



Regulation R18

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

Subject code: 2P3DF

## B.Tech III Semester Supplementary Examinations, July 2022

### NETWORK ANALYSIS

(ECE)

Maximum Marks: 70

Date:01.08.2022 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)

- 1 Write about mutual induced e.m.f.
- 2 Explain the following terms  
(i) Tree (ii) Co- Tree
- 3 Define Transient response.
- 4 Define the term time constant.
- 5 Mention the initial conditions for the capacitor.
- 6 Write the procedure for evaluating initial conditions.
- 7 Define driving point admittance.
- 8 Define voltage transfer function.
- 9 Define low pass filter.
- 10 Define composite filter.

#### Part-B

Answer All the following questions.

(10M X 5=50Marks)

- 11 a) Explain about formula for coefficient of coupling 5  
b) Show that for an ideal transformer,  $AD-BC=1$  where A,B,C,D are transmission parameters in the two port network. 5

OR

- 12 a) Explain about procedure for formation of a fundamental cut set matrix 5  
b) Explain duality network and Find the duality network as shown in Fig. 5

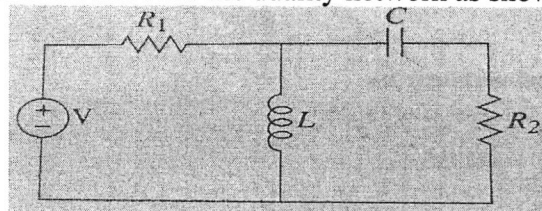
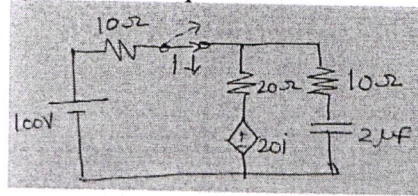


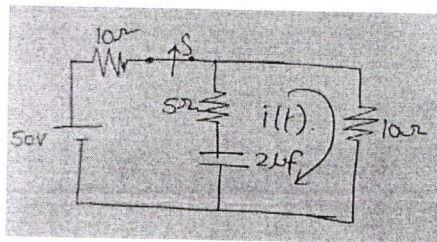
Fig. Network

- 13 Explain about Free response and Forced response? For the circuit shown in fig. Find the current equation when the switch is opened at  $t=0$ . 10



OR

- 14 In the circuit shown in fig. determine the current equation .When the switch is opened at  $t=0$ . 10



- 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  $t=0$  10

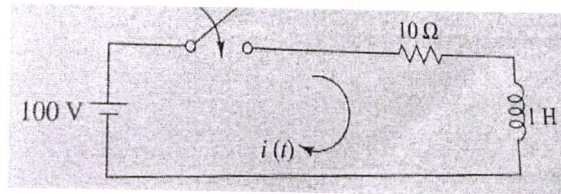
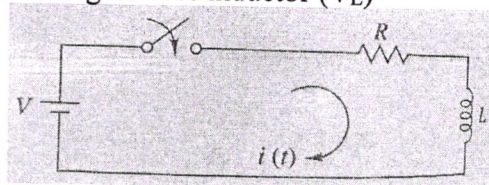


Fig. RL circuit

OR

- 16 In the given circuit as shown in fig. Find the expression for the current  $i(t)$ , voltage across resistor ( $V_R$ ) and voltage across inductor ( $V_L$ ) 10



- 17 Determine Y parameters in terms of Z parameters 10

OR

18 In the given network as shown in Fig. Find Z - parameters

10

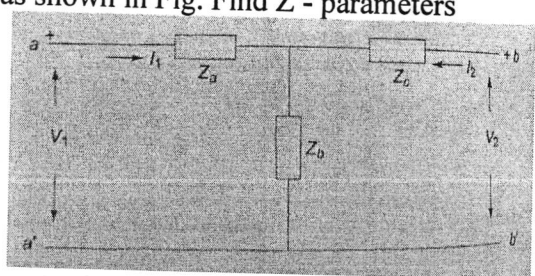


Fig. Network

19 Explain the classification of filters in detail.

10

OR

20 Explain design of m -derived low pass filter.

10