strict observance of the rules of health, safety and environmental protection.

EVALUATION FORM

Program: Automobile Mechanics
Module: 10 - LIGHTING CIRCUIT REPAIR
Program Code: 5692 **Module Code:** 841 704

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
A. Interpret the information in the technical documentation.	**1. Consultation of technical documentation.**			
	1.1 Accurate choice of electrical drawing.			0 20
B. Diagnose the condition of lighting system circuits, components and relays.	**2. Observance of inspection techniques.**			
	2.1 Observed the manufacturer's recommended techniques.			0 20
	2.2 Made an accurate diagnosis.			0 15
D. Replace lighting system components.	**3. Quality of replacements.**			
	3.1 Circuit in good working order.			0 5
	3.2 Integrity of the system.			0 5
E. Repair wiring harnesses and cables, and their components.	**4. Quality of connections.**			
	4.1 Proper splicing and soldering:			0 15
	- wires twisted, not bent.			
	4.2 Correct placement of insulating tape on wires.			0 10
G. Take care when handling the vehicle.	**5. Handling of vehicle.**			
	5.1 Used fender covers.			0 5
	5.2 No traces of soldering debris in vehicle.			0 5

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 85 marks, plus strict observance of rules of health, safety and environmental protection.

TOTAL: /100

Pass: ☐ **Fail:** ☐

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 712

MODULE: 11 – ENGINE AND PASSENGER COMPARTMENT TEMPERATURE SYSTEMS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 712

MODULE: 11 - ENGINE AND PASSENGER COMPARTMENT TEMPERATURE SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of engine and passenger compartment temperature systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information in the technical documentation.	5	-	• Selection of drawings and diagrams. • Interpretation of information.	
B. Identify the types of cooling, heating and air conditioning systems and their components.	10	15	• Types of systems. • Components of the different systems.	T T
C. Describe the specific characteristics of the components of each system.	10	10	• Function of each component. • Properties of the materials.	T
D. Explain the operation of the cooling, heating and air conditioning systems.	40	50	• Operating principles of the systems under various conditions. • Characteristics of lubricants, antifreeze and refrigerants. • Hazards related to each system.	T T T
E. Recognize foreseeable anomalies in the air conditioning system or in the passenger compartment heating or cooling system.	20	25	• Effects of anomalies on the operation of the cooling and heating systems. • Types of contaminants.	T T
F. Determine the condition of the cooling and heating systems.	15	-	• Use of instruments. • Interpretation of results.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 712

MODULE: 11 - ENGINE AND PASSENGER COMPARTMENT TEMPERATURE SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of engine and passenger compartment temperature systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify the types of cooling, heating and air conditioning systems and their components.	1. Types of systems.	5	1.1 Identification of the different types of systems.	5	1
	2. Components of the different systems.	10	2.1 List of the components of the different systems.	5	1
			2.2 Location of each component.	5	1
C. Describe the specific characteristics of the components of each system.	3. Function of each component.	10	3.1 Explanation of the function of each component.	10	2
D. Explain the operation of the cooling, heating and air conditioning systems.	4. Operating principles of the systems under various conditions.	35	4.1 Description of the operating principles of each system.	35	7
	5. Characteristics of lubricants, antifreeze and refrigerants.	10	5.1 Recognized the characteristics of lubricants, antifreeze and refrigerants.	10	2
	6. Hazards related to each system.	5	6.1 List of the hazards related to each system.	5	1

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 712

MODULE: 11 - ENGINE AND PASSENGER COMPARTMENT TEMPERATURE SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of engine and passenger compartment temperature systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
E. Recognize foreseeable anomalies in the air conditioning system or in the passenger compartment heating or cooling system.	7. Effects of anomalies on the operation of the cooling and heating systems.	20	7.1 Identification of foreseeable anomalies.	10	2
			7.2 Identification of the effects of these anomalies on the systems.	10	2
	8. Types of contaminants.	5	8.1 List of types of contaminants.	5	1

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 712

MODULE: 11 - ENGINE AND PASSENGER COMPARTMENT TEMPERATURE SYSTEMS

Items	Comments
Type of examination	In this theory examination, candidates are to be evaluated on their knowledge of cooling, heating and air conditioning systems, given drawings, diagrams and learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 723

MODULE: 12 – COOLING, HEATING AND AIR CONDITIONING SYSTEM MAINTENANCE AND REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 723

MODULE: 12 - COOLING, HEATING AND AIR CONDITIONING SYSTEM MAINTENANCE AND REPAIR

EXPECTED BEHAVIOUR: To maintain and repair cooling, heating and air conditioning systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Diagnose the condition of the cooling and heating systems.	15	40	• Diagnostic methods for cooling and heating systems.	P
B. Plan the work.	5	-	• Determination of work to be done. • Preparation of equipment.	
C. Repair cooling and heating systems.	20	-	• Replacing components. • Quality of assembly. • Application of sealing methods.	
D. Maintain cooling and heating systems.	10	-	• Quality of adjustments. • Use of cleaning and recycling equipment. • Observance of proportions of water and antifreeze in mixture.	
E. Repair leaks in an air conditioning system.	30	-	• Choice of instruments and equipment. • Detection of refrigerant leaks. • Recovering and recycling refrigerants. • Replacement of components. • Leak-tight system. • Observance of method for emptying and filling the air conditioning system.	
F. Check the operating condition and integrity of the systems.	15	60	• Testing of systems.	P
G. Tidy up the work area.	5	-	• Cleanliness of work area.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 723

MODULE: 12 - COOLING, HEATING AND AIR CONDITIONING SYSTEM MAINTENANCE AND REPAIR

EXPECTED BEHAVIOUR: To maintain and repair cooling, heating and air conditioning systems.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Diagnose the condition of the cooling and heating systems.	PS/PT	1. Diagnostic methods for cooling and heating systems.	40	1.1 Carefully inspected the cooling and heating systems.	15
				1.2 Properly used the antifreeze tester.	15
				1.3 Correct diagnosis of problem(s).	10
F. Check the operating condition and integrity of the air conditioning system.	PS/PT	2. Testing of system.	60	2.1 Properly connected the pressure gauge.	10
				2.2 Properly checked for leaks in equipment connections.	10
				2.3 Observed the manufacturer's recommended methods for checking the air conditioning system.	20
				2.4 Accurate recording and interpretation of readings.	10
				2.5 Properly disconnected the pressure gauge.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 723

MODULE: 12 - COOLING, HEATING AND AIR CONDITIONING SYSTEM MAINTENANCE AND REPAIR

Items	Comments
Type of examination	Candidates are expected to diagnose the condition of the cooling and heating systems and to check the operating condition of an air conditioning system.
Number of candidates	Three.
Ruling	Any serious mistake or omission related to the application of the rules of health, safety and environmental protection will immediately put an end to the examination and cause the candidate to fail.
Information on the criterion components	
Criterion component 1.1	
Carefully inspected the cooling and heating systems.	Candidates are expected to make a detailed visual inspection of the systems.
Criterion component 2.4	
Accurate recording and interpretation of readings.	Candidates are expected to measure the pressure and the temperature and to interpret the readings correctly.
Criterion component 2.5	
Properly disconnected the pressure gauge.	When the equipment is being disconnected, the examiner must check that there is no major refrigerant leak.
Minimum performance standard	80 marks and the strict observance of the rules of health, safety and environmental protection.

PERFORMANCE EVALUATION FORM

Program: Automobile Mechanics
Module: 12 - COOLING, HEATING AND AIR CONDITIONING SYSTEM MAINTENANCE AND REPAIR
Program Code: 5692 **Module Code:** 841 723

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
A. Diagnose the condition of the cooling and heating systems.	**1. Diagnostic methods for cooling and heating systems.**			
	1.1 Carefully inspected the cooling and heating systems:			0 15
	- visual inspection of			
	• heating system	❑	❑	
	• cooling system.	❑	❑	
	1.2 Properly used the antifreeze tester.			0 15
	1.3 Correct diagnosis of problem(s) related to:			0 10
	- the heating system	❑	❑	
	- the cooling system.	❑	❑	

Evaluation Focuses	Observations and Judgments			Mark	
		Yes	**No**		
F. Check the operating condition and integrity of the air conditioning system.	**2. Testing of system.**				
	2.1 Properly connected the pressure gauge.			**0**	**10**
	2.2 Properly checked for leaks in equipment connections.			**0**	**10**
	2.3 Observed the manufacturer's recommended methods for checking the air conditioning system.			**0**	**20**
	2.4 Accurate recording and interpretation of readings related to:			**0**	**10**
	- pressure	❑	❑		
	- temperature.	❑	❑		
	2.5 Properly disconnected the pressure gauge:			**0**	**10**
	- no major refrigerant leaks.				

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 80 marks, plus strict observance of rules of health, safety and environmental protection.

TOTAL: /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 744

MODULE: 13 – MOTOR VEHICLE MAINTENANCE

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 744

MODULE: 13 - MOTOR VEHICLE MAINTENANCE

EXPECTED BEHAVIOUR: To perform general maintenance on a motor vehicle.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Find the safety instructions for the general maintenance of the vehicle.	10	-	• location of instructions and warnings in the technical documentation. • interpretation of instructions and warnings.	
B. Detect anomalies related to general maintenance.	10	-	• Detection of problems. • Recommendations on the nature of the work to be done.	
C. Plan the maintenance work.	5	-	• Determination of work to be done. • Choice of tools, instruments and products.	
D. Perform maintenance tasks related to the battery.	10	40	• Verification of the state of charge. • Replacement of battery. • Use of equipment.	P P
E. Perform lubrication tasks.	15	-	• Oil change methods. • Lubrication of body parts. • Replacement of oil filters. • Repairs related to oil leaks.	
F. Perform maintenance tasks on the wheels.	15	45	• Replacement of tires. • Tire rotation. • Repair of tire leaks. • Balancing of wheels. • Replacement of wheel bearings.	P P

*P: Practical Examination T: Theory Examination

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 744

MODULE: 13 - MOTOR VEHICLE MAINTENANCE

EXPECTED BEHAVIOUR: To perform general maintenance on a motor vehicle.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
G. Perform tasks related to the maintenance of the entire vehicle.	25	15	• Adjustment of body parts. • Replacement of belts. • Replacement of air filters. • Replacement of exhaust system components.	P
H. Check the quality of the work.	5	-	• Testing of parts repaired. • Maintenance sticker. • Quality of report and recommendations.	
I. Tidy up the work area.	5	-	• Recovery of recyclable products. • Cleanliness of work area.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 744

MODULE: 13 - MOTOR VEHICLE MAINTENANCE

EXPECTED BEHAVIOUR: To perform general maintenance on a motor vehicle.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
D. Perform maintenance tasks related to the battery.	PS	1. Verification of the state of charge.	30	1.1 Accurately located manufacturer's specifications.	5
				1.2 Checked the state of charge and capacity of the battery in conformity with the manufacturer's specifications.	15
				1.3 Accurately recorded the readings.	10
	PS	2. Use of equipment.	10	2.1 Observed safety rules for using the battery charger.	10
F. Perform maintenance tasks on the wheels.	PS/PT	3. Replacement of tires.	30	3.1 Properly removed tire.	5
				3.2 Properly used equipment.	5
				3.3 Integrity of tire and rim after replacement.	5
				3.4 No tire leaks.	5
				3.5 Properly observed torque value and sequence.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 744

MODULE: 13 - MOTOR VEHICLE MAINTENANCE

EXPECTED BEHAVIOUR: To perform general maintenance on a motor vehicle.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
G. Perform tasks related to the maintenance of the entire vehicle.	PS/PT	4. Balancing of wheels.	15	4.1 Observed the proper technique and safety rules for using the equipment.	5
				4.2 Wheels precisely balanced.	5
				4.3 Balance weights firmly secured.	5
	PS/PT	5. Replacement of belts.	15	5.1 Observed manufacturer's recommendations for removing belt.	5
				5.2 Correct replacement of belt.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 744

MODULE: 13 - MOTOR VEHICLE MAINTENANCE

Items	Comments
Type of examination	In this practical examination, candidates are expected to check the state of charge of the battery, recharge the battery, replace and balance a wheel, and replace a belt with or without a tensioner.
Number of candidates	Three.
Ruling	Any serious mistake or omission related to the application of the rules of health, safety and environmental protection will immediately put an end to the examination and cause the candidate to fail.
Information on the criterion components	
Criterion component 2.1	
Observed safety rules for using the battery charger.	Candidates are expected to attach connectors to terminals correctly, to place the equipment in the "off" position before using and connecting it, and to adjust the charge according to the state of charge of the battery.
Criterion component 3.2	
Properly used equipment.	Candidates are expected to lubricate the tire before removing it, as well as when mounting it. They must also inflate the tire according to the instructor's specifications.
Criterion component 3.5	
Properly observed torque value and sequence.	The examiner should check that candidates have observed the proper sequence and torque value.
Criterion component 4.1	
Observed the proper technique and safety rules for using the equipment.	The wheel should be firmly held in place and the equipment properly programmed.
Minimum performance standard	80 marks and the strict observance of the rules of health, safety and environmental protection.

