## Assignment – Lecture 28

1. An emf whose instantaneous value at time t is given by 283 sin(100πt + π/4) Volts is applied to an inductive circuit and the current in the circuit is 5.66 sin(100πt − π/6) Amperes. Determine i) the frequency of the emf, ii) the resistance and inductance of the circuit, iii) the active power absorbed. If series capacitance is added so as to bring the circuit into resonance at this frequency and the above emf is applied to the resonant circuit, find the corresponding expression for the instantaneous value of the current and also find the value of the series capacitance. Draw the phasor diagram representing the circuit before and at resonance.