Code :R7100406

R7

B.Tech I Year (R07) Supplementary Examinations, December 2010
NETWORK ANALYSIS
(Common to Electronics & Communication Engineering, Electronics & Instrumentation Engineering, Electronics & Control Engineering and Electronics & Computer Engineering)

Time: 3 hours **Max Marks: 80**

Answer any FIVE questions
All questions carry equal marks

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1. In the circuit shown in figure 1, determine the current through the 2 Ω resistor and the total current delivered by the battery. Use Kirchoff's laws.

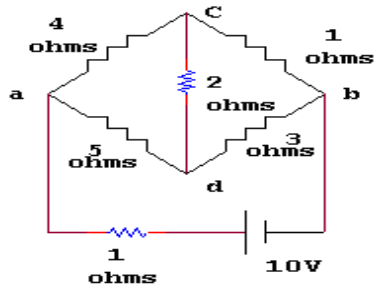

Figure 1:

2. Define average value and obtain in the same for a half wave rectified voltage wave.
3. (a) Compare series and parallel resonance.
   (b) Define band width. Draw a sketch and explain.
   (c) Define Q factor of a coil. Derive an expression for the same.
4. Write the tie - set schedule for the n/w shown in figure 2.

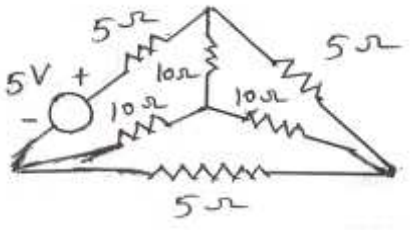

Figure 2:

5. State and Explain with proof of Tellegan's Theorem.
6. For the two port n/w shown in the figure 3, the currents I_1 and I_2 entering at port 1 and 2 respectively are given by the equations.
   $I_1 = 0.5\ V_1 - 0.2\ V_2$
   $I_2 = -0.2V_1 + V_2$

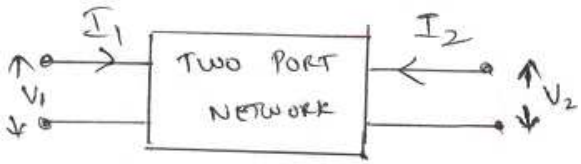

Figure 3:

   Where V_1 and V_2 are the port voltages at port 1 and 2 respectively. Find the Y, Z, ABCD parameters for the n/w. Also find its equivalent p network.
7. Derive the DC response of an RC circuit.
8. Categorize filters and explain.

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