

Class Test 2 (Unit 2, Fundamentals of Network Systems)

1. Find the Thevenin's equivalent of the given circuit in Fig. 1.
2. Find current in each branch of the circuit shown in Fig. 2.
3. A voltage of $v = 2 \times 10^3 \sin \omega t + 300 \sin 3\omega t + 50 \sin \omega t$ is applied to a series circuit having $R = 10\Omega$, $C = 30 \mu F$ and variable inductance for $\omega = 200 \text{ rad/sec}$.
 - a) Find the value of inductance so as to give resonance at 4th harmonic frequency.
 - b) What are the AC values of the voltage and current in this circuit?
4. Find Thevenin's equivalent of the given circuit in Fig. 3.
5. Calculate the resonant frequency of the given circuit in Fig. 4 and comment on its dependence on the variable resistance

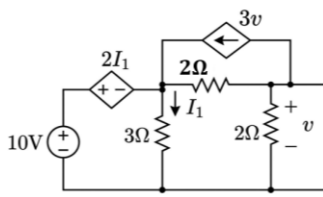


Fig. 1

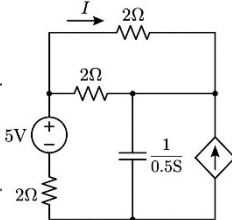


Fig. 2

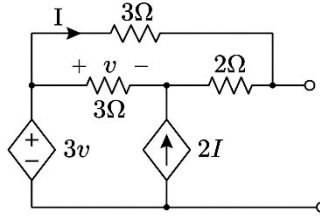


Fig. 3

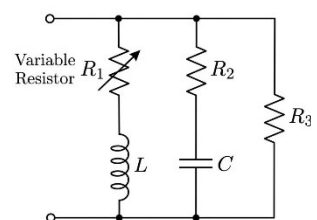


Fig. 4