

LAGOS CITY POLYTECHNIC, IKEJA
SCHOOL OF ENGINEERING AND APPLIED SCIENCE
DEPARTMENT OF ELECTRICAL/ELECTRONICS AND COMPUTER
ENGINEERING

2016/2017 SEMESTER EXAMINATION

COURSE	TITLE:	ELECTRICAL	ENGINEERING
COURSE CODE:	EEC 115/EEC 112	SCIENCE I	NO OF QUESTIONS : 6
FOR WHOM:	ND YR I	CE, EE	TIME ALLOWED: 2 HRS
ANSWER ANY			PT INSTRUCTIONS:

FOUR QUESTIONS

- (a) State Ohms law

(b) Determine the Two(2) voltages drops across R_1 and R_2 in a circuit where $R_1 = 1.8\Omega$, $R_2 = 2.2\Omega$ and $V = 12v$

(c) State kirchoffs current law.
- (a) Define Electric Field Strength

(b) What is Relative Permutivity

(c) A wire of diameter 0.6mm, resistivity 1.1×10^{-8} has a resistance of 44Ω calculate the length of the wire.
- (a) Give two examples each of conductors and semi conductors

(b) What is the difference between AC current and DC?

(c) Write down the formula for
 (i) Current (ii) Voltage (iii) Resistance
- (a) Define Mathematically Temperature coefficient of resistance (α)

(b) State Joules law

(c) Calculate the workdone in moving through a distance of 25m by a force of 20N which acts in the direction of the motion of the body.
- (a) Two plates each of area $5cm^2$, are placed parallel to each other and very close together in space between the plates. and a charge of 15×10^{-6} is stored on the plates. Calculate the electric flux density the plates.

(b) The power expended in a certain resistor is given by I^2R . If the power expended in the resistor is 175W when the current is 5A, calculate the power in the resistor when.
 (i) Both current and resistance are double
 (ii) Current is half and resistance double
 (iii) When current is double and resistance half
- (a) A coil has a resistance of 50Ω at $0^\circ C$. If the the temperative coefficient of the coil is $0.0043\Omega/1^\circ C$, determine the resistance of the coil at $25^\circ C$.

(b) An Electric kettle takes 2kw at 2400. Calculate
 (i) The current (ii) The resistance of heating element

(c) An electric motor develops 5kw at the speed of 100 rev/mn. Calculate
 (i) the worth done in 30 mins
 (ii) in the kilowaff hour

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Lauren Gardner



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