# LAGOS CITY POLYTECHNIC, IKEJA
## SCHOOL OF ENGINEERING AND APPLIED SCIENCE
## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
## 2015/2016 SEMESTER EXAMINATION

**COURSE TITLE: ELECT. MEASUREMENT & INSTRUMENTATION II NO OF QUESTIONS : 6**
**COURSE CODE: EEC 235/236 TIME ALLOWED: 2 HRS**
**FOR WHOM: ND YR III CE, EE PT INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS**

1. A coil consists of a resistance of 100Ω and an inductance of 200mh. If an alternating voltage,
V given by V = 200 sin 500t volts is applied across the coil, Calculate.
(a) the circuit impedance
(b) the current flowing
(c) the potential difference across the resistance
(d) the potential difference across the inductances
(e) the phase angle between voltage and current

2. (a) Draw and explain the operation of a power factor meter.
(b) A dynamometer type wattmeter with its voltage coil connected across the load side of the instruments read 250w if the load voltage is 200v, what power is being taken by load? The voltage coil branch has a resistance of 2000Ω.

3. Two wattmeter indicates 10kw and 3kw respectively when connected to measure the input power to a 3-phase balanced load the reverse switch being operated on the meter indicted 3kw reading. Determine
(a) the input power (b) the load power factor.

4. (a) Draw the block diagram of cathode Ray oscilloscope
(c) A cathode Ray Oscilloscope has a time base and signal amplitude control switch being set at 100μs/cm and 20v/cm respectively to produce a square wave form having a width of one complete cycle as 5.2cm on the screen. If the peak to peak height of the wave form is 3.6cm then Calculate the
(i) Periodic time (ii) frequency
(iii) peak to peak voltage (iv) Amplitude

5. (a) List and explain six factors of the instrument selection in three(3) major classes of instrument.
(b) Explain the importance of Humidity measurement II find the power factor of a motor, when its output power is 3024w and the current is 18A from the source voltage of 240v.

6. (a) List and explain 6 factors of the instrument selection in three major classes of instrument.
(b) Explain the importance of humidity measurement in an industry.