



MACHAKOS UNIVERSITY

University Examinations 2018/2019

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN AUTOMOTIVE ENGINEERING

2503/105: VEHICLE TECHNOLOGY AND PRACTICE

DATE: 17/4/2019

TIME: 8.30-11.30 AM

INSTRUCTIONS:

Answer Question One (Compulsory) and Any Other Two Questions

QUESTION ONE (40 MARKS)

- a) State the function of the final drive
- b) With the aid of a sketch, explain the operation of a final drive.
- c) State the function of a gearbox.
- d) With the aid of a diagram, explain the operation of a manual three- speed gearbox.

QUESTION TWO (20 MARKS)

- a) State two functions of a clutch.
- b) With the aid of a diagram, explain the operation of a single plate spring clutch.

QUESTION THREE (20 MARKS)

Use sketches to explain the operation of a continuously varying transmission (CVT).

QUESTION FOUR (20 MARKS)

With the aid of a sketch explain the operation of a torque converter

QUESTION FIVE (20 MARKS)

Use a sketch to explain the operation of a transfer gear box used in 4-wheel drive vehicles.