R20 Regulation *Subject code: 3P3DE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, July 2026

NETWORK ANALYSIS

(ECE)

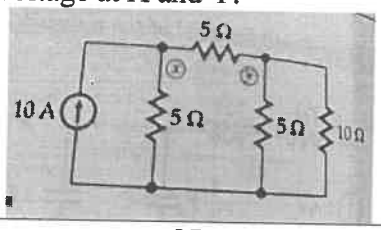
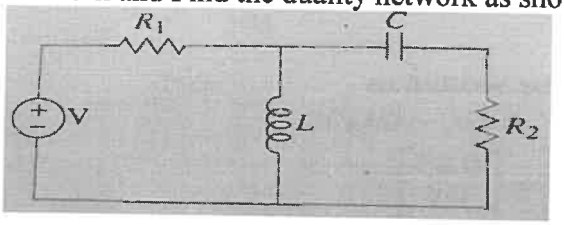
Maximum Marks: 70 Date: 20.06.2026 Duration: 3 hours

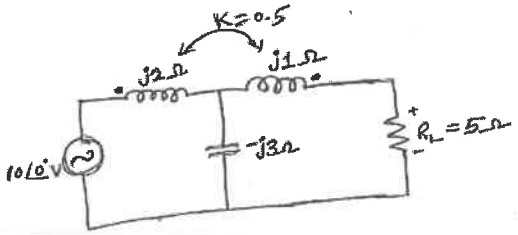
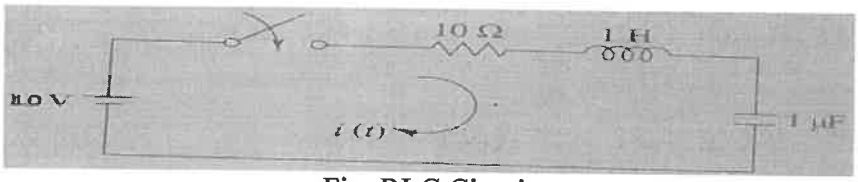
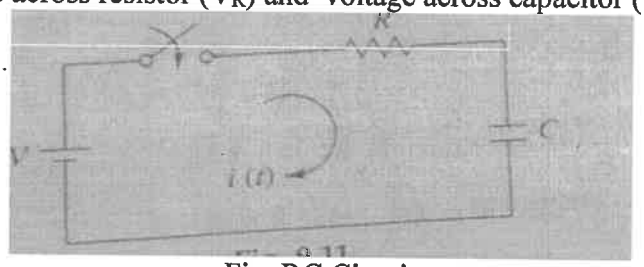
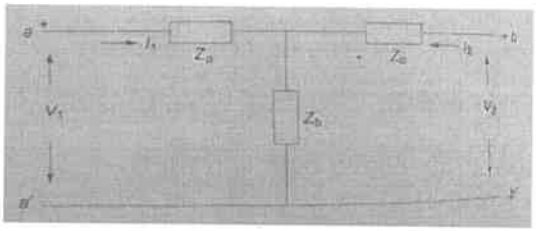
Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	Write the Basic cut set matrix.	2M	1	L1
2	What is the relation between link and branches?	2M	1	L1
3	Define the first and second order system.	2M	2	L1
4	Define steady state.	2M	2	L1
5	Define initial value theorem.	2M	3	L1
6	Write the procedure for evaluating initial conditions.	2M	3	L1
7	Write about driving point function	2M	4	L1
8	Define hybrid parameter.	2M	4	L1
9	Define the filter.	2M	5	L1
10	Write the functions of band rejection filter.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Obtain equilibrium equation using nodal equations for the network shown in fig. Also find node voltage at X and Y. 	10M	1	L2
	OR			
12	Explain duality network and Find the duality network as shown in Fig. 	10M	1	L2
13	Derive the current expression for series RL circuit.	10M	2	L2

	OR			
14	Find the voltage drop across 5 ohm resistor. 	10M	2	L2
15	In the given RLC circuit as shown in Fig. the switch is closed at t=0., find value for I, voltage across resistor and voltage across capacitor.  Fig. RLC Circuit	10M	3	L2
	OR			
16	In the given RC circuit as shown in fig.Find the expression for the current i(t), voltage across resistor (V_R) and voltage across capacitor (V_L)  Fig. RC Circuit	10M	3	L2
17	Determine the interrelationship between ABCD parameters and Z parameters	10M	4	L2
	OR			
18	In the given network as shown in Fig. Find Z – parameters. 	10M	4	L2
19	Explain classifications of filters in detail.	10M	5	L2
	OR			
20	Explain design of m–derived low pass filter.	10M	5	L2