TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA DAE 06

EAU 2308: AUTO-ELECTRICAL TECHNOLOGY II

END OF SEMESTER EXAMINATION

SERIES: APRIL2016

TIME: 2HOURS

DATE: Pick DateMay2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attemptany THREE questions.

Do not write on the question paper.

Q.1

a) List THREE sources of heat that can be removed by HVAC system in a vehicle (3mks)

b) Explain FOUR components of a vehicle heating and air conditioning system (8mks)

c) With the aid of a well labeled diagram explain the working principle of an air conditioning unit in a vehicle (4mks)

d) Name TWO types of automatic air conditioning sensors (2mks)

e) Using a diagram briefly explain the effect of the refrigerants used on automobiles air conditioning system on the environment (3mks)

Q.2

a) Explain the importance of vehicle auxiliary gauges (2mk)

b) Name and explain the work of FIVE gauges used in vehicles (10mks)

c) Explain FOUR safety gadgets used in vehicles (8mks)

Q.3

a) Explain the importance of cable sizing in auto electrical components (3mks)

b) Explain FIVE properties in which auto electrical cables can be specified (10mks)

c) List THREE factors to consider when selecting cables for automobile use (3mks)

d) Discuss the materials used in automotive cables (4mks)

Q.4

a) Explain THREE basic components of a vehicle audio system (6mks)

b) Explain the function of an equalizer in a car audio system and give THREE types of equalizers (5mks)

c) Explain the difference between the following types of radios used in car audio system

i. internet radio
ii. satellite radio
iii. HD radio (6mks)

d) Discuss active and passive crossovers as used in vehicle audio systems (3mks)

Q.5

a) With the aid of a diagram show FIVE components of a lead acid battery used in automobiles (10mks)

b) Explain the reactions taking place in a vehicle battery during

i. Charging

ii. Discharging (6mks)

c) State FOUR signs that indicate failure of the battery in a vehicle (4mks)