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Question Paper Code: EC302PC
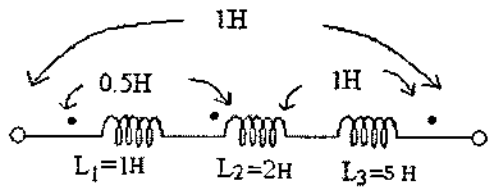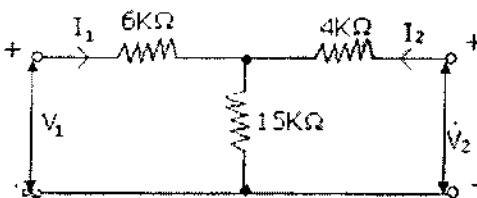
ACE-R20

Semester Supplementary Examination
II B. Tech- I Semester- SEPTEMBER-2022
NETWORK ANALYSIS AND TRANSMISSION LINES
(Electronics and Communication Engineering)

Time: 3 Hours   **Max. Marks: 70**

H. T. No									

Answer any 5 Questions out of 8 Questions from the following

Q.No	Question	Marks
1. a)	Define Graph, Tree, Basic tie set matrix and cut set matrix for a planar network with an example.	7
b)	Write short notes on dot convention used in magnetically coupled coils.	7
2. a)	Find the total inductance of the three series connected coupled coils as shown in figure below	7
b)	Explain how RC circuit acts as Integrator.	7
3. a)	Bring out the differences between series and parallel resonance.	7
b)	Derive the sinusoidal response of series RC circuit.	7
4. a)	Find the Z-parameters for the network shown in figure below	7
b)	Using the relations between Y,ABCD with Z parameters, Calculate Y and ABCD parameters for the above problem 4(a).	7
5. a)	Design a symmetrical T Attenuator with attenuation of 20 dB and design impedance of 600 Ω.	7
b)	Explain clearly the terms: a) Characteristic Impedance and b) Image Transfer Constant.	7
6. a)	Calculate reflection coefficient and SWR for the transmission line with load $Z_L = 50 + j0\ \Omega$, and characteristic impedance of $Z_0 = 50\ \Omega$.	7
b)	Derive the expression for characteristic impedance of a transmission line.	7

7. a)	Explain the concept of infinite transmission line with a neat diagrams.	7
b)	Explain the significance and utility of $\lambda/8$, $\lambda/4$ and $\lambda/2$ lines.	7
8. a)	Explain the basis for construction of Smith chart. Illustrate how it can be used as Admittance chart.	7
b)	Define the reflection coefficient and derive the expression for the input impedance in terms of reflection coefficient	7