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| **S NO** | **QUESTION** | **KNOWLEDGE**  **LEVEL** | **CO** |
| **UNIT I** | | | |
| **1** | Explain the following  i) Kirchhoff’s laws. ii) Dependent sources. iii) Source transformations. with relevant diagrams | **K2** | **CO1** |
| **2** | Calculate the resistance between the terminals A – B. | **K3** | **CO1** |
| **3** | Using Mesh analysis, find current through 4 ohm resistor. | **K2** | **CO1** |
| **UNIT 2** | | | |
| 1 | Define and explain the following terms  i) Branch ii) Tree iii) Twig iv) Path v) Cutset | **K1** | **CO2** |
| 2 | Draw the graph, write down the TIE- SET Matrix for the following network | **K2** | **CO2** |
| 3 | Draw the graph, Trees and write down the CUT- SET Matrix for the following network | **K2** | **CO2** |
| **UNIT 3** | | | |
| **1** | Find the Thevenin’s equivalent resistance in the circuit across the terminals ab. Then find the current through RL = 16 ohm | **K3** | **CO3** |
| **2** | Find the current in each resistor using superposition principle of figure | **K3** | **CO3** |
| **UNIT 4** | | | |
| **1** | (a)Derive the expression for power in 1-φ A.C.Circuits.  (b) A sinusoidal 50Hz voltage of 200v supplies the three parallel circuitsas shown in figure. Find the currentin each circuit and the total current. Draw the vectordiagram | **K2** | **CO3** |
| **2** | A series circuit consisting of a 10Ω resistor, a 100μF capacitor and a 10mH,inductor is driven by a 50 Hz a.c. voltage source of maximum value 100volts. Calculate the equivalent Impedance, current in the circuit, the power factor and power dissipated in the circuit | **K2** | **CO3** |
| **3** | a)Derive an expression for R.M.S. Value of current in single phase R-L circuit .  b)Derive an expression for R.M.S. Value of current in single phase R-C circuit | **K3** | **CO3** |
| **UNIT 5** | | | |
| **1** | Using superposition theorem calculate current through (2+j3) ohm impedance  branch of the circuit shown. | **K3** | **CO3** |
| **2** | Determine the maximum power delivered to the load in the circuit | **K3** | **CO3** |
| **3** | Using the principle of superposition theorem find the current in 5Ωresistor | **K3** | **CO3** |
| **UNIT 6** | | | |
| **1** | Given a series RLC circuit with R = 10 ohms, L = 1 mH and C = 1µF  Connected across a sinusoidal source of 20 V with variable frequency.  Find (i) The resonant frequency (ii) Q factor of the frequency  (iii) Half power frequencies | **K2** | **CO4** |
| **2** | A series RLC circuit has R= 10, L=0.5 H, and C= 40 *¹* F. The applied  voltage is 100V. Find  (a) Resonant frequency  (b) Quality factor of coil.  (c) Upper and lower half power frequencies  (d) Bandwidth  (e)Current at half power points.  (f)Voltage across inductance at resonance | **K2** | **CO4** |
| **3** | A series RLC circuit has Q = 75 and a pass band (between half power frequencies) of 160 Hz. Calculate the resonant frequency and the upper and lower frequencies of the pass band. | **K3** | **CO4** |