



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

SECOND YEAR SECOND TERM EXAMINATION FOR

DIPLOMA IN INFORMATION AUTOMOTIVE

VEHICLE TECHNOLOGY

MODULE II

DATE: 3/9/2021

TIME: 11:30 – 2:30 AM

INSTRUCTIONS:

ANSWER ALL THE QUESTIONS

1. With the aid of a diagram, explain the construction and the operation of a conventional Differential. (20 marks)
2. Illustrate with diagrams the construction of the following final drive arrangements.
 - (a) Hypoid
 - (b) Worm and wheel(underslang)
 - (c) Spiral (20 marks)
3. Sketch a single piece propeller shaft to include a sliding joint and a universal Joint. (20 marks)
4. With the aid of a diagram, explain the operation of a transfer gearbox. (20 marks)
5. Explain the following operation positions of an automatic gearbox,
 - (a) P
 - (b) R
 - (c) N
 - (d) D
 - (e) L (20 marks)