

MICHAEL AND CECILIA IBRU UNIVERSITY, AGBARHA-OTOR
SECOND SEMESTER 2016/2017 CONTINUOUS ASSESSMENT TEST
COURSE CODE & TITLE: PHY 102 GENERAL PHYSICS II

INSTRUCTION: Answer All the Questions ON THE QUESTION PAPER

1. (a) What is the name of the lecturer who taught you this course?
 - (b) State: (i) Coulomb's law
(ii) Ohm's law.
 - (c) Two resistors R_1 and R_2 in parallel are connected with a third resistor R_3 in series and a voltage, V is supplied. Draw a circuit diagram for this arrangement. If $R_1 = 6 \Omega$, $R_2 = 3 \Omega$ and $R_3 = 4 \Omega$, determine the current in the circuit.
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2. (a) The phase angle of an RLC series circuit is 25° . Express this in radian.
 - (b) Calculate the impedance of an RLC series circuit whose components are:
 $R = 300 \Omega$, $C = 0.50 \mu\text{F}$, $L = 60 \text{ mH}$, $V = 50 \text{ V}$ and $\omega = 10\,000 \text{ rad/s}$.
 - (c) A transformer is made by winding a primary coil of 2500 turns around an iron core. A secondary winding of unknown turns is made about the same core. If the primary voltage is $250 V_{\text{rms}}$, calculate the number of turns on the secondary coil if its voltage is $60 V_{\text{rms}}$.