EVALUATION FORM

Program: Automobile Mechanics
Module: 13 - MOTOR VEHICLE MAINTENANCE
Program Code: 5692 **Module Code:** 841 744

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
D. Perform maintenance tasks related to the battery.	**1. Verification of the state of charge.**			
	1.1 Accurately located manufacturer's specifications.			0 5
	1.2 Checked the state of charge and capacity of the battery in conformity with the manufacturer's specifications.			0 15
	1.3 Accurately recorded the readings.			0 10
	2. Use of equipment.			
	2.1 Observed safety rules for using the battery charger:			0 10
	- correctly attached connectors to terminals	❑	❑	
	- ensured that the equipment was in the "off" position before using it, and before disconnecting it	❑	❑	
	- adjusted charge in conformity with state of charge of battery.	❑	❑	
F. Perform maintenance tasks on the wheels.	**3. Replacement of tires.**			
	3.1 Properly removed tire.			0 5
	3.2 Properly used equipment:			0 5
	- lubricated tire before removing it	❑	❑	
	- lubricated tire prior to mounting it	❑	❑	
	- inflated tire according to specifications.	❑	❑	
	3.3 Integrity of tire and rim after replacement.			0 5
	3.4 No tire leaks.			0 5
	3.5 Properly observed torque value and sequence:			0 10
	- observed sequence	❑	❑	
	- observed torque value.	❑	❑	

Evaluation Focuses	Observations and Judgments			Mark
		Yes	**No**	
	4. Balancing of wheels.			
	4.1 Observed the proper technique and safety rules for using the equipment:			0 5
	- wheel held firmly in place	❑	❑	
	- equipment correctly programmed.	❑	❑	
	4.2 Wheels precisely balanced.			0 5
	4.3 Balance weights firmly secured.			0 5
G. Perform tasks related to the maintenance of the entire vehicle.	**5. Replacement of belts.**			
	5.1 Observed manufacturer's recommendations for removing belt.			0 5
	5.2 Correct replacement of belt:			0 10
	- belt carefully aligned and adjusted, if necessary.			

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 80 marks, plus strict observance of rules of health, safety and environmental protection.

TOTAL: /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PARTICIPATION EVALUATION CHECKLIST

WORKSHEET

PROGRAM ANALYSIS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

EXPECTED OUTCOME: To apply job search techniques.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 1: PLANNING THE JOB SEARCH	30	20	
- Learning about sources of information available for the job search.			• Consult the sources of information made available. • In a group, discuss the information gathered, its relevance and the logical sequence of operations in a job search.
- Determining the steps involved in the job search.			• Determine the steps involved in a job search.
PHASE 2: CARRYING OUT THE JOB SEARCH	55	65	
- Defining the parts and objectives of a letter of introduction and a résumé.			
- Learning about various models of letters of introduction and résumés; recognizing their strengths and weaknesses, given their objectives with respect to the job sought.			• Learn about the different models of letters of introduction and résumés.
- Determining the attitudes and behaviour to adopt or avoid during a job interview.			• Consult the sources of information provided related to the job interview. • In a group, discuss the attitudes and behaviour to adopt or avoid during the job interview.

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

EXPECTED OUTCOME: To apply job search techniques.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
- Finding various means of ensuring follow-up.			• Determine various means of ensuring follow-up when carrying out a job search.
PHASE 3: EVALUATING THEIR POTENTIAL	15	15	
- Recognizing their strengths and weaknesses with respect to each step involved in the job search; finding ways of improving.			• In a group, discuss their strengths and weaknesses with respect to each step involved in the job search.

TABLE OF SPECIFICATIONS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

EXPECTED OUTCOME: To apply job search techniques.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 1: Planning the job search			
1. Consult the sources of information made available.	5	1.1 Gather information related to the steps involved in a job search.	5
2. Determine the steps involved in a job search.	15	2.1 Identify and explain each step involved in a job search.	10
		2.2 List five companies to which they will apply.	5
PHASE 2: Carrying out the job search			
3. Learn about the different models of letters of introduction and résumés.	25	3.1 Write a letter of introduction and a résumé.	10
		3.2 Send the letter of introduction and the résumé to three potential employers.	15
4. Consult the sources of information provided related to the job interview.	10	4.1 Gather information on how to plan a job interview.	10
5. In a group, discuss the attitudes and behaviour to adopt or avoid during the job interview.	15	5.1 Identify various attitudes and behaviours to adopt or avoid during a job interview and explain their relationship to the outcome of the interview.	15
6. Determine various means of ensuring follow-up when carrying out a job search.	15	6.1 Identify various means of ensuring follow-up and explain briefly the importance of each one.	15

TABLE OF SPECIFICATIONS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

EXPECTED OUTCOME: To apply job search techniques.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 3: Evaluating their potential			
7. In a group, discuss their strengths and weaknesses with respect to each step involved in the job search.	15	7.1 Describe their strengths and weaknesses, and identify ways of improving.	15

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

Items	Comments
Type of examination	This examination consists of three phases to be evaluated throughout the module. PHASE 1: Planning the job search. PHASE 2: Carrying out the job search. PHASE 3: Evaluating their potential. Candidates are to be provided with various documents related to a job search.
Number of candidates	All candidates.
Note	In this examination, only the candidates' participation is to be evaluated, not their performance.
Information concerning the criterion components	
Criterion component 2.1	
Identify and explain each step involved in a job search.	Candidates are expected to identify and explain each of the steps involved in a job search.
Criterion component 4.1	
Gather information on how to plan a job interview.	The information gathered must relate to the job being sought and the candidate being interviewed.

PROGRAM: Automobile Mechanics **CODE:** 841 731

MODULE: 14 – JOB SEARCH TECHNIQUES

Items	Comments
Criterion component 5.1	
Identify various attitudes and behaviours to adopt or avoid during a job interview and explain their relationship to the outcome of the interview.	Each candidate is expected to describe an attitude and a behaviour to adopt during a job interview, as well as an attitude or a behaviour to avoid. Moreover, the relationship between these attitudes or behaviours and the outcome of the interview must be shown.
Criterion component 6.1	
Identify various means of ensuring follow-up and explain briefly the importance of each one.	Candidates are expected to describe various means, including a telephone call, a request for an interview and a reminder.
Minimum performance standard	15 YES.

PARTICIPATION EVALUATION CHECKLIST

Program: Automobile Mechanics
Module: 14 - JOB SEARCH TECHNIQUES
Program Code: 5692 **Module Code:** 841 731

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Mark Yes	Mark No
Phase 1:			
Planning the job search	**1. Consult the sources of information made available.**		
	1.1 Gather information related to the steps involved in a job search.	☐	☐
	2. Determine the steps involved in a job search.		
	2.1 Identify and explain each step involved in a job search:		
	- steps involved in a job search	☐	☐
	- explanation of each step.	☐	☐
	2.2 List five companies to which they will apply.	☐	☐
Phase 2:			
Carrying out the job search	**3. Learn about the different models of letters of introduction and résumés.**		
	3.1 Write a letter of introduction and a résumé:		
	- letter of introduction	☐	☐
	- résumé.	☐	☐
	3.2 Send the letter of introduction and the résumé to three potential employers:		
	- Company 1	☐	☐
	- Company 2	☐	☐
	- Company 3.	☐	☐
	4. Consult the sources of information provided related to the job interview.		
	4.1 Gather information related to the planning of a job interview:		
	the job being sought	☐	☐
	- the candidate being interviewed.	☐	☐

Evaluation Focuses	Observations and Judgments	Mark Yes	Mark No
	5. In a group, discuss the attitudes and behaviour to adopt or avoid during the job interview.		
	5.1 Identify various attitudes and behaviours to adopt or avoid during a job interview and explain their relationship to the outcome of the interview:		
	- an attitude and a behaviour to adopt	❒	❒
	- an attitude and a behaviour to avoid	❒	❒
	- relationship shown with the outcome of the interview.	❒	❒
	6. Determine various means of ensuring follow-up when carrying out a job search.		
	6.1 Identify various means of ensuring follow-up and explain briefly the importance of each one:		
	- telephone call	❒	❒
	- request for the interview	❒	❒
	- reminder, if necessary.	❒	❒
Phase 3:			
Evaluating their potential	**7. In a group, discuss their strengths and weaknesses with respect to each step involved in the job search.**		
	7.1 Describe their strengths and weaknesses, and identify:		
	- strengths	❒	❒
	- weaknesses	❒	❒
	- ways of improving.	❒	❒

FINAL RESULT: _____ **YES**

Minimum performance standard: 15 YESes.

Pass: ❒ **Fail:** ❒ **Name of examiner:** _____

AUTOMOBILE MECHANICS
DVS 5692
WORKSHEET
Planning a job search

Job search **841 731**

NAME OF STUDENT _____

SCHOOL _____

GROUP NUMBER _____

PART I: ABOUT THE JOB SOUGHT

Description of the job sought _____

_____

_____

_____

Products and services _____

_____

_____

_____

Competition _____

_____

_____

_____

Other information, such as clientele and region _____

_____

_____

_____

PART II: ABOUT YOURSELF

Training related to the job sought

Work-related achievements

Questions to put to the interviewer

Other information

PROGRAM: Automobile Mechanics **CODE:** 841 754

MODULE: 15 – ROAD HANDLING SYSTEMS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 754

MODULE: 15 - ROAD HANDLING SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of road handling systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information found in the technical documentation.	10	-	• Selection of drawings and diagrams. • Interpretation of the information.	
B. Identify the different types of systems and their components: - suspension - steering system - conventional brakes - shafts and joints.	15	32	• Types of systems and their components. • Location of parts on vehicle.	T
C. Explain the specific characteristics of the components.	25	20	• Function of the components. • Properties of the materials.	T
D. Explain the operation of each system.	20	28	• Properties of brake fluids and hydraulic oils. • Functional relationships among the different components. • Operation of the entire system. • Geometry of various suspensions.	T T T T
E. Recognize foreseeable anomalies.	15	20	• Anomalies related to the specific characteristics of the components. • Effects of anomalies on the handling of the vehicle.	T T
F. Determine the general condition of the different systems.	15	-	• Signs of malfunction. • Degree of wear of the components	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 754

MODULE: 15 - ROAD HANDLING SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of road handling systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify the different types of systems and their components: - suspension - steering system - conventional brakes - shafts and joints.	1. Types of systems and their components.	32	1.1 Identification of the components.	32	8
C. Explain the specific characteristics of the components.	2. Function of the components.	20	2.1 Description of the functions of the components.	20	5
D. Explain the operation of each system.	3. Properties of brake fluids and hydraulic oils.	4	3.1 Description of the properties of brake fluids and hydraulic oils.	4	1
	4. Functional relationships among the different components.	8	4.1 Explanation of the functional relationships among the different components.	8	2
	5. Operation of the entire system.	8	5.1 Description of the operation of the parts of the entire system.	8	2
	6. Geometry of various suspensions.	8	6.1 Description of adjustments.	8	2
E. Recognize foreseeable anomalies.	7. Anomalies related to the specific characteristics of the components.	12	7.1 Identification of anomalies related to the components.	12	3
	8. Effects of anomalies on the handling of the vehicle.	8	8.1 Identification of the effects of anomalies on the vehicle.	8	2

PROGRAM: Automobile Mechanics **CODE:** 841 767

MODULE: 16 – SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 767

MODULE: 16 - SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR

EXPECTED BEHAVIOUR: To repair suspensions, steering systems and conventional brakes.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Diagnose the condition of the different systems: - suspension - steering system - conventional brakes - shafts, half-shafts and joints.	10	-	• Inspection techniques. • Diagnosis.	
B. Plan the work.	5	-	• Determination of work to be done. • Preparation of appropriate tools, equipment and instruments.	
C. Replace components of the different systems.	20	26	• Removal techniques. • Installation techniques. • Precision of adjustments. • Observance of safety rules and precautionary measures.	P P P
D. Disassemble the components.	20	-	• Disassembly techniques. • Cleaning and orderly organization of parts. • Inspection techniques.	
E. Apply maintenance and repair techniques.	15	-	• Techniques for bleeding brakes and power steering system. • Techniques for sealing components and lines. • Adjustments for each system. • Lubrication of each system. • Remachining of brake components. • Replacement of component parts.	 P

*P: Practical Examination T: Theory Examination

PROGRAM: Automobile Mechanics CODE: 841 767

MODULE: 16 - SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR

EXPECTED BEHAVIOUR: To repair suspensions, steering systems and conventional brakes.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
F. Reassemble components.	20	52	• Use of tools and equipment. • Observance of reassembly techniques. • Quality of adjustments.	P P
G. Check the operating condition of the systems.	10	13	• Testing of systems. • Accuracy of report.	P
H. Take care when handling vehicle.	-	4	• Careful handling of vehicles.	P
I. Observe health and safety rules.	-	5	• Observance of health and safety rules.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 767

MODULE: 16 - SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR

EXPECTED BEHAVIOUR: To repair suspensions, steering systems and conventional brakes.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
C. Replace components of the suspension.	PS	1. Removal techniques.	8	1.1 Correctly applied the manufacturer's recommended technique for removing steering spindle.	8
F. Reassemble components of the suspension.	PS	2. Use of tools and equipment.	4	2.1 Correctly used pullers.	4
	PT	3. Observance of reassembly techniques.	10	3.1 Correct reassembly of all component parts.	10
C. Replace components of the suspension.	PS	4. Installation techniques.	10	4.1 Correctly installed steering spindle.	10
	PT	5. Precision of adjustments.	8	5.1 Observance of the manufacturer's torque specifications.	8
F. Reassemble brake components.	PT/PS	6. Observance of reassembly techniques.	38	6.1 Proper organization and cleanliness of components.	15
				6.2 Correctly adjusted brake shoes to drum.	10
				6.3 Observed the proper technique for bleeding the brake system.	10
				6.4 Maximum level of brake fluid in the reservoir.	3

N.B. Each system is to be evaluated separately, as are the observable aspects related to removal and installation of components.

