



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 2025

**NETWORK ANALYSIS
(ECE)**

Maximum Marks: 70

Date: 24.12.2025

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	Define Ideal Transformer.	2M	1	L1
2	Write the forced response and natural response.	2M	1	L1
3	Define first and second order system.	2M	2	L1
4	Define steady state.	2M	2	L1
5	Write the initial conditions for the inductor.	2M	3	L1
6	Write the initial conditions for resistor.	2M	3	L1
7	Define driving point functions.	2M	4	L1
8	Define the current transfer function.	2M	4	L1
9	Write the need of filter.	2M	5	L1
10	Define composite filter.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Show that for an ideal transformer, $AD-BC=1$ where A,B,C,D are transmission parameters in the two port network.	10M	1	L2
OR				
12	Explain about procedure for formation of a fundamental cut set matrix.	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 network of Fig. the switch is closed at $t=0$. With the inductor uncharged, find value for I , di/dt and d^2i/dt^2 at $t=0$.	10M	3	L2

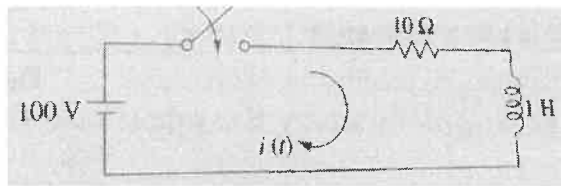


Fig. RL circuit

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	4	L2

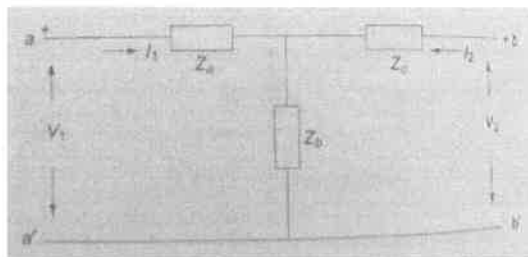


Fig. Network