

B.Tech I Year (R07) Supplementary Examinations, May 2011
NETWORK ANALYSIS

(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering, Electronics & Control Engineering, Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. A 50 ohm resistor is in parallel with a 100 ohm resistor. The current in 50 ohm resistor is 7.2A. What is the value of third resistance to be added in parallel to make the line current as 12.1A?
2. In an AC circuit the applied voltage is given by $v = 200 \sin 314t$ and the expression for the leading current is given by $i = 10 \cos 314t$. Find the circuit constant and find the power factor of the circuit.
3. A symmetrical 3 phase, 400 V system supplies a balanced mesh connected load. The current in each branch circuit is 20A and the phase angle is 40deg lag. Find
 - (a) the line current
 - (b) the total power.
4. (a) What is complete incidence matrix? How is reduced incident matrix obtained from it? Explain with suitable example.
 (b) Explain network analysis using network topology based on KVL and KCL.
5. State and Explain with proof of Reciprocity Theorem.
6. Find the Y - parameters for the bridged T-network. As shown in figure 1.

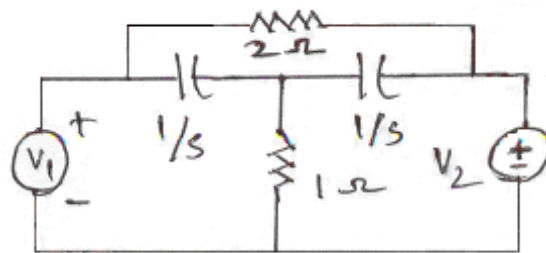


Figure 1:

7. Derive the DC response of an RC circuit.
8. Categorize filters and explain.
