Lecture -28

1. A coil of power factor 0.6 is in series with a 100μF capacitor. When connected to a 50Hz supply, the potential difference across the coil is equal to the potential difference across the capacitor. Find the resistance and inductance of the coil.

2. A coil A takes a current of 2A at a power factor of 0.8 lagging when applied voltage is 10V. A second coil B takes a current of 2A at a power factor of 0.7 lagging when applied voltage is 5V. What voltage will be required to produce a total current of 2A when coils A and B are connected in series? Find the power factor in this case. Consider supply frequency to be same in all cases.