Lecture -27

1. A series RLC circuit draws a current of 20A when connected to 200V, 50Hz supply. If the total active power drawn from the source is 500W and the circuit behaves effectively like an inductive circuit (series RL type), determine

i) Power factor of the circuit

ii) Inductance in the circuit if Capacitance is 100µF

2. From the following phasor diagram find the following quantities:

(i) Power Factor of the circuit

(ii) Reactive power in the circuit

(iii) Magnitude of supply voltage

Also, Redraw the phasor diagram by taking supply voltage as reference, mentioning all the voltages and current. Current phasor is 10 A , V_C is 6V and V_L is 10 V.