



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

SECOND SEMESTER EXAMINATION FOR DIPLOMA IN MECHANICAL
ENGINEERING

AUTO ELECTRICS AND ELECTRONICS

DATE: 5/8/2016

TIME: 8:30 – 10:30 AM

INSTRUCTIONS:

This Paper Contains Five Questions. Attempt All The Five Questions. Marks For Each Sections Are As Indicated.

1. a) Distinguish between nonconductors and semiconductors. Give Four examples in each case (4 marks)
 b) Using a well labeled diagram explain the operation of the distributorless ignition system for a SIX cylinder engine (16 marks)
2. a) Name FOUR advantages of the electronic ignition over the conventional ignition system. (4 marks)
 b) Explain the construction and operation of individual coil ignition system. (16 marks)
3. a) Name all the components of the charging system (6 marks)
 b) Using a circuit diagram, explain how rectification of current is done in a THREE phase stator winding with a WHYE wound stator. (14 marks)

4. a) Explain the procedure you will use to check the alternator before removing it. (6 marks)
- b) Explain the procedure of dismantling and inspecting an alternator before reassembling and returning it to the vehicle. (14 marks)
5. a) Name ALL the parts of the starting system. (4 marks)
- b) Using a well labeled diagram, explain the operation of a starter motor with a series wound field windings. (16 marks)