* Evaluation Strategy: process (PS) or product (PT) evaluation

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 767

MODULE: 16 - SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR

EXPECTED BEHAVIOUR: To repair suspensions, steering systems and conventional brakes.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
G. Check the operating condition of the brakes.	PT	7. Testing of systems.	13	7.1 Proper functioning of brake pedal.	10
				7.2 No brake fluid leaks.	3
H. Take care when handling vehicle.	PS	8. Careful handling of vehicles.	4	8.1 Cleaned off all traces of brake fluid from vehicle.	2
				8.2 Used fender covers and seat protector.	2
I. Observe health and safety rules.	PS	9. Observance of health and safety rules.	5	9.1 Observed health and safety rules.	5

N.B. Each system is to be evaluated separately, as are the observable aspects related to removal and installation of components.

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 767

MODULE: 16 - SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR

Items	Comments
Type of examination	In this examination, candidates are expected to remove and install a steering spindle, to remove and reassemble brake components on a front and back wheel, and to test the braking system. Candidates are also expected to remove the brakes from a front and back wheel, as well as the brake bleeder screw. This operation is not to be evaluated.
Note	This examination is made up of two parts: Part I evaluates the suspension, Part II the brakes.
Number of candidates	Three.
Information of the criterion components	
Criterion component 3.1	
Correct reassembly of all component parts.	All the component parts must be assembled and positioned correctly.
Criterion component 4.1	
Correctly installed steering spindle.	The examiner must check that the alignment marks are correctly positioned.
Criterion component 6.1	
Proper organization and cleanliness of components.	All the components of the front and back wheels must be clean and correctly reassembled.
Criterion component 9.1	
Observed health and safety rules.	The examiner must check that candidates wear protective goggles when bleeding the brakes and that there is no brake fluid on the floor.
Minimum performance standard	Part I: 32 marks out of 40; Part II: 51 marks out of 60.

EVALUATION FORM

Program: Automobile Mechanics
Module: 16 - SUSPENSION, STEERING SYSTEM AND CONVENTIONAL BRAKE REPAIR
Program Code: 5692 **Module Code:** 841 767

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
	PART I			
C. Replace components of the suspension.	**1. Removal techniques.**			
	1.1 Correctly applied the manufacturer's recommended technique for removing steering spindle.			0 8
F. Reassemble components of the suspension.	**2. Use of tools and equipment.**			
	2.1 Correctly used pullers.			0 4
	3. Observance of reassembly techniques.			
	3.1 Correct reassembly of all component parts:			0 10
	- no missing parts	❑	❑	
	- all parts correctly placed.	❑	❑	
C. Replace components of suspension	**4. Installation techniques.**			
	4.1 Correctly installed steering spindle:			0 10
	- alignment marks correctly positioned.	❑	❑	
	5. Precision of adjustments.			
	5.1 Observance of the manufacturer's torque specifications.			0 8

Evaluation Focuses	Observations and Judgments			Mark
	PART II	**Yes**	**No**	
F. Reassemble brake components.	**6. Observance of reassembly techniques.**			
	6.1 Proper organization and cleanliness of components:			0 15
	- correct placing of brake parts on front wheel	❑	❑	
	- cleanliness of brake parts on front wheel	❑	❑	
	- correct placing of brake parts on back wheel	❑	❑	
	- cleanliness of brake parts on back wheel.	❑	❑	
	6.2 Correctly adjusted brake shoes to drum.			0 10
	6.3 Observed the proper technique for bleeding the brake system.			0 10
	6.4 Maximum level of brake fluid in the reservoir.			0 3
G. Check the operating condition of the brakes.	**7. Testing of systems.**			
	7.1 Proper functioning of brake pedal.			0 10
	7.2 No brake fluid leaks.			0 3
H. Take care when handling vehicle.	**8. Careful handling of vehicles.**			0 4
	8.1 Cleaned off all traces of brake fluid from vehicle.	❑	❑	
	8.2 Used fender covers and seat protector.	❑	❑	
I. Observe health and safety rules.	**9. Observance of health and safety rules.**			
	9.1 Observed health and safety rules:			0 5
	- wore protective goggles when bleeding brakes	❑	❑	
	- left no traces of brake fluid on floor.	❑	❑	

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: Part I: 32 marks, Part II: 51 marks. **TOTAL:** /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 776

MODULE: 17 – TRANSMISSION ASSEMBLIES

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 776

MODULE: 17 - TRANSMISSION ASSEMBLIES

EXPECTED BEHAVIOUR: To analyze the operation of transmission assemblies.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information in the technical documentation.	5	-	• Selection of drawings and diagrams. • Interpretation of the information.	
B. Identify different types of systems and their components.	25	25	• Types of systems. • Components of each system.	 T
C. Explain the specific characteristics of the components.	25	35	• Function of each component. • Properties of the materials. • Adjustment techniques.	T T T
D. Explain the operation of each system.	25	20	• Operation of the systems.	T
E. Recognize foreseeable anomalies.	15	20	• Foreseeable anomalies. • Effects of a particular anomaly.	T
F. Determine the general condition of the different systems.	5	-	• Inspection. • Detection of signs of malfunction. • Testing of system.	

*P: Practical Examination R: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 776

MODULE: 17 - TRANSMISSION ASSEMBLIES

EXPECTED BEHAVIOUR: To analyze the operation of transmission assemblies.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify different types of systems and their components.	1. Components of each system.	25	1.1 List of the components of each system.	10	2
			1.2 Location of components on vehicle.	15	3
C. Explain the specific characteristics of the components.	2. Function of each component.	35	2.1 Description of the functions of the components.	15	3
	3. Properties of the materials.		3.1 Identification of the properties of the materials.	10	2
	4. Adjustment techniques.		4.1 Explanation of adjustment techniques.	10	2
D. Explain the operation of each system.	5. Operation of the systems.	20	5.1 Explanation of the relationships among the different components.	10	2
			5.2 Description of the operation of the systems under different conditions.	10	2
E. Recognize foreseeable anomalies.	6. Foreseeable anomalies.	20	6.1 Identification of the foreseeable anomalies related to the specific characteristics of the components.	10	2
			6.2 Recognition of the effects of a particular anomaly on the operation of the system and the handling of the vehicle.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 776

MODULE: 17 - TRANSMISSION ASSEMBLIES

Items	Comments
Type of examination	In this theory examination, candidates will be evaluated on their knowledge of manual and automatic transmissions, differentials, clutches and transfer cases. The examiner should ask questions, using drawings, diagrams and learning situations.
Number of questions	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 787

MODULE: 18 – TRANSMISSION ASSEMBLY REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 787

MODULE: 18 - TRANSMISSION ASSEMBLY REPAIR

EXPECTED BEHAVIOUR: To repair transmission assemblies.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Diagnose the condition of the different transmission parts: - manual gear box - differential - transfer case - clutch.	10	8	• Observance of manufacturer's recommendations. • Determination of the condition of the components. • Accuracy of diagnosis.	P
B. Plan the work.	3	-	• Determination of work to be done. • Preparation of tools, equipment and instruments.	
C. Replace components of the different systems.	10	-	• Removal and installation methods. • Adjustments and lubrication	
D. Disassemble components.	20	37	• Inspection of differential prior to disassembly. • Observance of manufacturer's recommended disassembly methods. • Use of tools and equipment. • Disassembly techniques. • Cleaning and organization of parts. • Inspection of components.	P P P
E. Apply maintenance and repair techniques.	10	-	• Bleeding and sealing techniques. • Adjustment and lubrication. • Replacement of component parts in conformity with the manufacturer's specifications.	

*P: Practical Examination T: Theory Examination

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 787

MODULE: 18 - TRANSMISSION ASSEMBLY REPAIR

EXPECTED BEHAVIOUR: To repair transmission assemblies.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
F. Reassemble the components.	20	41	• Reassembly techniques. • Quality of reassembly. • Precision of adjustments.	P P P
G. Perform tasks on an automatic gearbox.	20	-	• Removal and installation techniques. • Leak-tightness of transmission and lines. • Installation of gearbox on vehicle.	
H. Check the operating condition and integrity of the systems.	7	14	• Testing of systems. • Quality of report.	P P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 787

MODULE: 18 - TRANSMISSION ASSEMBLY REPAIR

EXPECTED BEHAVIOUR: To repair transmission assemblies.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
D. Disassemble the components of the differential.	PS	1. Observance of manufacturer's recommended disassembly methods.	18	1.1 Took accurate readings.	10
				1.2 Handled components with care.	3
				1.3 Checked that bearings and caps were correctly marked.	5
F. Reassemble the components of the differential.	PS	2. Reassembly techniques.	6	2.1 Observed the sequence recommended by the manufacturer.	6
	PT	3. Quality of reassembly.	7	3.1 Correct reassembly of the differential.	7
	PT	4. Precision of adjustments.	15	4.1 Precise adjustment of the backlash between ring gear and pinion gear.	10
				4.2 Precise adjustment of the total bearing preload of the differential.	5
H. Check the operating condition and integrity of the differential.	PT	5. Quality of report.	4	5.1 Accurate and well-written report.	4

N.B. The differential and the manual gearbox are to be evaluated separately.

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics CODE: 841 787

MODULE: 18 - TRANSMISSION ASSEMBLY REPAIR

EXPECTED BEHAVIOUR: To repair transmission assemblies.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Diagnose the condition of the manual gearbox.	PT	6. Determination of the condition of the components.	8	6.1 Accurate diagnosis.	8
D. Disassemble the components of the manual gearbox.	PS	7. Use of tools and equipment.	5	7.1 Correctly used tools and equipment.	5
	PT	8. Inspection of components.	14	8.1 No dirt on components.	4
				8.2 Accurate analysis of the condition of the components.	10
F. Reassemble the components of the manual gearbox.	PS	9. Reassembly techniques.	4	9.1 Took the necessary steps to avoid damaging components.	4
	PT	10. Quality of reassembly.	9	10.1 Inclusion and proper positioning of all the components.	5
				10.2 Observance of the manufacturer's torque specifications.	4
H. Check the operating condition and integrity of the manual gearbox.	PS	11. Testing of systems.	10	11.1 Carried out the appropriate tests to ensure the proper operating condition of the manual gearbox.	10

N.B. The differential and the manual gearbox are to be evaluated separately.

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics CODE: 841 787

MODULE: 18 - TRANSMISSION ASSEMBLY REPAIR

Items	Comments
Type of examination	In this examination, candidates are expected to disassemble and reassemble the components of a differential, carry out a quality control test on the differential, diagnose the condition of the manual gearbox, disassemble and reassemble its components and ensure its proper operating condition.
Note	This examination is made up of two parts: Part I evaluates the candidates' knowledge of the differential, and Part II their knowledge of the manual gearbox.
Duration of examination	Part I: 1 hour and 45 min. Part II: 1 hour and 45 min.
Number of candidates	Four (two candidates start Part I and the other two, Part II of the evaluation).
Ruling	Any serious mistake or omission related to the application of the rules of health, safety and environmental protection will immediately put an end to the examination and cause the candidate to fail.
Information on the criterion components	
Criterion component 1.1	
Took accurate readings.	The examiner must check the warping of the ring gear, the backlash between ring gear and pinion gear, the bearing preload of the differential and the backlash between side gears and pinion gears.
Criterion component 3.1	
Correct reassembly of the differential.	**All** components must be correctly reassembled and the cap bearings tightened according to the manufacturer's torque specifications.
Minimum performance standard	Part I: 40 marks out of 50; Part II: 40 marks out of 50. A pass mark in each part, and the strict observance of the rules of health, safety and environmental protection.

