



NZQA accredited and registered provider

Manual Transmissions

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 920

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 car and light commercial vehicle transmission construction.

1. Name the Three gear types in the picture below.



1: _____

2: _____

3: _____

3. Which type of these illustrated gears is most commonly used in transmissions today?

4. Name the gear type most commonly used in a sliding application such as reverse gear.

5. Name the gear type most commonly used in an Industrial application

6. Name the components labelled 1 to 5 on diagram of the single shaft interlock system below.

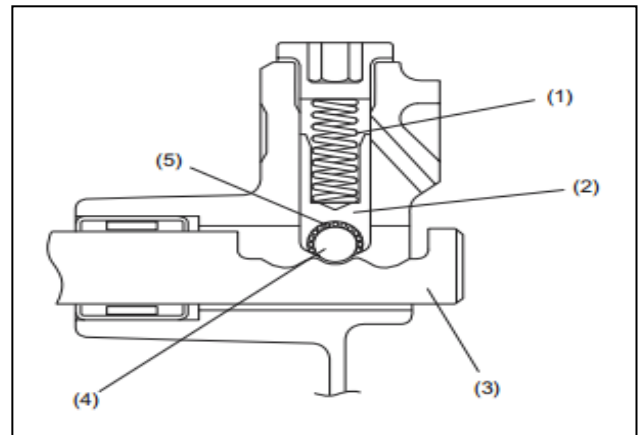
1: _____

2: _____

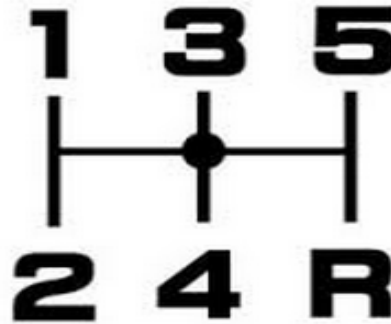
3: _____

4: _____

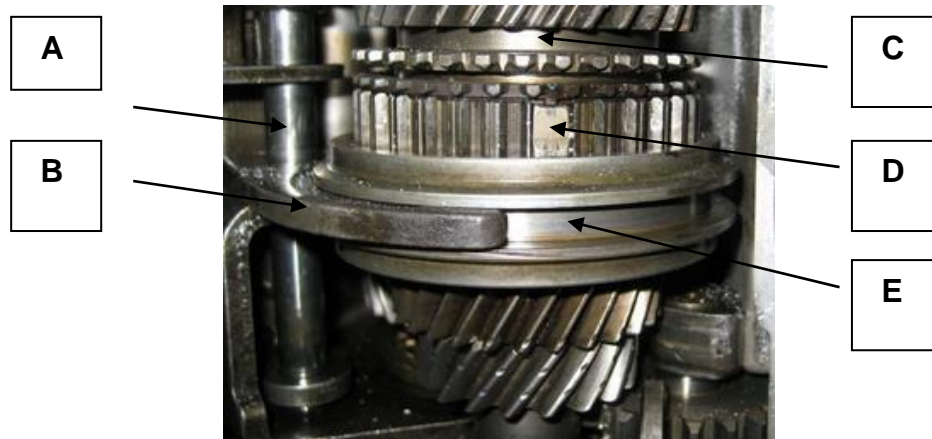
5: _____



7. With this type of gear shift pattern what is required to stop the engagement of reverse when shifting from 5th to 4th?



