



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

FIRST YEAR THIRD SEMESTER EXAMINATION FOR

CERTIFICATE IN MOTOR VEHICLE ENGINEERING

1503/105/VT MOTOR VEHICLE TECHNOLOGY

DATE: 15/12/2020

TIME: 8.30-11.30 AM

INSTRUCTIONS

attempt all questions

1. a) state the advantages of automatic gearbox used in motor vehicle transmission

(6 marks)

 b) with the help of a diagram explain the construction of an epicyclic gear train used in
 motor vehicle transmission system.

(14
marks)
2. a) State the advantages of compressed air brakes

(6 marks)

 b) with the help of a diagram describe how air brake actuator works

(14
marks)
3. a) State the advantages air suspension system

(4
marks)

 b) Using a well label diagram describe the construction of hydro-gas suspension unit

(16 marks)
4. a) Explain the need for constant velocity joints

(4
marks)

 b) With the help of a diagram explain the construction of a constant velocity joint

(16 marks)

5. a) State the purpose of braking system as used in the motor vehicle industry (3 marks)
- b) With the help of a diagram describe the construction and operation of a disc brake assembly (17 marks)