Course Code: 10B11EC111   **Max. Marks: 35**
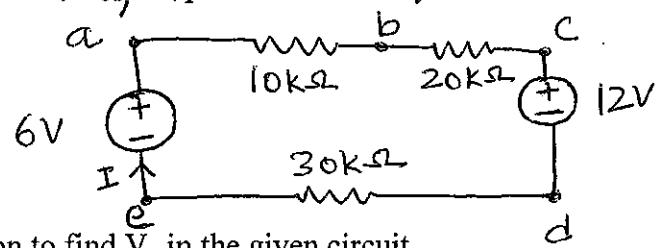
**Course Name: Electrical Circuit Analysis**   **Max. Time: 2Hr.**

Course Credit: 04

Note: All questions are compulsory. Carrying of mobile phone during examination will be treated as case of unfair means. Missing data if any can be appropriately assumed.
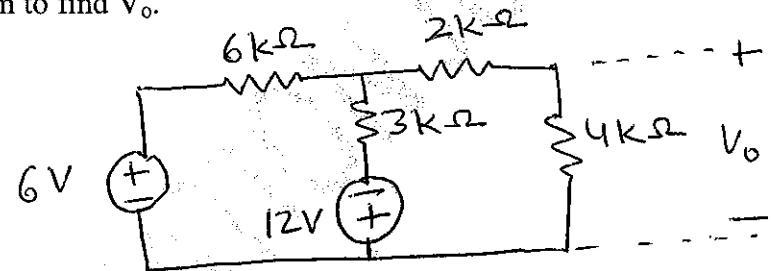
1. For the circuit find I, V_{bd}, power absorbed by the 30kΩ resistor and V_{bc}.   (5)
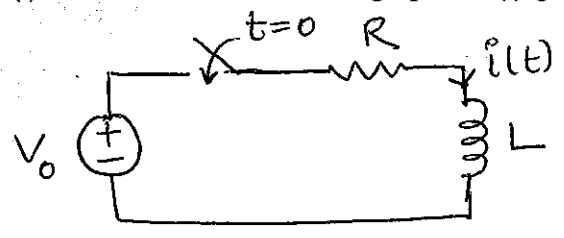

2. Use superposition to find V_0 in the given circuit.   (5)
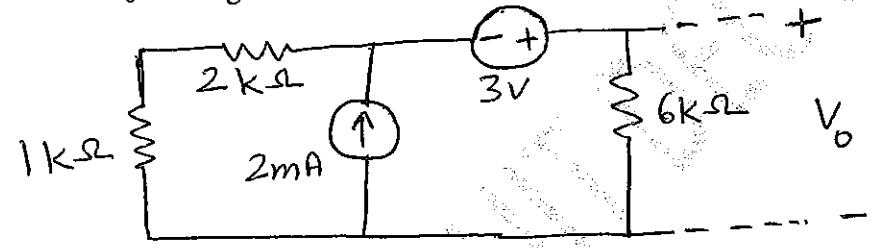
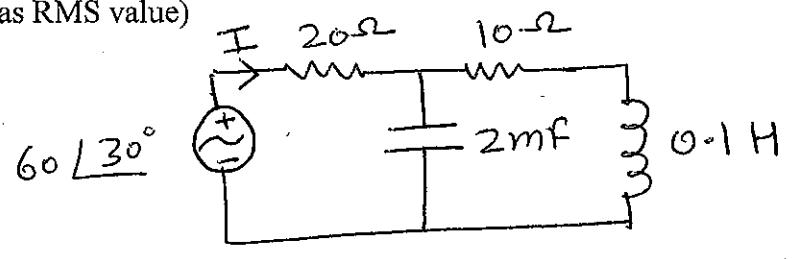
3. Use Norton's theorem to find V_0.   (5)

4. Derive the expression for i(t) in the circuit. Sketch the graph of i(t) giving proper labels.   (5)

5. Find the effective impedance of the circuit. Find the active power delivered by the source. (Voltage is given as RMS value)   (5)

6. What is RMS value? Derive the expression for the RMS value of a sine wave. Find the RMS value of the voltage, v(t) = 340 cos(314t+30°).   (5)

7. What is resonance in series RLC circuit? Draw the graph of impedance with respect to frequency indicating resonance frequency. Draw its phasor diagram also.   (5)