EVALUATION FORM

Program: Automobile Mechanics
Module: 18 - TRANSMISSION ASSEMBLY REPAIR
Program Code: 5692 **Module Code:** 841 787

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments			Mark
	PART I	**Yes**	**No**	
D. Disassemble the components of the differential.	**1. Observance of manufacturer's recommended disassembly methods.**			
	1.1 Took accurate readings:			0 10
	- warping of ring gear	❑	❑	
	- backlash between ring gear and pinion gear	❑	❑	
	- bearing preload of differential	❑	❑	
	- backlash between side gears and pinion gears.	❑	❑	
	1.2 Handled components with care.			0 3
	1.3 Checked that bearings and caps were correctly marked.			0 5
F. Reassemble the components of the differential.	**2. Reassembly techniques.**			
	2.1 Observed the sequence recommended by the manufacturer.			0 6
	3. Quality of assembly.			
	3.1 Correct reassembly of the differential:			0 7
	- correct reassembly of **all** components in the case	❑	❑	
	- cap bearings tightened according to manufacturer's torque specifications.	❑	❑	
	4. Precision of adjustments.			
	4.1 Precise adjustment of the backlash between ring gear and pinion gear.			0 10
	4.2 Precise adjustment of the total bearing preload of the differential.			0 5

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
H. Check the operating condition and integrity of the differential.	**5. Quality of report.**			
	5.1 Accurate and well-written report.			0 4
	PART II			
A. Diagnose the condition of the manual gearbox.	**6. Determination of the condition of the components.**			
	6.1 Accurate diagnosis.			0 8
D. Disassemble the components of the manual gearbox.	**7. Use of tools and equipment.**			
	7.1 Correctly used tools and equipment.			0 5
	8. Inspection of components.			
	8.1 No dirt on components.			0 4
	8.2 Accurate analysis of the condition of components.			0 10
F. Reassemble the components of the manual gearbox.	**9. Reassembly techniques.**			
	9.1 Took the necessary steps to avoid damaging components.			0 4
	10. Quality of reassembly.			
	10.1 Inclusion and proper positioning of all the components.			0 5
	10.2 Observance of the manufacturer's torque specifications.			0 4
H. Check the operating condition and integrity of the manual gearbox.	**11. Testing of systems.**			
	11.1 Carried out the appropriate tests to ensure the proper operating condition of the manual gearbox.			0 10

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: **Part I: 40 marks, Part II: 40 marks; a pass mark in each part, plus observance of rules of health, safety and environmental protection.**

TOTAL: /100

Pass: ☐ **Fail:** ☐

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 794

MODULE: 19 – BASIC COMPUTER-CONTROLLED SYSTEMS

PROGRAM ANALYSIS TABLE

TABLES OF SPECIFICATIONS

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 794

MODULE: 19 - BASIC COMPUTER-CONTROLLED SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of a basic computer-controlled system.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Identify the parts of a basic computer-controlled system.	10	15	• Identification of the parts of a basic system. • Types of sensors and actuators.	 T
B. Describe the specific characteristics of the different types of components.	30	25	• Specific characteristics of the different types of sensors. • Specific characteristics of the microcomputer and the microprocessor. • Specific characteristics of the different types of actuators.	T T
C. Explain the operation of a system comprising a sensor, a microprocessor and an actuator.	30	10	• Types of signals a sensor can send. • Types of functions a microprocessor can perform. • Types of functions an actuator can perform.	T T
D. Recognize foreseeable anomalies in the circuits of a computer-controlled system.	20	10	• Foreseeable anomalies. • Coding systems used to indicate an anomaly.	 T
E. Diagnose the condition of a basic computer-controlled system and its components.	10	40	• Selection of information. • Use of diagnostic equipment. • Consideration of warnings to avoid damaging the system. • Accuracy of measurements. • Explanation of results.	 P P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 794

MODULE: 19 - BASIC COMPUTER-CONTROLLED SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of a basic computer-controlled system.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
A. Identify the parts of a basic computer-controlled system.	1. Identification of the types of sensors and actuators.	15	1.1 Identification of the different types of sensors and actuators.	15	3
B. Describe the specific characteristics of the different types of components.	2. Specific characteristics of the different types of sensors.	15	2.1 Description of the specific characteristics of the different types of sensors.	5	1
			2.2 Description of the specific characteristics of the operation of the different types of sensors.	10	2
	3. Specific characteristics of the different types of actuators	10	3.1 Description of the specific characteristics of the different types of actuators.	5	1
			3.2 Description of the specific characteristics of the operation of the different types of actuators.	5	1
C. Explain the operation of a system comprising a sensor, a micro-processor and an actuator.	4. Types of signals a sensor can send.	5	4.1 Identification of the types of signals a sensor can send.	5	1
	5. Types of functions a micro-processor can perform.	5	5.1 Description of the types of functions a microprocessor can perform.	5	1
D. Recognize foreseeable anomalies in the circuits of a computer-controlled system.	6. Coding systems used to indicate an anomaly.	10	6.1 Identification of the coding systems used by the microprocessor to indicate an anomaly.	10	2

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 794

MODULE: 19 - BASIC COMPUTER-CONTROLLED SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of a basic computer-controlled system.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
E. Diagnose the condition of a basic computer-controlled system and its components.	PS	1. Use of diagnostic equipment.	15	1.1 Observed the proper techniques for using the diagnostic equipment.	15
	PT	2. Accuracy of measurements.	25	2.1 Accurate measurements.	15
				2.2 Accurate interpretation of the results.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics **CODE:** 841 805

MODULE: 20 – STARTING AND CHARGING SYSTEMS AND ELECTROMAGNETIC ACCESSORIES

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 805

MODULE: 20 - STARTING AND CHARGING SYSTEMS AND ELECTROMAGNETIC ACCESSORIES

EXPECTED BEHAVIOUR: To analyze the operation of starting and charging systems and electromagnetic accessories.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Find information in the technical documentation.	10	-	• Selection of electrical drawings and diagrams of the different systems. • Interpretation of the information.	
B. Identify the starting and charging systems and the electromagnetic accessories, and their components.	20	30	• Types of systems.	T
C. Describe the specific characteristics of the components.	20	30	• Specific characteristics of the components.	T
D. Explain the operation of the systems.	20	15	• Functional relationships among the different components. • Operation of the systems under different operating conditions.	 T
E. Recognize foreseeable anomalies in each system.	10	25	• Foreseeable anomalies. • Anomalies specific to the battery. • Effects of anomalies on the operation of a system.	T T
F. Check the performance of the starting and charging systems.	20	-	• Choice of equipment and instruments. • Techniques for using testing equipment. • Observance of manufacturer's testing recommendations. • Interpretation of results.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 805

MODULE: 20 - STARTING AND CHARGING SYSTEMS AND ELECTROMAGNETIC ACCESSORIES

EXPECTED BEHAVIOUR: To analyze the operation of starting and charging systems and electromagnetic accessories.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify the starting and charging systems and the electromagnetic accessories, and their components.	1. Types of systems.	30	1.1 Identification of the different types of systems.	10	2
			1.2 List of components.	10	2
			1.3 Location of each component.	10	2
C. Describe the specific characteristics of the components.	2. Specific characteristics of the components.	30	2.1 Description of the specific characteristics of the construction of each component.	15	3
			2.2 Description of the operation of the components.	15	3
D. Explain the operation of the systems.	3. Operation of the systems under different operating conditions.	15	3.1 Description of the operation of the systems under different operating conditions.	15	3
E. Recognize foreseeable anomalies in each system.	4. Foreseeable anomalies.	15	4.1 Identification of foreseeable anomalies related to the specific characteristics of each component.	15	3
	5. Anomalies specific to the battery.	10	5.1 Identification of anomalies specific to the battery.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 805

MODULE: 20 - STARTING AND CHARGING SYSTEMS AND ELECTROMAGNETIC ACCESSORIES

Items	Comments
Type of examination	In this theory examination, candidates will be evaluated on their knowledge of starting and charging systems, and electromagnetic accessories. The questions will be based on drawings, diagrams and learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 815

MODULE: 21 – STARTING SYSTEM, CHARGING SYSTEM AND ELECTROMAGNETIC ACCESSORY REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 815

MODULE: 21 - STARTING SYSTEM, CHARGING SYSTEM AND ELECTROMAGNETIC ACCESSORY REPAIR

EXPECTED BEHAVIOUR: To repair starting and charging systems and electromagnetic accessories.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Diagnose the condition of the starting and charging systems and the electromagnetic accessories.	20	75	• Observance of diagnostic methods. • Accuracy of diagnosis.	P P
B. Plan the work.	5	-	• Determination of work to be done. • Preparation of material.	
C. Replace components.	20	-	• Removal and installation techniques. • Adjustments.	
D. Disassemble components of the starting and charging systems.	15	-	• Disassembly techniques. • Cleaning of parts. • Accuracy of diagnosis.	
E. Repair components and circuits.	15	5	• Repair techniques. • Adjustment of components. • Replacement of component parts. • Quality of repair of windshield wiper system.	P
F. Reassemble the components.	15	-	• Reassembly techniques.	
G. Verify the operating condition and integrity of the systems.	10	15	• Testing of windshield wiper system. • Quality of report. • Neatness and organization of work area.	P
H. Take care when handling vehicle.	-	5	• Handling of vehicle.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 815

MODULE: 21 - STARTING SYSTEM, CHARGING SYSTEM AND ELECTROMAGNETIC ACCESSORY REPAIR

EXPECTED BEHAVIOUR: To repair starting and charging systems and electromagnetic accessories.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Diagnose the condition of the starting and charging systems and the electromagnetic accessories.	PS	1. Observance of diagnostic methods.	25	1.1 Accurately measured the battery's residual voltage when cranking.	10
				1.2 Accurately measured the voltage drop.	15
	PT	2. Accuracy of diagnosis.	5	2.1 Correct interpretation of results.	5
	PS	3. Observance of diagnostic method for charging system.	25	3.1 Accurately measured the maximum output.	10
				3.2 Accurately measured the voltage drop.	15
	PT	4. Accuracy of diagnosis.	5	4.1 Correct interpretation of results.	5
	PS/PT	5. Observance of diagnostic method for windshield wiper system.	5	5.1 Proper testing of the circuits of the windshield wiper system.	5
	PT	6. Accuracy of diagnosis.	10	6.1 Correct interpretation of results.	10
E. Repair components and circuits.	PT	7. Quality of repair of windshield wiper system.	5	7.1 Circuit functioned correctly.	5

* Evaluation Strategy: process (PS) or product (PT) evaluation

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 815

MODULE: 21 - STARTING SYSTEM, CHARGING SYSTEM AND ELECTROMAGNETIC ACCESSORY REPAIR

EXPECTED BEHAVIOUR: To repair starting and charging systems and electromagnetic accessories.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
G. Verify the operating condition and integrity of the systems.	PS	8. Testing of windshield wiper system.	15	8.1 Checked the current capacity at maximum speed and the ground voltage drop.	10
				8.2 Correctly interpreted measurements.	5
H. Take care when handling vehicle.	PS	9. Handling of vehicle.	5	9.1 Used fender covers and seat protector.	5

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics **CODE:** 841 823

MODULE: 22 – PASSIVE AND ACTIVE SECURITY SYSTEMS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 823

MODULE: 22 - PASSIVE AND ACTIVE SECURITY SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of passive and active security systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information in the technical documentation.	5	-	• Selection of electrical and hydraulic drawings and diagrams. • Interpretation of the information in the electrical and hydraulic drawings and diagrams. • Interpretation of safety instructions.	
B. Identify the security systems and their components: • antilock and antiskid devices • air bags • automatic seat belts • telescopic steering columns • antitheft devices.	40	40	• Types of systems. • Components of the different systems.	T T
C. Describe the specific characteristics of the components of each type of system.	15	30	• Function of the components specific to each system. • Specific characteristics of the mechanical and hydraulic components.	T T
D. Explain the operation of the security systems.	15	10	• Operation of the systems under different operating conditions.	T
E. Identify foreseeable anomalies.	10	20	• Foreseeable anomalies. • Effects of anomalies on the operation of each system.	T T
F. Use the instruments designed to troubleshoot computer-controlled security systems.	15	-	• Use of equipment designed to diagnose security systems.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 823

MODULE: 22 - PASSIVE AND ACTIVE SECURITY SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of passive and active security systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify the security systems and their components: • antilock and antiskid devices • air bags • automatic seat belts • telescopic steering columns • antitheft devices.	1. Types of systems.	10	1.1 Identification of the different types of systems.	10	2
	2. Components of the different systems.	30		15	3
			2.1 List of the components of the different systems.	15	3
			2.2 Location of components.		
C. Describe the specific characteristics of the components of each type of system.	3. Function of the components specific to each system.	15	3.1 Description of the function of the components specific to each system.	15	3
	4. Specific characteristics of the mechanical and hydraulic components.	15	4.1 Identification of the characteristics of construction.	10	2
			4.2 Description of the operation of the mechanical and hydraulic components.	5	1
D. Explain the operation of the security systems.	5. Operation of the systems under different operating conditions.	10	5.1 Explanation of the operation of the systems under different operating conditions.	10	2

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 823

MODULE: 22 - PASSIVE AND ACTIVE SECURITY SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of passive and active security systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
E. Identify foreseeable anomalies.	6. Foreseeable anomalies.	10	6.1 Identification of foreseeable anomalies related to the specific characteristics of the components.	10	2
	7. Effects of foreseeable anomalies on the operation of each system.	10	7.1 Description of the effects of foreseeable anomalies on the operation of each system.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 823

MODULE: 22 - PASSIVE AND ACTIVE SECURITY SYSTEMS

Items	Comments
Type of examination	In this theory examination, candidates are to be evaluated on their knowledge of passive and active security systems. The questions will be based on drawings, diagrams and learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 834

MODULE: 23 – ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 834

MODULE: 23 - ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR

EXPECTED BEHAVIOUR: To repair antilock brakes and safety accessories.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Diagnose anomalies in: • antilock brake systems • traction control (antiskid) devices • air bags.	35	40	• Diagnostic and testing methods according to the anomaly detected. • Interpretation of results.	P
B. Plan the work.	5	-	• Choice and preparation of tools, materials, equipment and documentation.	
C. Replace components of: • antilock brake systems • traction control (antiskid) devices • air bags.	30	25	• Removal and installation techniques. • Adjustment of sensors.	P
D. Repair circuits.	20	10	• Repair techniques.	P
E. Check the operating condition and integrity of the systems.	10	20	• Testing of systems. • Quality of report. • Neatness and organization of work area.	P
F. Observe health and safety rules.	-	5	• Observance of health and safety rules.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 834

MODULE: 23 - ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR

EXPECTED BEHAVIOUR: To repair antilock brakes and safety accessories.

