**PARUL UNIVERSITY**

**FACULTY OF ENGINEERING & TECHNOLOGY**

**DEPARTMENT OF ELECTRICAL ENGINEERING**

**ELECTRICAL ENGINEERING SUBJECT CODE: 303106103**

ASSIGNMENT – II

*(Chapter: 2)*

1. Define the following. (i) Voltage (ii) Current (iii) Frequency (iv) Cycle (v) Time Period

(vi) Peak Value (vii) Average Value (viii) R.M.S. Value (ix) Instantaneous Value (x) Amplitude Factor (xi) Form Factor (xii) Phase & Phase Difference.(xiii) power factor

1. Explain how to produce an Alternating EMF.
2. Derive the expression of Average value and R.M.S. value in terms of Maximum value for sinusoidal quantities.
3. Prove that current in purely inductive circuit current is always lags by 90º than voltage and average power consumed is zero. Draw phasor diagram and the wave forms of voltage, current and instantaneous power.
4. Explain series R-L circuit in brief. Draw phasor diagram and the wave forms of voltage, current and instantaneous power.
5. Explain series R-C circuit in brief. Draw phasor diagram and the wave forms of voltage, current and instantaneous power.
6. Discuss Resonance in R-L-C series circuit. Explain how power factor , XL, and R vary with frequency. Draw relevant vector diagram.
7. What is Q-factor of series resonant circuit? Also explain features of series resonance.
8. Establish relationship between line and phase voltages and currents in balanced star and delta connection. Draw complete phasor diagram of voltages and currents.