R20 Regulation *Subject code:3P3DE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

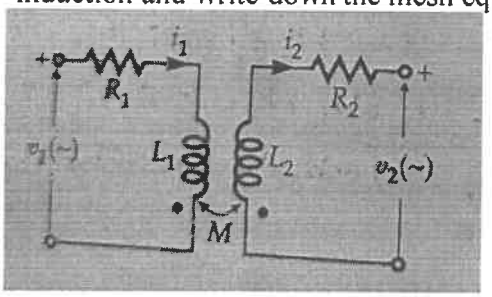
B.Tech III Semester Supplementary Examinations, December 2024

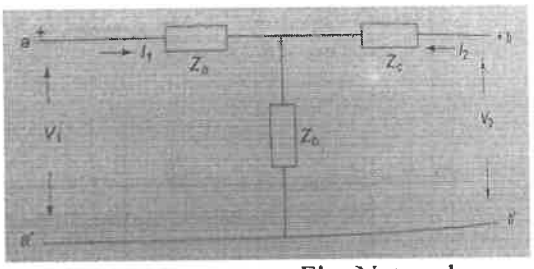
NETWORK ANALYSIS

(ECE)

Maximum Marks: 70 Date:11.12.2024 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A		
All the following questions carry equal marks (10X2M=20) Marks)		CO	Bloom Tx
1	Write the Basic cut set matrix.	1	L1
2	What is the relation between link and branches?	1	L1
3	Define the first and second order system	2	L1
4	Define time constant.	2	L1
5	Write the initial conditions for the capacitor?	3	L1
6	What is the procedure for evaluating final conditions?	3	L1
7	Define driving point impedance.	4	L1
8	Define current transfer function.	4	L1
9	Define band pass filter and band elimination filter.	5	L1
10	Define high pass filter.	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	A. Explain about formula for coefficient of coupling. [5M] B. Explain about self and mutual inductance of the coil. [5M]	1	L3
	OR		
12	Fig represents a coupled coil circuit where L_1=20mH, L_2=50mH. If the coefficient of mutual induction is 0.8, Find the Value of mutual induction and write down the mesh equations in time domain. [10M] 	1	L2
13	Derive the current expression for series RL circuit. [10M]	2	L2
	OR		

14	For series RLC circuit L=1H, C=1F, R=5ohm excited with dc source of 20V. Find the current equation when switch is closed t=0. [10M]	2	L2
15	Write short notes the following terms Laplace transformation and inverse Laplace trans formation [10M]	3	L2
	OR		
16	Derive the Convolution integral of laplace transform [10M]	3	L2
17	Determine Y parameters in terms of Z parameters [10M]	4	L2
	OR		
18	In the given network as shown in Fig. Find Z – parameters [10M]  Fig. Network	4	L2
19	Explain design of m- derived high pass filter [10M]	5	L2
	OR		
20	Explain classification of filters in detail? [10M]	5	L3