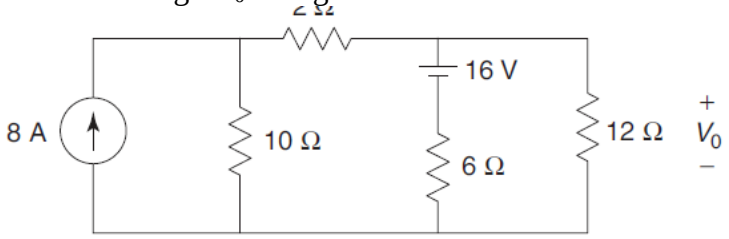
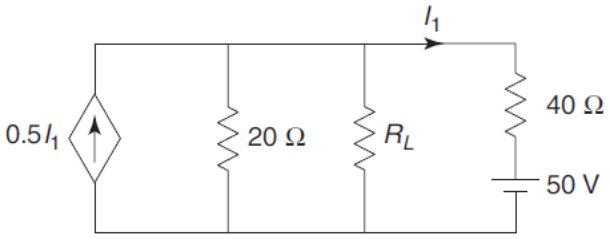
Name:

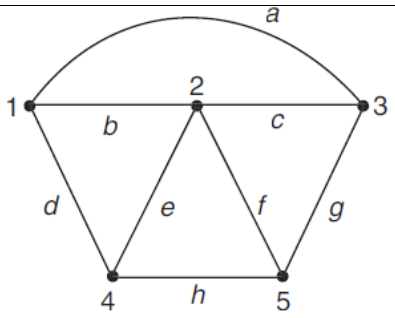
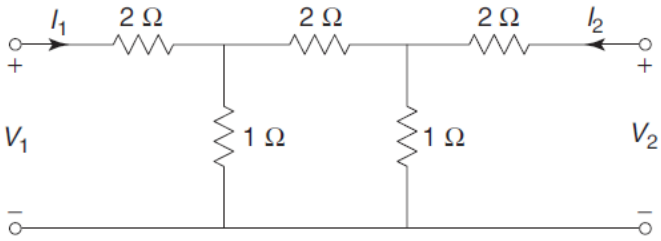
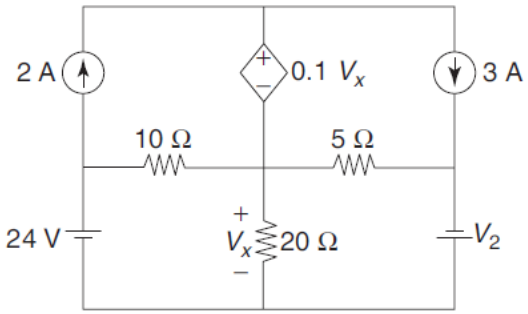
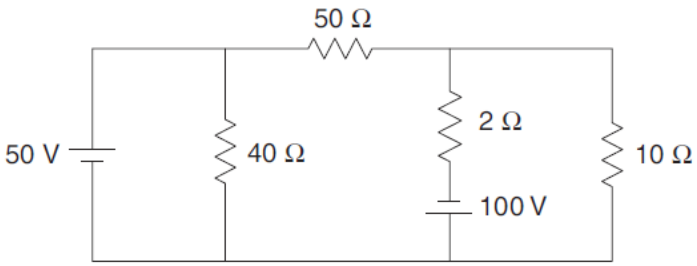
Enrolment No:

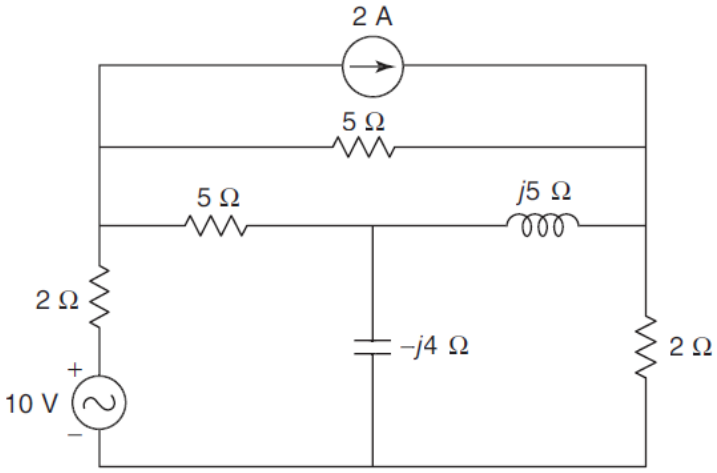
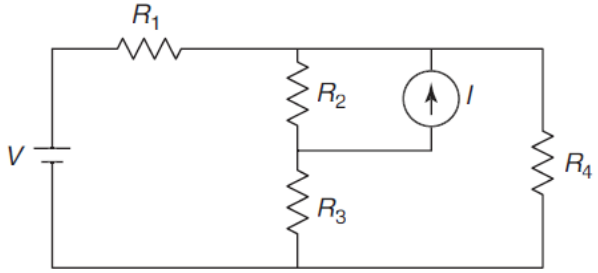
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Network Analysis **Semester: III**
Program: B Tech ECE **Time : 03 hrs.**
Course Code: ECEG 2020 **Max. Marks: 100**

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled then the voltage across each resistor is (a) halved (b) doubled (c) increased by four times (d) not changed	**4**	**CO1**
Q 2	Four resistances 80 ohm, 50 ohm, 25 ohm, and R are connected in parallel. Current through 25 ohm resistor is 4 A. Total current of the supply is 10 A. What will be the value of R ?	**4**	**CO2**
Q 3	What will be the voltage V_0 in Fig. ? 	**4**	**CO1**
Q 4	In the network of Fig., what will be value of RL to deliver the maximum power? 	**4**	**CO1**
Q 5	Identify which of the following is NOT a tree of the graph shown in Fig	**4**	**CO3**

	 (a) begh (b) defg (c) bdeg (d) aegh		
SECTION B (4Qx10M= 40 Marks)			
Q.6	Find Y-parameters of the network shown in Figure. 	**10**	**CO2**
Q.7	In the network shown in Fig., find voltage V_2 such that Vx = 0. 	**10**	**CO1**
Q.8	Find the current through the 10 ohm resistor in the network using Thevenin's theorem. 	**10**	**CO1**
Q.9	Derive a relation to find the z parameters in terms of Y, ABCD parameters.	**10**	**CO2**
SECTION-C (2Qx20M=40 Marks)			

Q. 10	For the network shown in Fig., write down the tieset matrix and obtain the network equilibrium equation in matrix form using KVL.  OR For the network shown in Fig., obtain the loop equation in matrix form.  	**20**	**CO3**
Q. 11	Realise the Foster and Cauer forms of the following impedance function $$Z(s) = \frac{4(s^2+1)(s^2+9)}{s(s^2+4)}$$	**20**	**CO4**