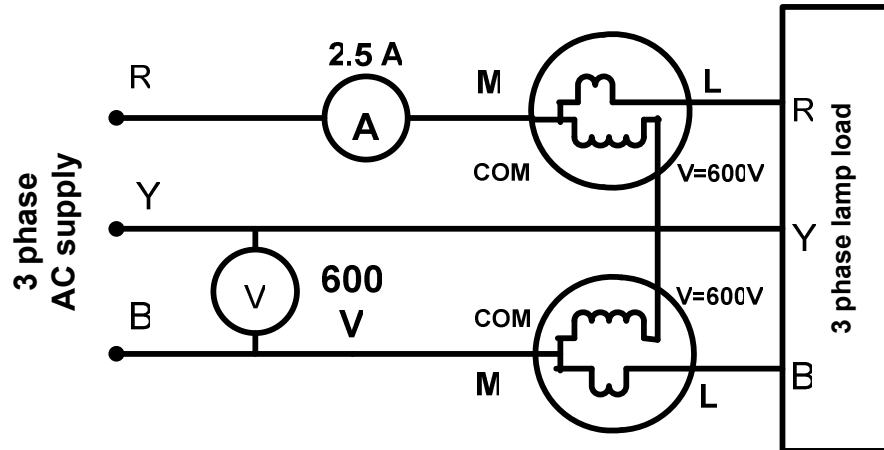# EXPERIMENT NO: 4

ELECTRICAL ENGINEERING

OBJECT: Power measurement in 3-phase system.

Title: Measurement of power consumed by a three phase load using two wattmeter method.

Circuit Diagram:

Apparatus required: Star connected lamp load, one ammeter (0-2 amp), one voltmeter (0-600V), Two Wattmeters-2A, 600V-with range extension 100%

PROCEDURE: The two wattmeter method is applicable for both balance and unbalanced load. Note carefully the multiplying factors of wattmeter for the ranges of current and voltage used.
Lamp loads have unity power factor $\cos\phi = 1$. Note the readings W_1 & W_2.

Repeat for unbalanced load, made by taking out one bulb (anyone) from any one of the 3 phases.

Observation:

Multiplying factor of W_1 =
Multiplying factor of W_2 =

V	I	W_1	W_2	$W_1 + W_2$	Calculate power(only for balanced	%

					load)	Error

<u>Calculations</u>:

Power consumed by load, p = V I Cosφ

<u>Result</u>:

Compare the measured values with calculated power and power factor in each case(for balanced case)