8. Name the components labelled A and E on the diagram below, and describe the function of the complete assembly.

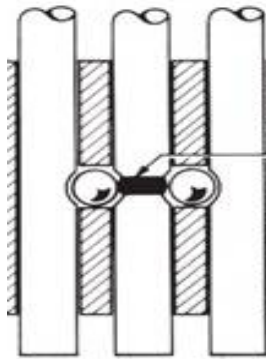


A: _____ B: _____

C: _____ D: _____

E: _____

9. What is the name of the mechanism illustrated below and what is its function?



10. Name the components labelled A and B on the diagram below, and describe the function of the complete assembly.

A: _____

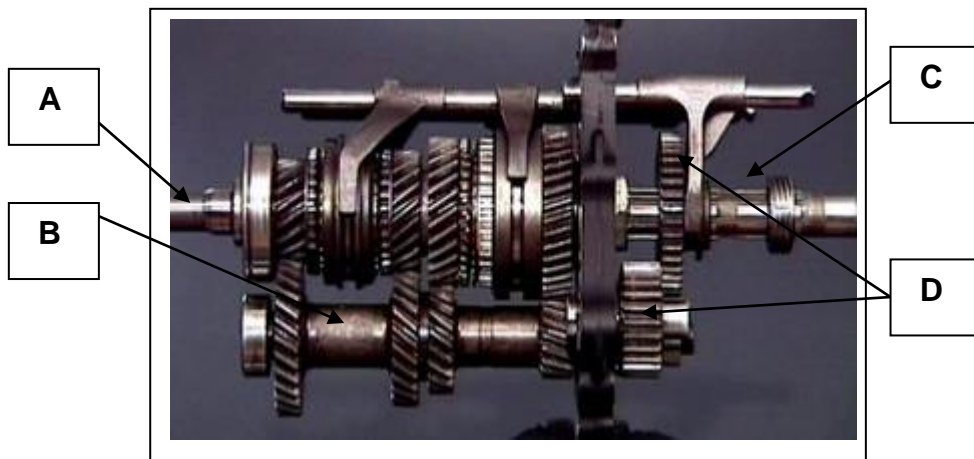
B: _____

Function: _____



11. Describe the method and use of clutch actuators.

12. Name the components A to D on the inline gearbox shown below.



A: _____ B: _____

C: _____ D: _____

13. What is a 'Synchromesh unit' and describe its function?

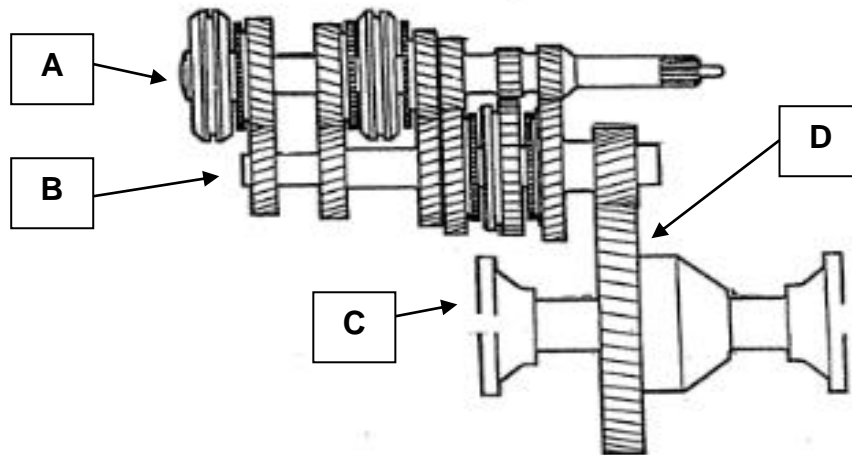
14. List two methods in which bearings, and bushes may be lubricated in a gearbox.

1: _____

2: _____

15. In a front wheel drive gearbox describe the power flow from the input shaft to the drive axles.

16. Name the Four major components labelled A - D on the diagram of a FWD transaxle assembly below.



A: _____ C: _____

B: _____ D: _____

3. The steps for a typical change sequence of an electronic (semi-automatic) transmission have been jumbled below. Please indicate the correct order from start to finish (where 1 is the start point and 9 is the finish point) by placing the appropriate step number in the appropriate box.

ECU receives information about engine RPM, throttle position and vehicle speed

ECU retards ignition timing to reduce torque

ECU signals to the clutch actuator to release the clutch

Driver activates paddle switch to change gear

ECU signals clutch actuator to engage.

ECU receives electric signal from paddle switch.

ECU signals actuators to select gear.

ECU returns ignition timing to normal

ECU signals actuator to engage gear

4. On the diagram below, draw the power flow through the gearbox from the input shaft to the output shaft when 3rd gear is selected.





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