



NZQA accredited and registered provider

New Technology

PRACTICE PAPER ONLY

Test Paper One / Time allowed 90 mins

To be completed by the student

Student Name _____ **Date** __ / __ /2021

School/Provider _____

To be completed by the School Invigilator/Coordinator/Tutor

I confirm that this assessment was completed by the student named above as a closed book exercise under exam conditions

Invigilator Name _____

Invigilator Sign _____

Assessed By _____

Date __ / __ / 2021

**Assessor's
Stamp**

Assessors Note: Materials relate to unit standard 21672

SAMPLE ASSESSMENT INSTRUCTIONS

PLEASE MAKE SURE TO READ AND SIGN THIS SECTION

ASSESSMENT INSTRUCTIONS

- Before starting this assessment you should have achieved a mark of at least 80% for your workbook.
- Use a black or blue ball point pen. (do not use pencil)
- Write your full name on the cover page.
- This is a closed book assessment, so you cannot bring any reference material in, or seek help from anyone else.
- You need to answer all the questions.
- Read the questions carefully, and give detailed answers when asked to.
- You must complete the assessment under exam conditions.
- To achieve the unit standard you must show competency for each outcome.

Complete the following by circling Yes or No as appropriate:

Are you ready to be assessed? **Yes** **No**

Have the assessment instructions these been explained to you? **Yes** **No**

Do you understand the assessment instructions? **Yes** **No**

Have you all the materials/resources that you need for this assessment? **Yes** **No**

Please sign to acknowledge that you have read these instructions and are ready to be assessed.

Student Signature: _____ Date: _____

You must complete the assessment instructions on Page 2 before starting this assessment!

ELEMENT ONE

Demonstrate knowledge of factors affecting vehicle technology changes.

1. **The New Zealand Transport Agency sets rules to ensure that all vehicles on our roads are safe for use and do not harm the environment. Complete the table by explaining how vehicle manufacturers have responded to each of the following sets of rules:**

Vehicle safety rules	
Environment	
Occupant protection	

2. **Explain how political pressure may have encouraged vehicle manufacturers to introduce air bags and ABS.**

- 3. Explain how social pressure may have encouraged vehicle manufacturers to introduce navigation systems.**

- 4. Explain how economic pressure may have encouraged vehicle manufacturers to reduce the production of larger vehicles in favour of smaller more compact vehicles.**

- 5. Explain how environmental pressure may have encouraged vehicle manufacturers to introduce exhaust gas sensors and catalytic converters.**

- 6. Explain how infrastructural pressure may have encouraged vehicle manufacturers to introduce dynamic stability and traction control.**

ELEMENT TWO

Demonstrate knowledge of new and emerging technology in the motor industry.

1. Complete the table by providing a brief description of each of the following fuels.

LPG	
Hydrogen	
Bio-diesel	
Petrol	
Ethanol	
Diesel	
Methanol	
LNG	
Electric	
Hybrid	
CNG	

2. Complete the table by providing a reason why each material is used and where on the vehicle is it used when constructing vehicles.

Material	Reason for use	Where used
Steel alloy		
Aluminium alloy		
Composite materials		
Hard interior trim		
Soft interior trim		

3. Provide a brief description of each of the following technology systems.

Seat belt pretensioners _____

Reverse camera system _____

4. For each of the following provide a brief description of how modern systems have improved on older systems.

Engines	
Transmission	
Suspensions	
Fuel	
Braking	

5. For each of the following name the system that is described.

System designed to detect and automatically compensate for loss of control. Uses brakes and throttle to maintain vehicle control.

System that automatically responds to changes in road conditions and surfaces by changing spring compression rate and damper stiffness.

System designed to prevent the driven wheels from spinning during acceleration.

System designed to prevent wheel lock up.

6. List any Three improvements that manufacturers have introduced to make the driver and passenger more secure.

7. Explain the difference between active and passive systems.

8. List **THREE** active safety systems.

1. _____
2. _____
3. _____

9. Briefly explain how ECU's can help to achieve safer vehicles on our roads.

10. Complete the table by explaining how new technology impacts on each area.

Tooling and equipment	
Staff	
Shop Layout	
Company procedures	

11. List Four sources of information that technicians can access to keep up to date with new technology.

1. _____
2. _____
3. _____
4. _____

FINISHED? CHECK THAT YOU HAVE ATTEMPTED ALL QUESTIONS!



NZQA accredited and registered provider

www.feds.co.nz



473 Te Rapa Road, PO Box 10-244, Hamilton 3241
phone 07 849 9828 | gateway@fairviews.co.nz