

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF TECHNOLOGY EDUCATION
DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION
SECOND SEMESTER 2012/2013 SESSION EXAMINATION

COURSE CODE: AUT 522
COURSE TITLE: AUTO ELECTRICAL SYSTEM & AIR CONDITIONING (2 UNITS)
TIME ALLOWED: 2 HOURS
INSTRUCTION: ANSWER ANY FOUR (4) QUESTIONS.
Each question carries equal marks

- 1(a) Enumerate briefly on the following:
i) Transducer ii) Rotor iii) Sensor iv) Diode
v) Heat Sink
- (b) State Three (3) factors that affect the evaporator's design
- (c) What is dwell angle of a distributor?
- 2 (a) Describe the distinctions between Inertial Drive and pre-engaged Drive of starter motors.
- (b) What is capacity of a lead – acid battery?
- (c) State at least five (5) safety rules that must be observed concerning air conditioning system
- 3 (a) State two (2) functions on each of the following: i) Heater Core or Thermostat expansion valve ii) Compressor iii) Sight Glass
- (b) Describe the fundamental difference between computerized and transistorized ignition system
- (c) Mention at least five (5) preliminary checks that must be made before wheel alignment and steering angles operation.
- 4 (a) State four (4) conditions in which the variation of specific gravity depend.
- (b) With the aid of a diagram, describe the principles of refrigeration cycle.
- (c) State three (3) main objectives that automobile headlamps must fulfill
- 5(a) State five (5) properties of refrigerant oil in Auto-air conditioning
- (b) State two (2) main classifications of auto-electric horns and describe the principle of operation of one with a good sketch.
- (c) What is ABC of driving?
- 6(a) Enumerate briefly on the process of ionization
- (b) State the main three (3) features that identify spark plug and illustrate with a sketch
- (c) Discuss the process in which an intermittent flow of current to the indicator lights of a flasher unit is produced.