Evaluation Focuses	Str*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Diagnose anomalies in antilock brake systems.	PS/PT	1. Diagnostic and testing methods according to the anomaly detected.	20	1.1 Observed the manufacturer's recommended diagnostic method for antilock brake systems.	10
				1.2 Correct interpretation of the information and identification of the cause of the problem.	10
D. Repair circuits in antilock brake systems.	PS	2. Repair techniques.	10	2.1 Applied the manufacturer's recommended technique for repairing antilock brake systems.	10
E. Check the operating condition and integrity of antilock brake systems.	PS	3. Testing of systems.	10	3.1 Checked the operating condition of the antilock brake system.	10
A. Diagnose anomalies in air bags.	PS/PT	4. Diagnostic and testing methods according to the anomaly detected.	20	4.1 Observed the manufacturer's recommended technique for testing air bags.	10
				4.2 Correct interpretation of the information and identification of the cause of the problem.	10

N.B. Antilock brake systems and air bags will be evaluated separately.

* Evaluation Strategy: process (PS) or product (PT) evaluation

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 834

MODULE: 23 - ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR

EXPECTED BEHAVIOUR: To repair antilock brakes and safety accessories.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
C. Replace components of air bags.	PS	5. Removal and installation techniques.	25	5.1 Observed the manufacturer's recommended method for removing air bags.	15
				5.2 Observed the manufacturer's recommended method for installing air bags.	10
E. Check the operating condition and integrity of the air bags.	PS	6. Testing of systems.	10	6.1 Checked the operating condition of the air bag system.	10
F. Observe health and safety rules.	PS	7. Observance of health and safety rules.	5	7.1 Took appropriate safety measures when removing air bag.	5

N.B. Antilock brake systems and air bags will be evaluated separately.

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 834

MODULE: 23 - ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR

Items	Comments
Type of examination	In this examination, candidates, using diagnostic codes, must identify a problem related to the antilock brake system and another related to the air bags. They must also remove and install an air bag, repair an antilock brake system and check the operating condition and integrity of both systems. The examiner should create a problem on each system. For example, for the air bag system, the examiner could: - disconnect an impact sensor - create a short circuit - install a defective fuse. For the antilock brake system, the problem created could involve: - the sensors of the right or left front wheel - the inlet solenoid valve of the rear wheels, or the right or left front wheel - the main relay coil - the main inlet solenoid valve - the hydraulic pump relay.
Number of candidates	Three.
Information on the criterion components	
Criterion component 2.1	
Applied the manufacturer's recommended technique for repairing antilock brake systems.	The examiner must verify that candidates observed the correct removal method, correctly used the tools and equipment, applied the proper installation techniques, and properly installed all the parts.

PROGRAM: Automobile Mechanics CODE: 841 834

MODULE: 23 - ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR

Items	Comments
Criterion component 5.2	
Observed the manufacturer's recommended method for installing air bags.	The air bag must be correctly installed in the passenger compartment and the system fully operational.
Criterion component 7.1	
Took appropriate safety measures when removing air bag.	The examiner must verify that candidates observed proper safety rules, remaining outside the air bag deployment path, yet near enough to work comfortably.
Minimum performance standard	80 marks.

EVALUATION FORM

Program: Automobile Mechanics
Module: 23 - ANTILOCK BRAKE SYSTEM AND SAFETY ACCESSORY REPAIR
Program Code: 5692 **Module Code:** 841 834

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
A. Diagnose anomalies in antilock brake systems.	**1. Diagnostic and testing methods according to the anomaly detected.**			
	1.1 Observed the manufacturer's recommended diagnostic method for antilock brake systems.			0 10
	1.2 Correctly interpretation of the information and identification of the cause of the problem.			0 10
D. Repair circuits in antilock brake systems.	**2. Repair techniques.**			
	2.1 Applied the manufacturer's recommended technique for repairing antilock brake systems:			0 10
	- applied proper removal technique	❑	❑	
	- correctly used appropriate tools and equipment	❑	❑	
	- applied proper installation technique	❑	❑	
	- correctly installed all parts.	❑	❑	
E. Check the operating condition and integrity of antilock brake systems.	**3. Testing of systems.**			
	3.1 Checked the operating condition of the antilock brake system.			0 10
A. Diagnose anomalies in air bags.	**4. Diagnostic and testing methods according to the anomaly detected.**			
	4.1 Observed the manufacturer's recommended technique for testing air bags.			0 10
	4.2 Correct interpretation of the information and identification of the cause of the problem.			0 10

Evaluation Focuses	Observations and Judgment	Yes	No	Mark
C. Replace components of air bags	**5. Removal and installation techniques.**			
	5.1 Observed the manufacturer's recommended method for removing air bags.			0 15
	5.2 Observed the manufacturer's recommended method for installing air bags:			0 10
	- air bag correctly installed	❑	❑	
	- system fully operational.	❑	❑	
E. Check the operating condition and integrity of the air bags.	**6. Testing of systems.**			
	6.1 Checked the operating condition of the air bag system.			0 10
F. Observe health and safety rules.	**7. Observance of health and safety rules.**			
	7.1 Took appropriate safety measures when removing air bag, by remaining:			0 5
	- outside the air bag deployment path	❑	❑	
	- near enough to work comfortably.	❑	❑	

Notes for the examiner:
1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 80 marks.

TOTAL: /100

Pass: ❑ **Fail:** ❑

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 844

MODULE: 24 – ELECTRONIC IGNITION SYSTEMS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 844

MODULE: 24 - ELECTRONIC IGNITION SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of electronic ignition systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Interpret the information in the technical documentation.	10	-	• Interpretation of the information in the electrical drawings and diagrams of the different systems.	
B. Identify electronic ignition systems with and without a distributor, and their components.	15	35	• Types of systems.	T
			• Components of each system.	T
C. Describe the specific characteristics of the components of systems with and without a distributor.	10	25	• Specific characteristics of the components.	T
D. Explain the operation of electronic ignition systems with and without a distributor.	20	10	• Operation of the systems.	T
E. Explain the basic strategies of the microprocessor that apply to spark control.	15	10	• Foreseeable strategies of the microprocessor.	T
F. Identify foreseeable anomalies in electronic ignition systems.	15	20	• Foreseeable anomalies. • Effects of anomalies on the operation of the systems.	T T
G. Check the performance of systems, using an ignition oscilloscope.	15	-	• Choice of ignition oscilloscope. • Use of ignition oscilloscope. • Interpretation of ignition oscillations.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 844

MODULE: 24 - ELECTRONIC IGNITION SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of electronic ignition systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify electronic ignition systems with and without a distributor, and their components.	1. Types of systems.	5	1.1 Identification of systems with and without a distributor.	5	1
	2. Components of each system.	30	2.1 Identification of the components of each system.	15	3
			2.2 Accurately located components.	15	3
C. Describe the specific characteristics of the components of systems with and without a distributor.	3. Specific characteristics of the components.	25	3.1 Description of the operation of the components.	15	3
			3.2 Description of the characteristics of the construction of the components.	10	2
D. Explain the operation of electronic ignition systems with and without a distributor.	4. Operation of the systems.	10	4.1 Description of the operation of the systems under different operating conditions.	10	2
E. Explain the basic strategies of the microprocessor that apply to spark control.	5. Foreseeable strategies of the microprocessor.	10	5.1 Description of different foreseeable strategies.	10	2

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 844

MODULE: 24 - ELECTRONIC IGNITION SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of electronic ignition systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
F. Identify foreseeable anomalies in electronic ignition systems.	6. Foreseeable anomalies.	10	6.1 Identification of foreseeable anomalies related to the characteristics of the components.	10	2
	7. Effects of anomalies on the operation of the systems.	10	7.1 Description of the effects of foreseeable anomalies on the operation of the systems.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 844

MODULE: 24 - ELECTRONIC IGNITION SYSTEMS

Items	Comments
Type of examination	In this theory examination, candidates are to be evaluated on their knowledge of electronic ignition systems. The questions will be based on drawings, diagrams and learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 855

MODULE: 25 – ELECTRONIC IGNITION SYSTEM REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 855

MODULE: 25 - ELECTRONIC IGNITION SYSTEM REPAIR

EXPECTED BEHAVIOUR: To repair electronic ignition systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Select diagnostic strategies for ignition systems with and without a distributor.	20	-	• Manufacturer's recommended procedures. • Interpretation of the information.	
B. Diagnose anomalies.	25	55	• Diagnostic procedures. • Interpretation of diagnostic codes.	P P
C. Plan the work.	5	-	• Determination of the work to be done.	
D. Replace components of electronic ignition systems.	15	10	• Repair techniques. • Observance of removal technique. • Observance of installation technique. • Accuracy of diagnosis. • Precision of adjustments.	 P
E. Repair electrical circuits.	15	15	• Repair techniques. • Quality of repair work.	 P
F. Check the operating condition and integrity of the systems.	20	15	• Testing of systems. • Quality control of work done. • Accuracy and quality of report. • Neatness and organization of work area.	P
G. Observe health and safety rules.	-	5	• Observance of health and safety rules.	P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 855

MODULE: 25 - ELECTRONIC IGNITION SYSTEM REPAIR

EXPECTED BEHAVIOUR: To repair electronic ignition systems.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
B. Diagnose anomalies.	PS/PT	1. Diagnostic procedures.	10	1.1 Observed the recommended diagnostic procedures.	10
	PS/PT	2. Interpretation of diagnostic codes.	45	2.1 Accurate identification of diagnostic codes.	10
				2.2 Observed the manufacturer's recommended technique for diagnosing problems.	15
				2.3 Accurate diagnosis.	20
D. Replace components of electronic ignition systems.	PS	3. Observance of installation technique.	10	3.1 Observed the manufacturer's recommended installation technique.	10
E. Repair electrical circuits.	PT	4. Quality of repair work.	15	4.1 Conformity of signal to manufacturer's specifications.	15
F. Check the operating condition and integrity of the systems.	PT	5. Testing of systems.	15	5.1 Correct operation of electronic ignition system.	15
G. Observe health and safety rules.	PS	6. Observance of health and safety rules.	5	6.1 Used exhaust hose when engine was running.	5

* Evaluation Strategy: process (PS) or product (PT) evaluation

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 855

MODULE: 25 - ELECTRONIC IGNITION SYSTEM REPAIR

Items	Comments
Type of examination	In this examination, candidates are expected to interpret diagnostic codes coming from a defective component or circuit, to replace the defective component, repair the faulty circuit, and check the operating condition and integrity of the systems. In the part of the exam involving replacing a component, the examiner should place, in each motor vehicle, a defective sensor or a defective ignition coil. In the part of the exam requiring the candidate to repair an electrical circuit, the examiner should create a defect by placing a defective terminal, causing a short circuit, or canceling a reference signal.
Number of candidates	Three.
Information on the criterion components	
Criterion component 1.1	
Observed the recommended diagnostic procedures.	Candidates are expected to locate the technical information and correctly connect the diagnostic equipment.
Criterion component 2.1	
Accurate identification of diagnostic codes.	Candidates are required to identify one diagnostic code related to a component and another one related to an electrical circuit.
Criterion component 2.3	
Accurate diagnosis.	The diagnosis should involve the defective component and the faulty circuit.

PROGRAM: Automobile Mechanics CODE: 841 855

MODULE: 25 - ELECTRONIC IGNITION SYSTEM REPAIR

Items	Comments
Criterion component 4.1	
Conformity of signal to manufacturer's specifications.	The examiner is to check that the electronic system voltage signal conforms to the manufacturer's specifications.
Criterion component 6.1	
Used exhaust hose when engine was running.	This aspect is to be evaluated throughout the examination.
Minimum performance standard	80 marks.

