



# TECHNICAL UNIVERSITY OF MOMBASA

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Faculty of Engineering and Technology

DEPARTMENT OF MECHANICAL AND AUTOMOTIVE ENGINEERING

## UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MECHANICAL ENGINEERING (DMEN 6)

EAU 2307 AUTO ELECTRICAL TECHNOLOGY AND PRACTICE III

END OF SEMESTER EXAMINATION

**SERIES: SEPT 2017**

**TIME: 2 HOURS**

**DATE: 2017**

### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Answer **TWO** questions from section **A** and **ONE** Question from section **B**.

**Do not write on the question paper.**

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### SECTION A

Answer any Two Questions from this section

#### Question One

- (a) State four functions of an air-conditioning system fitted in the vehicle (4 marks)
- (b) Name two components in an air conditioning system that are responsible for conducting heat away from the interior of a vehicle, and the that each performs. (4 marks)
- (c) With the aid of a sketch, explain the operation of an air conditioning system fitted in the vehicle.

(12 marks)

### **Question Two**

With the aid of diagrams, explain the operation of the following:-

(a) Manual type screen washer

(10 marks)

(b) Magnetic type fuel gauge

(10 marks)

### **Question Three**

To meet current safety requirements, modern vehicles are designed with some features. Discuss the following of these safety features:-

(a) Crumple zones

(b) Seat belts

(c) Airbags

(d) Passenger safety cell

(20 marks)

## **SECTION B**

**Answer ONE question from this section**

### **Question Four**

Describe a procedure to overhaul a wiper mechanism, explain all the tests carried out.

(20 marks)

### **Question Five**

Outline a typical procedure to carry out complete overhaul of the air conditioning system of a vehicle.