



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations for 2015/2016

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL AND MANUFACTURING ENGINEERING

FIRST SEMESTER EXAMINATION FOR DIPLOMA MECHANICAL ENGINEERING

MVED 204/1 : VEHICLE TECHNOLOGY (I)

DATE: 8/8/2016

TIME: 8:30 – 10:30 AM

INSTRUCTIONS:

Answer all questions in Section A and any two in Section B.

Section A. (Answer all questions)

1. a) Define the following terms in relation to the steering system: - (5 marks)
 - i. Over steer.
 - ii. Under steer.
 - iii. Slip angle.
 - iv. Toe in.
 - v. Toe out.
- b) Explain the following showing clearly the difference. (5 marks)
 - i. Sprung and unsprung weight.
 - ii. Pitching, rolling and bounce.
- c) What are the functions of suspension. (3 marks)
- d) List and explain the components of the suspension system. (10 marks)
- e) i) List down the two major types of brakes. (2 marks)

- ii) What is ABS? (2 marks)
- iii) Give three advantages of disc brakes over drum brakes. (3 marks)

SECTION B. (ANSWER ANY TWO QUESTIONS)

- 2. Using well labeled diagrams, explain the three types of power assisted steering. (20 marks)
- 3. a) Give the advantages and disadvantages of rigid suspension systems. (5 marks)
b) With the aid of a diagram explain the mac-pherson's strut. (15 marks)
- 4. Explain with a diagram the functioning of the drum brake, elaborating how the leading shoe and trailing shoes function, its advantages and disadvantages. (20 marks)
- 5. a) List down 5 properties of a brake fluid. (5 marks)
b) Explain the operation of tandem/ dual cylinder braking systems. (15 marks)