PART A – Answer all **(5x2=10 marks)**

1. What is the relation between the self-inductance and reluctance?
2. Define coefficient of coupling.
3. Draw the power triangle and mention what each side represents.
4. Define power factor.
5. Find L when a current of 5 A flows through a 100 turns coil creating a flux of 0.5 mWb.

PART B – Answer any 2 **(2x7.5=15 marks)**

6. In an ac circuit R and L are connected in series. Voltage and current are $e(t)= 200\sin(314t)$ and $i(t)= 20\sin(314t-30°)$. Calculate a).RMS of voltage and current, b) Frequency, c) Power factor, d) Power, e) R and L values.
7. Verify $B=\mu H$ for a toroidal air cored coil with 2000 turns having a mean radius of 25 cm. Diameter of each turn is 6 cm. current in the coil is 10 A. Also find MMF, flux, flux density and flux intensity.
8. Find average value, RMS value, Peak factor and Form factor the following waveforms