



NZQA accredited and registered provider

Final Drive

PRACTICE PAPER ONLY

Test Paper One / Time allowed 90 mins

To be completed by the student

Student Name _____ **Date** __ / __ /2020

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 __ / __ / 2020

**Assessor's
Stamp**

Assessors Note: Materials relate to unit standard 918-30561

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:** _____

ELEMENT ONE

Demonstrate knowledge of final drives.

1. From the list provided identify the gear set shown in the diagram below. Please circle the appropriate gear.



Hypoid bevel gear

Spiral bevel gear

Helical gear

- 1b. From the list provided identify the gear set shown in the diagram below. Please circle the appropriate gear.

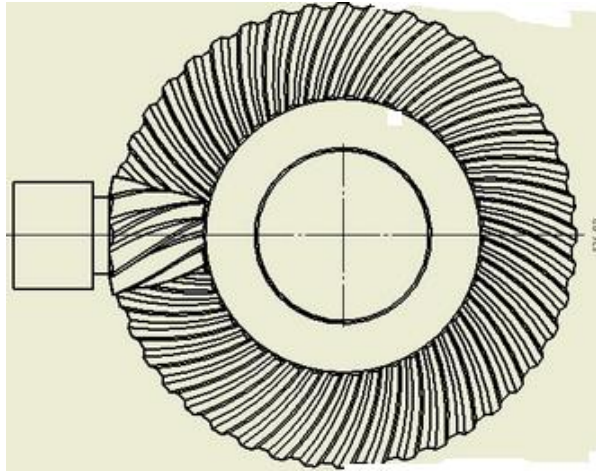


Hypoid Bevel gear

Spiral bevel gear

Helical gear

1c. From the list provided identify the gear set shown in the diagram below. Please circle the appropriate gear.



Hypoid bevel gear

Spiral bevel gear

Helical gear

2. Name the gear sets described in the following paragraphs.

This design is commonly used in older vehicles and truck differentials where high torque is necessary.

Gear set: _____

This design is used in rear wheel drive applications. The centre line of the pinion is passing through the centre line of the crown wheel.

Gear set: _____

This type of gear set is commonly used in front wheel drive applications.

Gear set: _____

3. Why are helical gear sets commonly used in front wheel drive applications.

4. Give two advantages of using Hypoid gear sets over other types of gear sets.

5. Which differential gear type is the noisier in operation and has less tooth contact than a hypoid gear.

ELEMENT TWO

Demonstrate knowledge of differential mechanisms.

1. Why do vehicles require a differential.

2. From the list provided match up LSD clutch type with its appropriate description:

Passive

Hydraulic

Electronic

In this type of limited slip differential set up the differential clutch pack is locked by a spring when one wheel starts to spin or lose traction.

Gear set: _____

In this type of limited slip differential set up the differential clutch pack is locked using an actuator and a pump when one wheel starts to spin or lose traction.

Gear set: _____

In this type of limited slip differential set up the differential clutch pack is locked when an ECU senses wheel spin or loss of traction.

Gear set: _____

3. What is a cone clutch type limited slip differential.

4. How many differentials are fitted to a passive four wheel drive vehicle

5. What is a viscous fluid coupling and why are they used in some applications.

6. Which is smoother in operation, a viscous fluid coupling differential or a gear type differential. Explain the reasons why.

7. Describe the operation of the traction control system.

FINISHED? CHECK THAT YOU HAVE ATTEMPTED ALL QUESTIONS!

Assessor Comments:



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