EVALUATION FORM

Program: Automobile Mechanics
Module: 25 - ELECTRONIC IGNITION SYSTEM REPAIR
Program Code: 5692 **Module Code:** 841 855

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
B. Diagnose anomalies.	**1. Diagnostic procedures.**			
	1.1 Observed the recommended diagnostic procedures related to:			0 10
	- locating the technical information	❑	❑	
	- correctly connecting the diagnostic equipment.	❑	❑	
	2. Interpretation of diagnostic codes.			
	2.1 Accurate identification of diagnostic codes for:			0 10
	- the defective component	❑	❑	
	- the faulty electrical circuit.	❑	❑	
	2.2 Observed the manufacturer's recommended technique for diagnosing problems.			0 15
	2.3 Accurate diagnosis related to:			0 20
	- the defective component	❑	❑	
	- the faulty electrical circuit.	❑	❑	
D. Replace components of electronic ignition systems.	**3. Observance of installation technique.**			
	3.1 Observed the manufacturer's recommended installation technique.			0 10
E. Repair electrical circuits.	**4. Quality of repair work.**			
	4.1 Conformity of signal to manufacturer's specifications.			0 15
F. Check the operating condition and integrity of the systems.	**5. Testing of systems.**			
	5.1 Correct operation of electronic ignition system.			0 15

Evaluation Focuses	Observations and Judgments			Mark
		Yes	No	
G. Observe health and safety rules.	**6. Observance of health and safety rules.**			
	6.1 Used exhaust hose when engine was running.			0 5

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 80 marks. **TOTAL:** /100

Pass: ☐ **Fail:** ☐

Name of examiner: _____

PROGRAM: Automobile Mechanics **CODE:** 841 864

MODULE: 26 – ANTIPOLLUTION AND ELECTRONIC INJECTION SYSTEMS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 864

MODULE: 26 – ANTIPOLLUTION AND ELECTRONIC INJECTION SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of antipollution and electronic injection systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Find the information in the technical documentation.	10	-	• Choice of drawings and diagrams. • Interpretation of the drawings and diagrams.	
B. Identify injection and antipollution systems and their components.	20	35	• Types of systems. • Components of each system.	T T
C. Describe the specific characteristics of the components of each type of system.	20	15	• Specific characteristics of the components.	T
D. Explain the operation of each system.	15	30	• Operation of each system.	T
E. Explain foreseeable basic microprocessor strategies.	10	10	• Foreseeable basic microprocessor strategies.	T
F. Identify foreseeable anomalies.	15	10	• Foreseeable anomalies. • Effects of anomalies on the operation of each system.	 T
G. Verify the performance of the systems, using an exhaust gas analyzer.	10	-	• Use of exhaust gas analyzer. • Interpretation of results.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - THEORY EXAMINATION

PROGRAM: Automobile Mechanics **Code:** 841 864

MODULE: 26 – ANTIPOLLUTION AND ELECTRONIC INJECTION SYSTEMS

EXPECTED BEHAVIOUR: To analyze the operation of antipollution and electronic injection systems.

Evaluation Focuses	Themes of Knowledge	Wgt. %	Components of Knowledge	Wgt. %	No. of items
B. Identify injection and antipollution systems and their components.	1. Types of systems.	15	1.1 Identification of the different types of systems.	15	3
	2. Components of each system.	20	2.1 List of the components of each type of system.	20	4
C. Describe the specific characteristics of the components of each type of system.	3. Specific characteristics of the components.	15	3.1 Description of the operation of the components.	15	3
D. Explain the operation of each system.	4. Operation of each system.	30	4.1 Identification of the mixtures required according to operating conditions.	10	2
			4.2 Description of the effects of physical factors on the mixture.	10	2
			4.3 Description of the operation of each system.	10	2
E. Explain foreseeable basic microprocessor strategies.	5. Foreseeable basic microprocessor strategies.	10	5.1 Description of different foreseeable basic strategies.	10	2
F. Identify foreseeable anomalies.	6. Effects of anomalies on the operation of each system.	10	6.1 Description of the effects of foreseeable anomalies on the operation of each system.	10	2

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics CODE: 841 864

MODULE: 26 – ANTIPOLLUTION AND ELECTRONIC INJECTION SYSTEMS

Items	Comments
Type of examination	In this theory examination, candidates are to be evaluated on their knowledge of antipollution and electronic injection systems. The questions will be based on drawings, diagrams and learning situations.
Number of items	20.
Number of candidates	All candidates.
Minimum performance standard	16 correct answers out of 20, or 80 marks.

PROGRAM: Automobile Mechanics **CODE:** 841 876

MODULE: 27 – ANTIPOLLUTION SYSTEM AND ELECTRONIC INJECTION SYSTEM MAINTENANCE AND REPAIR

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

EVALUATION FORM

WORKSHEET

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 876

MODULE: 27 – ANTIPOLLUTION SYSTEM AND ELECTRONIC INJECTION SYSTEM MAINTENANCE AND REPAIR

EXPECTED BEHAVIOUR: To maintain and repair antipollution and electronic injection systems.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Diagnose anomalies in antipollution and electronic injection systems.	35	45	• Diagnostic procedures.	P
B. Plan the work.	5	-	• Determination of the work to be done. • Choice of tools and equipment.	
C. Replace components on different types of systems.	15	-	• Removal and installation techniques. • Cleaning of components.	
D. Make the appropriate repairs to each system.	15	20	• Precision of adjustments. • Repair techniques. • Cleaning of electrical contacts. • Quality of the repair work.	 P
E. Clean the electronic injection systems.	10	-	• Use of cleaning equipment.	
F. Check the operating condition and integrity of the systems.	20	35	• Verification of leak-tightness of systems. • Testing of systems. • Accuracy of report.	 P P

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 876

MODULE: 27 – ANTIPOLLUTION SYSTEM AND ELECTRONIC INJECTION SYSTEM MAINTENANCE AND REPAIR

EXPECTED BEHAVIOUR: To maintain and repair antipollution and electronic injection systems.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
A. Diagnose anomalies in antipollution and electronic injection systems.	PS/PT	1. Diagnostic procedures.	45	1.1 Observed the manufacturer's recommended diagnostic procedures.	10
				1.2 Correct interpretation of diagnostic codes.	15
				1.3 Accurate identification of anomalies.	20
D. Make the appropriate repairs to each system.	PT	2. Quality of the repair work.	20	2.1 Correct operation of the repaired circuit.	20
F. Check the operating condition and integrity of the systems.	PS	3. Testing of systems.	25	3.1 Correctly installed the injectors.	25
	PT	4. Accuracy of report.	10	4.1 Clear and precise explanation of the work done on the worksheet.	10

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics CODE: 841 876

MODULE: 27 – ANTIPOLLUTION SYSTEM AND ELECTRONIC INJECTION SYSTEM MAINTENANCE AND REPAIR

Items	Comments
Type of examination	In this examination, candidates are expected to verify and interpret diagnostic codes and to identify the anomaly or anomalies. They must also repair a sensor or an actuator circuit, check the operating condition of an electronic injection system and produce a written report of the work done. N.B.: The examiner should create at least three diagnostic codes and cause a problem in the sensor or actuator circuits.
Number of candidates	Three.
Ruling	Any serious mistake or omission related to the application of the rules of health, safety and environmental protection will immediately put an end to the examination and cause the candidate to fail.
Information on the criterion components	
Criterion component 1.1	
Observed the manufacturer's recommended diagnostic procedures.	The examiner will evaluate the candidates' handling of the equipment used to diagnose anomalies.
Criterion component 1.2	
Correct interpretation of diagnostic codes.	Candidates are required to indicate the diagnostic code noted, as well as the description and type of each code.
Criterion component 1.3	
Accurate identification of anomalies.	The examiner must ensure that candidates observe the manufacturer's recommended diagnostic procedures, that they erase the codes in memory, that only the present defect code be indicated, and that the diagnosis be accurate.

PROGRAM: Automobile Mechanics CODE: 841 876

MODULE: 27 – ANTIPOLLUTION SYSTEM AND ELECTRONIC INJECTION SYSTEM MAINTENANCE AND REPAIR

Items	Comments
Criterion component 3.1 Correctly installed the injectors.	The examiner must ensure that candidates use the proper equipment for the task, take accurate measurements and apply the manufacturer's recommended techniques.
Minimum performance standard	85 marks and the strict observance of the rules of health, safety and environmental protection.

EVALUATION FORM

Program: Automobile Mechanics
Module: 27 – ANTIPOLLUTION SYSTEM AND ELECTRONIC INJECTION SYSTEM MAINTENANCE AND REPAIR
Program Code: 5692 **Module Code:** 841 876

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Yes	No	Mark
A. Diagnose anomalies in antipollution and electronic injection systems.	**1. Diagnostic procedures.**			
	1.1 Observed the manufacturer's recommended diagnostic procedures:			0 10
	- correctly used the appropriate equipment.	❑	❑	
	1.2 Correct interpretation of diagnostic codes:			0 15
	- indication of codes	❑	❑	
	- appropriate description	❑	❑	
	- accurate identification of type.	❑	❑	
	1.3 Accurate identification of anomalies:			0 20
	- observed manufacturer's recommended testing procedures	❑	❑	
	- erased codes left in memory	❑	❑	
	- identification of present code	❑	❑	
	- accurate diagnosis.	❑	❑	
D. Make the appropriate repairs to each system.	**2. Quality of the repair work.**			
	2.1 Correct operation of the repaired circuit.			0 20
F. Check the operating condition and integrity of the systems.	**3. Testing of systems.**			
	3.1 Correctly installed the injectors:			0 25
	- used the proper specialized equipment	❑	❑	
	- took accurate measurements	❑	❑	
	- applied the manufacturer's recommended techniques.	❑	❑	

Evaluation Focuses	Observations and Judgments	Mark
	Yes No	
	4. Accuracy of report.	
	4.1 Clear and precise explanation of the work done on the worksheet.	0 10

Notes for the examiner:

1. The marking is dichotomous. For each item, assign zero or full marks and circle the mark obtained.
2. Assign full marks only if the candidate has obtained a "yes" in all the evaluations which apply to that marking unit, unless otherwise specified.
3. Candidates must obtain full marks for each observable aspect, unless otherwise specified.

Minimum performance standard: 85 marks, plus strict observance of rules of health, safety and environmental protection.

TOTAL: /100

Pass: ❒ **Fail:** ❒

Name of examiner: _____

AUTOMOBILE MECHANICS

DVS 5692

WORKSHEET

Antipollution system and electronic injection system maintenance and repair **841 876**

NAME OF CANDIDATE _____

SCHOOL _____ GROUP _____

DATE OF EXAMINATION _____

1. **Interpretation of diagnostic codes:**

Code	Description of code	Type

2. **Identification of present code:** _____

3. **Accurate diagnosis:** _____

4. **Report of work done:**

Problem, as described by the client: _____

Tests done: _____

Repair work done: _____

Length of time taken: _____

PROGRAM: Automobile Mechanics **CODE:** 841 885

MODULE: 28 – ENGINE-TRANSMISSION UNIT INSPECTION

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

PROGRAM ANALYSIS (BEHAVIOURAL OBJECTIVE)

PROGRAM: Automobile Mechanics CODE: 841 885

MODULE: 28 – ENGINE-TRANSMISSION UNIT INSPECTION

EXPECTED BEHAVIOUR: To diagnose the condition of the engine-transmission unit.

POSSIBLE FOCUSES	Lrn. %	Eval. %	OBSERVABLE ASPECTS OR THEMES OF KNOWLEDGE	P* or T
A. Get information on the problem from the customer.	5	-	• Information gathered. • Interpretation of information received.	
B. Test the operation of heated and unheated exhaust gas oxygen sensors.	10	35	• Testing of operation of sensors and their reaction time. • Use of equipment. • Interpretation of results.	P P
C. Measure the exhaust gas emission rate.	20	25	• Technique for testing the exhaust gas emission rate. • Interpretation of results.	P P
D. Test the operation of all the integrated computer-controlled systems.	20	20	• Technique for testing all the integrated computer-controlled systems. • Interpretation of results.	P
E. Find the causes of intermittent anomalies with and without using diagnostic codes.	20	-	• Diagnostic methods. • Interpretation of results.	
F. Find the causes of anomalies related to abnormally high emission rates.	20	20	• Diagnostic methods. • Identification of problems.	 P
G. Inform the customer of the diagnosis.	5	-	• Quality report.	

*P: Practical Examination T: Theory Examination

TABLE OF SPECIFICATIONS - PRACTICAL EXAMINATION

PROGRAM: Automobile Mechanics CODE: 841 885

MODULE: 28 – ENGINE-TRANSMISSION UNIT INSPECTION

EXPECTED BEHAVIOUR: To diagnose the condition of the engine-transmission unit.

