Assignment No.- 5

(1) Define the following :
   a) Peak Value or Amplitude
   b) Root Mean Square (RMS) Value
   c) Average Value
   d) Form Factor   (e) Peak factor
   f) Instantaneous Value   (g) Phase angle
   h) Time period   (i) Frequency
   j) Amp Phase difference

(2) What do you understand by 'phase lag' and 'phase lead' ? Explain with the help of an example.

(3) For a sinusoidal voltage wave $v(t) = V_0 \sin \omega t$, derive the expression for the following :
   a) RMS voltage   (b) Average voltage
   c) Form factor   (d) Peak factor

4) Write short notes on following :
   a) Power factor   b) Q-factor of a coil
   c) Active Power   d) Reactive Power
   e) Apparent Power   f) Power Triangle
   g) Impedance Triangle

5) Explain and derive the expression of current in 1-ϕ AC circuits for the following cases:
   a) Resistive circuit
   b) Purely Inductive circuit
   e) Purely capacitive circuit
   f) R-L circuit
   g) R-C circuit
   h) R-L-C series circuit