Evaluation Focuses	Str.*	Observable Aspects	Wgt. %	Criterion Components	Wgt. %
B. Test the operation of heated and unheated exhaust gas oxygen sensors.	PS	1. Testing of operation of sensors and their reaction time.	25	1.1 Observed the manufacturer's recommended procedures for testing the operation of sensors.	10
				1.2 Accurately tested the oxygen sensor response time.	15
	PT	2. Interpretation of results.	10	2.1 Accurate diagnosis.	10
C. Measure the exhaust gas emission rate.	PS	3. Technique for testing the exhaust gas emission rate.	15	3.1 Accurately measured the exhaust emission levels.	15
	PT	4. Interpretation of results.	10	4.1 Accurate diagnosis.	10
D. Test the operation of all the integrated computer-controlled systems.	PS	5. Technique for testing all the integrated computer-controlled systems.	20	5.1 Followed the manufacturer's recommended procedure.	10
				5.2 Accurately read the diagnostic trouble codes.	10
F. Find the causes of anomalies related to abnormally high emission rates.	PT	6. Identification of problems.	20	6.1 Accurately determined the problem.	20

* Evaluation Strategy: process (PS) or product (PT) evaluation

PROGRAM: Automobile Mechanics **CODE:** 841 891

MODULE: 29 – STARTING A BUSINESS

PROGRAM ANALYSIS TABLE

TABLE OF SPECIFICATIONS

INFORMATION ON THE EVALUATION

PARTICIPATION EVALUATION CHECKLIST

PROGRAM: Automobile Mechanics **CODE:** 841 891

MODULE: 29 – STARTING A BUSINESS

EXPECTED OUTCOME: To explore the possibility of starting a business.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 1: INFORMATION	60	70	
- Learning about the role of entrepreneurship in Québec's economic development.			• Gather relevant information on the role of entrepreneurship in Québec's economic development.
- Learning about the strengths and weaknesses of the local market and about business opportunities.			• Gather relevant information about the strengths and weaknesses of the local market and about business opportunities.
- Gathering the information necessary to plan and start a business.			• Gather the information necessary for planning the steps involved in starting a business.
- Learning about the characteristics of entrepreneurs: qualities, faults, attitudes, behaviours and competencies.			• Gather information on the characteristics of entrepreneurs.
- Learning about the sources of technical and financial support and training and the business community.			• Gather information on the sources of technical and financial support and training available in the community.

PROGRAM: Automobile Mechanics **CODE:** 841 891

MODULE: 29 – STARTING A BUSINESS

EXPECTED OUTCOME: To explore the possibility of starting a business.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 2: PARTICIPATION	25	10	
- Analyzing the factors that are favourable and unfavourable to entrepreneurship in automobile mechanics.			• Analyze the favourable and unfavourable consequences of entrepreneurship in automobile mechanics.
- Developing a procedure to write a business plan.			• Summarize the steps involved in carrying out a project.
- Thinking about their entrepreneurial potential.			• Determine their own entrepreneurial profile.
- Participating in various activities: • round table discussion with entrepreneurs • video and discussion on starting a business • interviews • reading.			• Participate in the suggested activities.
PHASE 3: EVALUATION	15	20	
- Taking stock of their own entrepreneurial characteristics.			• List those aspects of their personality which are positive and those which need to be improved.
- Assessing the possibility of starting a business.			• Describe their potential for, and interest in, starting a business.

TABLE OF SPECIFICATIONS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 891

MODULE: 29 – STARTING A BUSINESS

EXPECTED OUTCOME: To explore the possibility of starting a business.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 1: Information			
1. Gather relevant information on the role of entrepreneurship in Québec's economic development.	10	1.1 Write down the information gathered on the role of entrepreneurship in Québec's economic development.	10
2. Gather relevant information about the strengths and weaknesses of the local market and about business opportunities.	15	1.2 Write down the information gathered about the strengths and weaknesses of the local market and about business opportunities.	15
3. Gather the information necessary for planning the steps involved in starting a business.	25	3.1 Describe the five steps involved in starting a business.	25
4. Gather information on the characteristics of entrepreneurs.	5	4.1 Write down the information gathered on the characteristics of entrepreneurs.	5
5. Gather information on the sources of technical and financial support and training available in the community.	15	5.1 Name the sources of technical and financial support and training available in the community.	15

TABLE OF SPECIFICATIONS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 891

MODULE: 29 – STARTING A BUSINESS

EXPECTED OUTCOME: To explore the possibility of starting a business.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 2: Participation			
6. Analyze the favourable and unfavourable consequences of entrepreneurship in automobile mechanics.	5	6.1 Briefly analyze the consequences of entrepreneurship in automobile mechanics.	5
7. Participate in the suggested activities.	5	7.1 Actively participate in the suggested activities.	5
PHASE 3: Evaluation			
8. List those aspects of their personality which are positive and those which need to be improved.	10	8.1 Emphasize relevant aspects of their own personality.	10
9. Describe their potential for and interest in starting a business.	10	9.1 Analyze their potential for, and interest in, starting a business.	10

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics **CODE:** 841 891

MODULE: 29 – STARTING A BUSINESS

Items	Comments
Type of examination	This examination consists of three phases to be evaluated throughout the module. PHASE 1: Information It is suggested that students refer to the document entitled *Introduction to Entrepreneurship* (for Students in Secondary School General and Vocational Education and College Pre-University and Technical Education).* PHASE 2: Participation The instructor should help students analyze the consequences of entrepreneurship and to participate in the activities. PHASE 3: Evaluation Candidates are expected to highlight those aspects of their personality which are positive, as well as those which need to be improved. They should also describe their potential for, and interest in, starting a business (awareness).
Number of candidates	All candidates.
Note	In this examination, only the students' participation is to be evaluated, not their performance.
Minimum performance standard	16 YES.

* Fondation de l'entrepreneurship, Gouvernement du Québec, Ministère de l'Éducation, 17-3758A, 2000.

PARTICIPATION EVALUATION CHECKLIST

Program: Automobile Mechanics
Module: 29 – STARTING A BUSINESS
Program Code: 5692 **Module Code:** 841 891

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Mark	
Phase 1: Information.		**Yes**	**No**
	1. Gather relevant information on the role of entrepreneurship in Québec's economic development.		
	1.1 Write down the information gathered on the role of entrepreneurship in Québec's economic development:		
	- role of the entrepreneur	❒	❒
	- socio-economic profile of Québec entrepreneurs.	❒	❒
	2. Gather relevant information about the strengths and weaknesses of the local market and about business opportunities.		
	2.1 Write down the information gathered about the strengths and weaknesses of the local market and about business opportunities:		
	- market strengths	❒	❒
	- market weaknesses	❒	❒
	- business opportunities.	❒	❒
	3. Gather the information necessary for planning the steps involved in starting a business.		
	3.1 Describe the five steps involved in starting a business:		
	- Step 1	❒	❒
	- Step 2	❒	❒
	- Step 3	❒	❒
	- Step 4	❒	❒
	- Step 5	❒	❒
	4. Gather information on the characteristics of entrepreneurs.		
	4.1 Write down the information gathered on the characteristics of entrepreneurs.	❒	❒

Evaluation Focuses	Observations and Judgments	Mark Yes	Mark No
	5. Gather information on the sources of technical and financial support and training available in the community.		
	5.1 Name the sources of technical and financial support and training available in the community:		
	- technical support	❒	❒
	- financial support	❒	❒
	- training available.	❒	❒
Phase 2:			
Participation.	**6. Analyze the favourable and unfavourable consequences of entrepreneurship in automobile mechanics.**		
	6.1 Briefly analyze the consequences of entrepreneurship in automobile mechanics.	❒	❒
	7. Participate in the suggested activities.		
	7.1 Actively participate in the suggested activities.	❒	❒
Phase 3:			
Evaluation.	**8. List those aspects of their personality which are positive and those which need to be improved.**		
	8.1 Emphasize relevant aspects of their own personality:		
	- positive aspects	❒	❒
	- aspects to be improved.	❒	❒
	9. Describe their potential for, and interest in, starting a business.		
	9.1 Analyze their potential for, and interest in, starting a business:		
	- potential	❒	❒
	- interest.	❒	❒

TOTAL: _____ **YES**

Minimum performance standard: 16 YES.

Pass: ❒ **Fail:** ❒ **Name of examiner:** _____

PROGRAM: Automobile Mechanics **CODE:** 841 906

MODULE: 30 – ENTERING THE WORK FORCE

PROGRAM ANALYSIS TABLE

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PARTICIPATION EVALUATION CHECKLIST

LOGBOOK

PRACTICUM REPORT

PROGRAM ANALYSIS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 906

MODULE: 30 – ENTERING THE WORK FORCE

EXPECTED OUTCOME: To enter the work force.

LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 1: CONSUMER PROTECTION	2	-	
- Learning about the sections of the *Consumer Protection Act* pertaining to automobile repair.			• Show an interest in the *Consumer Protection Act*.
- Learning about the evaluation and invoicing forms in conformity with the Act.			• Show an interest in the *Consumer Protection Act*.
- Developing respect for the rights and expectations of the consumer with regard to automobile repair.			• Learn about the rights and expectations of the consumer.
PHASE 2: PRACTICUM SEARCH	5	10	
- Finding possible employers.			• Carry out a search for a practicum position.
- Applying for a practicum position and following up.			• Apply to companies for a practicum position and ensure a follow-up.

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LEARNING CONTEXT	Lrn. %	Eval. %	PARTICIPATION INDICATORS
PHASE 3: TRADE-RELATED ACTIVITIES IN THE WORKPLACE	85	55	
- Approaching businesses in order to prepare for the practicum.			• Stay in contact with the company in which the practicum is to be done.
- Making sure that the practicum agreement conforms to the regulations.			• Respect the rules governing work in a garage.
- Participating in tasks performed by automobile mechanics.			• Participate actively in trade-related activities.
- Writing a report listing the main tasks and operations performed in the workplace.			• Write a practicum report detailing the activities performed.
PHASE 4: EVALUATION OF THE PRACTICUM AND THE TRAINING	8	35	
- Presenting a report detailing the tasks and operations performed in the workplace.			• Write an essay on the tasks and operations performed during the practicum.
- Assessing the relevance of their training with respect to workplace requirements.			• Emphasize the strengths and weaknesses of the training received.
- Stating the specific and complementary training needs in automobile mechanics.			• Identify their own training needs.

TABLE OF SPECIFICATIONS (SITUATIONAL OBJECTIVE)

PROGRAM: Automobile Mechanics **CODE:** 841 906

MODULE: 30 – ENTERING THE WORK FORCE

EXPECTED OUTCOME: To enter the work force.

PARTICIPATION INDICATORS	Wgt. %	CRITERION COMPONENTS	Wgt. %
PHASE 2: Practicum search	10		
1. Apply to companies for a practicum position and ensure a follow-up.		1.1 Apply to companies for a position.	5
		1.2 Ensure a follow-up.	5
PHASE 3: Trade-related activities in the workplace	55		
2. Participate actively in trade-related activities.		2.1 Participate in trade-related activities.	20
		2.2 Respect the rules governing work in a garage.	20
3. Write a practicum report detailing the activities performed.		3.1 In the logbook, write down the activities performed.	10
		3.2 Produce a written practicum report.	5
PHASE 4: Evaluation of the practicum and the training	35		
4. Write an essay on the tasks and operations performed during the practicum.		4.1 Detail the tasks performed in the workplace.	10
5. Emphasize the strengths and weaknesses of the training received.		5.1 Using examples, state the strengths and weaknesses of the training with respect to workplace requirements.	15
6. Identify their own training needs.		6.1 Establish their future training needs to permit them to succeed and be efficient in the workplace.	10

INFORMATION ON THE EVALUATION

PROGRAM: Automobile Mechanics **CODE:** 841 906

MODULE: 30 – ENTERING THE WORK FORCE

Items	Comments
Type of examination	This examination consists of four phases to be evaluated throughout the module. Phase 1: Consumer protection. Phase 2: Practicum search. This phase should take place several weeks prior to the practicum. Phase 3: Trade-related activities in the workplace. Phase 4: Evaluation of the practicum and the training.
Number of candidates	All candidates.
Note	In this examination, only the students' participation is to be evaluated, not their performance.
Information concerning the criterion components	
Criterion component 2.1	
Participate in trade-related activities.	Candidates are expected to show interest and initiative, and to be available and able to work independently.
Criterion component 2.2	
Respect the rules governing work in a garage.	Candidates are expected to take pride in the quality of the work done, be conscientious and punctual, and observe all rules of health, safety and environmental protection.
Criterion component 3.1	
In the logbook, write down the activities performed.	Candidates should be provided with a logbook in which to write down the activities performed, details on newly acquired skills and knowledge, work procedures, and comments on the practicum.

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MODULE: 30 – ENTERING THE WORK FORCE

Items	Comments
Criterion component 3.2	
Produce a written practicum report.	Candidates are expected to write a practicum report summing up the topics dealt with in the logbook.
Criterion component 4.1	
Detail the tasks performed in the workplace.	In a group discussion, candidates are expected to describe two or three activities performed during the practicum and comment on the requirements of the vocational education centre and workplace.
Criterion component 5.1	
Using examples, state the strengths and weaknesses of the training with respect to workplace requirements.	Candidates are expected to emphasize the strengths and weaknesses of the training received, relating it to workplace requirements.
Criterion component 6.1	
Establish their future training needs to permit them to succeed and be efficient in the workplace.	Candidates are expected to state at least two training needs.
	Candidates must successfully complete criterion components 2.1 and 2.2. (No error or omission is allowed in these two criterion components.)
Minimum performance standard	16 YES and successful completion of criterion components 2.1 and 2.2.

PERFORMANCE EVALUATION CHECKLIST

Program: Automobile Mechanics
Module: 30 – ENTERING THE WORK FORCE
Program Code: 5692 **Module Code:** 841 906

Name of Candidate: _____ **Permanent Code:** _____

School: _____ **Date:** _____

Evaluation Focuses	Observations and Judgments	Mark	
Phase 2:		**Yes**	**No**
Practicum search.	**1. Apply to companies for a practicum position and ensure a follow-up.**		
	1.1 Apply to companies for a position.	❒	❒
	1.2 Ensure a follow-up.	❒	❒
Phase 3:			
Trade-related activities in the workplace.	**2. Participate actively in trade-related activities.**		
	2.1 Participate in trade-related activities, showing:		
	- keen interest	❒	❒
	- availability	❒	❒
	- independence	❒	❒
	- initiative.	❒	❒
	2.2 Respect the rules governing work in a garage:		
	- pride in quality of work	❒	❒
	- conscientiousness	❒	❒
	- punctuality	❒	❒
	- observance of rules of health, safety and environmental protection.	❒	❒
	3. Write a practicum report detailing the activities performed.		
	3.1 In the logbook, write down the activities performed:		
	- activities performed	❒	❒
	- details on newly acquired knowledge, skills or work procedures.	❒	❒
	3.2 Produce a written practicum report.	❒	❒

Evaluation Focuses	Observations and Judgments	Mark	
Phase 4:		**Yes**	**No**
Evaluation of the practicum and the training.	**4. Write an essay on the tasks and operations performed during the practicum.**		
	4.1 Detail the tasks performed in the workplace:		
	- description of activities performed during the practicum	❒	❒
	- comments on vocational education centre and workplace requirements.	❒	❒
	5. Emphasize the strengths and weaknesses of the training received.		
	5.1 Using examples, state the strengths and weaknesses of the training with respect to workplace requirements:		
	- strengths	❒	❒
	- weaknesses	❒	❒
	- relevance to the workplace.	❒	❒
	6. Identify their own training needs.		
	6.1 Establish their future training needs to permit them to succeed and be efficient in the workplace, stating:		
	- first need	❒	❒
	- second need.	❒	❒

TOTAL: _____ **YES**

Minimum performance standard: 16 YES, and successful completion of criterion components 2.1 and 2.2.

Pass: ❒ **Fail:** ❒ **Name of examiner:** _____

LOGBOOK

Day 1

Date: _____ Work schedule: from _____ to _____

NAME OF PRACTICUM STUDENT: _____

Name of Company: _____

1. Comments on the welcome received:

2. Description of the workplace:

3. Detailed comments on meeting company employees for the first time:

4. Comments on the atmosphere in the workplace:

5. Clarity of instructions related to tasks to be performed:

6. Details related to company policy: work schedule, coffee breaks, absence from work, dress code:

7. Description of materials used and safety rules:

Materials used:

Safety rules:

8. Impressions on Day 1 of the practicum:

LOGBOOK

Day 2

Date: _____ Work schedule: from _____ to _____

1. When I arrive at work, I feel:

2. Tasks performed:

3. Details on newly acquired skills, knowledge and workplace procedures:

4. Impressions on Day 2 of the practicum:

LOGBOOK

Days 3 & 4

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. Impressions on Days 3 and 4 of the practicum:

LOGBOOK

Day 5

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. Impressions on Day 5 of the practicum:

4. On leaving work, I feel:

LOGBOOK

Days 6 & 7

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. Impressions on Days 6 and 7 of the practicum:

LOGBOOK

Days 8 & 9

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. Impressions on Days 8 and 9 of the practicum:

LOGBOOK

Day 10

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

_____
_____
_____
_____
_____

2. Details on newly acquired skills, knowledge and workplace procedures:

_____
_____
_____
_____
_____

3. List the advantages and disadvantages encountered during the first 10 days of the practicum:

Advantages: _____
_____
_____
_____

Disadvantages: _____
_____
_____
_____

4. At the end of the second week, I feel:

LOGBOOK

Days 11 & 12

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. Impressions on Days 11 and 12 of the practicum:

LOGBOOK

Days 13 & 14

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. Impressions on Days 13 and 14 of the practicum:

LOGBOOK

Day 15

Date: _____ Work schedule: from _____ to _____

1. Tasks performed:

2. Details on newly acquired skills, knowledge and workplace procedures:

3. List the advantages and disadvantages encountered during the two weeks of the practicum:

Advantages: _____

Disadvantages: _____

4. At the end of the practicum, I feel:

PRACTICUM REPORT

NAME OF PRACTICUM STUDENT: _____

SCHOOL: _____

TEACHER IN CHARGE: _____

At the end of the practicum, students should evaluate their performance and reflect on the influence of the practicum on their future career choice.

1. List three new work-related experiences acquired during the practicum (knowledge, skills, workplace procedures, etc.) and explain their impact.

2. Opinions related to the trade:

   A) Aspects of the trade with which you were already familiar and which were confirmed during the practicum:

   List: _____

   Explanation: _____

   Reaction: _____

B) Aspects of the trade with which you were already familiar but which proved to be inexact during the practicum:

List: _____

Explanation: _____

Reaction: _____

3. Identify one aspect of the trade which differed from the training received. Explain:

4. In a few lines, sum up and explain how the practicum will influence your future career choice.

FEEDBACK CHECKLIST

PRACTICAL EXAMINATION AND STUDENT PARTICIPATION EXAMINATION

Program: *Automobile Mechanics*

Course Code and Title: _____

Version of the Examination: _____

Teacher's Name: _____

School: _____

School Board: _____

Signature : _____ Date : _____

Answer only the questions that apply to the examination.

For each of the following statements, check:

- Box 1 if you completely agree
- Box 2 if you partially agree
- Box 3 if you partially disagree
- Box 4 if you completely disagree

		1	2	3	4
1	The work that the candidate is required to perform throughout the examination is representative of the expected competency as stated in the objective of this course.	☐	☐	☐	☐

Remarks: _____

_____

_____

		1	2	3	4
2	The examination is consistent with the information in the table of specifications.	☐	☐	☐	☐

Remarks: _____

_____

_____

3 The minimum performance standard is at a level that would indicate that the candidate has developed the expected competency. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

4 Enough time has been allotted to complete the examination. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

5 The total time set for evaluation (preparation, administration, grading) is reasonable, given the duration of the course. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

6 The maximum number of candidates to whom the examination may be administered at the same time is acceptable. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

7 The Examiner's Booklet contains a complete list of materials required to administer the examination. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

8 The nature of the task that the examiner is required to perform while administering and grading the examination is acceptable. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

9 The information provided in the Examiner's Booklet is clear and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

10 The information provided in the Candidate's Booklet is clear and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

11 The Performance Evaluation Form or the Participation Evaluation Form is easy to use. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

12 The companion documents (observation checklist, work sheet, drawing, plan, sketches, etc.) are relevant and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

13 The information on grading in the Candidate's Booklet is consistent with all the information on the Performance Evaluation Form. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

ADDITIONAL COMMENTS:

FEEDBACK CHECKLIST

THEORY EXAMINATIONS

Program: *Automobile Mechanics*

Course Code and Title: _____

Version of the Examination: _____

Teacher's Name: _____

School: _____

School Board: _____

Signature : _____ Date : _____

Answer only the questions that apply to the examination.

For each of the following statements, check:

- Box 1 if you completely agree
- Box 2 if you partially agree
- Box 3 if you partially disagree
- Box 4 if you completely disagree

		1	2	3	4
1	The examination questions are formulated in such a way that they allow the examiner to verify whether the student has acquired the stated competency.	☐	☐	☐	☐

Remarks: _____

_____

_____

		1	2	3	4
2	The minimum performance standard is at a level that would indicate that the candidate has developed the expected competency.	☐	☐	☐	☐

Remarks: _____

_____

_____

3 Enough time has been allotted to complete the examination. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

4 The total time set for evaluation (preparation, administration, grading) is reasonable, given the duration of the course. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

5 The instructions provided in the Candidate's Booklet are clear and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

6 The instructions and information provided on the Invigilator's Sheet are clear and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

7 The instructions provided in the Correction Key are clear and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

_____

8 The companion documents (answer sheets, drawings, etc.) are relevant and complete. 1 ☐ 2 ☐ 3 ☐ 4 ☐

Remarks: _____

_____

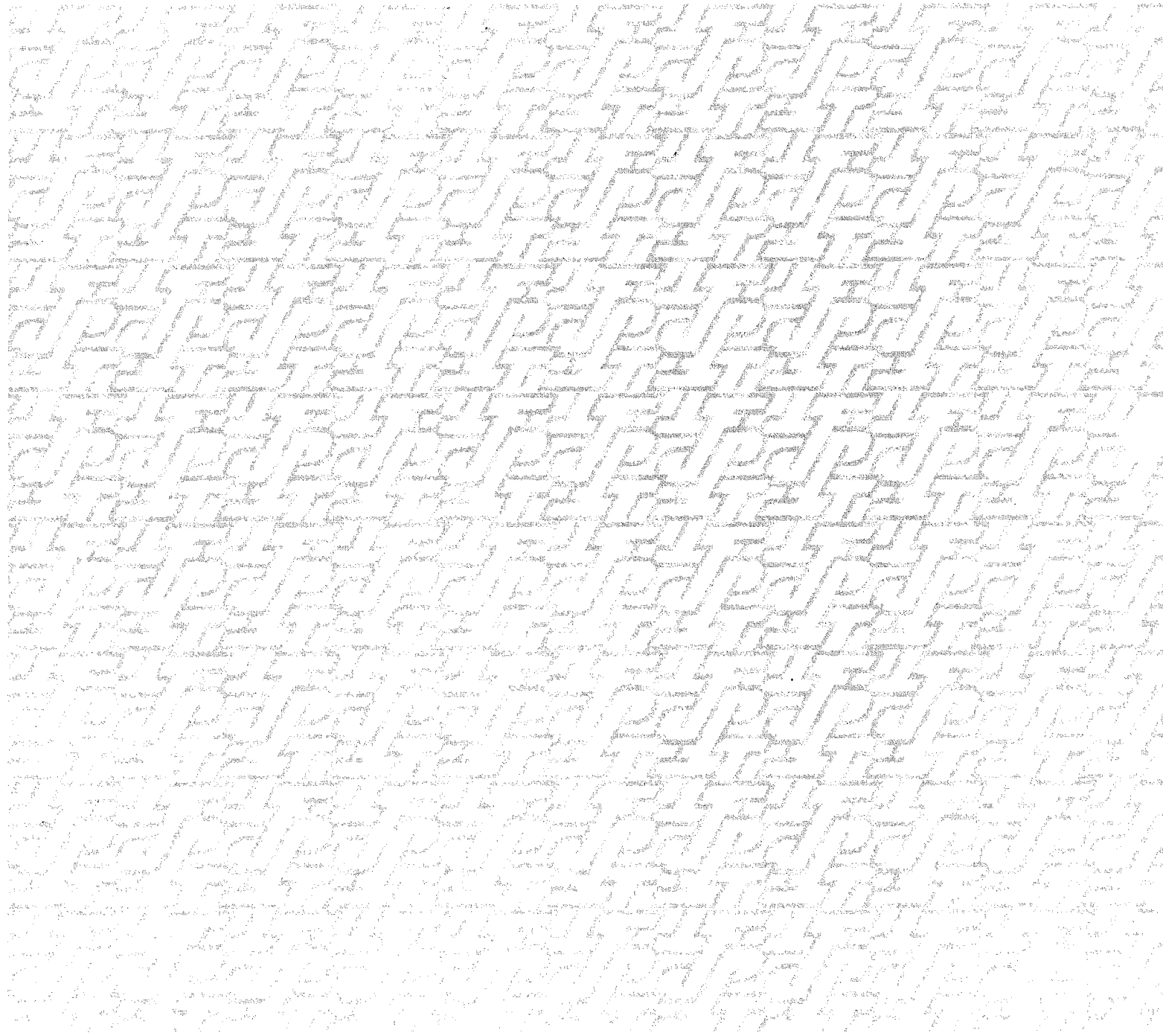
_____

9. Every question in the examination is complete and free of errors (statements, formulations, data, illustrations, space provided for the answer, answer key, etc.). YES ☐ NO ☐

If the answer is No, write the number of the question involved and indicate the changes to be made in the space provided below.

QUESTION	SUGGESTED CHANGES

ADDITIONAL COMMENTS:



Québec

Ministère
de l'Éducation

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