SANT GADGE BABA AMARAVATI UNIVERSITY, AMARAVATI.
SUMMER EXAMINATION-2020
H.V.P.M.'s College of Engineering and Technology, Amravati.
Department of Electronics and Telecommunication
Bachelor of Engineering Semester IV.

Subject : Network Analysis Subject code : 4XT03

Instructions:-

i) Solve any two questions.

ii) ii) All questions carry equal marks.

|			
Que 1	a)	Determine current through 10Ω resistance from the network shown in Figure 1a. using source transformations.	2 credit pts
	b)	Explain following terms i) Tree ii) Co- tree, write down properties Of tree.	2 credit pts
	c)	Verify initial value theorem for the function $f(t) = 50 - 6t + e^{5t}$	2 credit pts
	d)	State & explain maximum power transfer theorem.	2 credit pts
	e)	Find reciprocity& symmetry condition of two port network in terms Of inverse hybrid parameter.	1 credit pts
	f)	Explain necessary condition for driving point and transfer function.	1 credit pts
Que 2	a)	Calculate the value of single equivalent inductance for circuit shown in Figure 2a seen from terminal X, Y	2 credit pts
	b)	Draw the dual of the network shown in figure 2b.	2 credit pts
	c)	State and prove initial and final value theorem.	2 credit pts
	d)	Determine current through 1 Ω resistance using super position theorem From fig.2d.	2 credit pts
	e)	Explain following terms i) Network function ii) driving point , iii) transfer function	1 credit pts
	f)	Explain necessary condition for transfer function.	1 credit pts
Que 3	a)	Draw the dotted equivalent of the circuit shown in fig.3a & find Equivalent impedance.	2 credit pts
	b)	Draw graph of the network shown in fig. 3b. find no. of possible trees and draw all possible trees.	2 credit pts
	c)	Find initial and final value for the function. $f(s) = 2S+5/(S+1) (S+2)$	2 credit pts
	d)	Determine current through 1 Ω resistance using thevenin's theorem From fig.2d	2 credit pts
	e)	Determine the relationship between hybrid parameter in terms of Transmissions parameter.	1 credit pts
	f)	Plot pole zero plot for the function and obtain i(t) $I (S) = 10S / (S+4) (S+6)$	1 credit pts

Que 4

a) Find the value of resistance R if voltage across 4 Ω resistance is 17.6 V

From the fig.4a   2 credit pts

b) Define incidence, tie-set and cut-set matrix

2 credit pts

c) Verify initial value theorem for the function

$f(t) = 5e^{-4t}$ 2 credit pts

d) Determine current through 1 Ω resistance using Nortans theorem

From fig.2d   2 credit pts

e). Find reciprocity& symmetry condition of two port network in terms

Of transmission parameter   1 credit pts

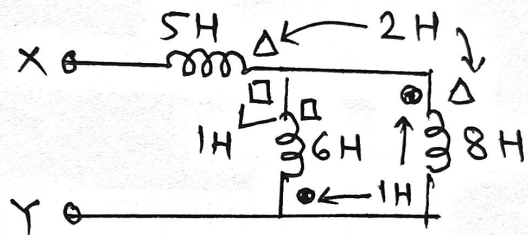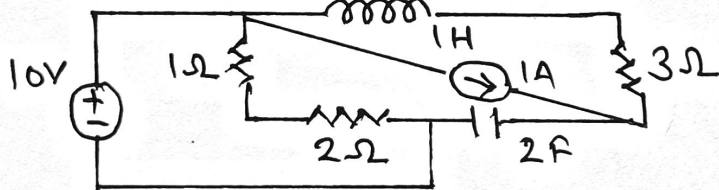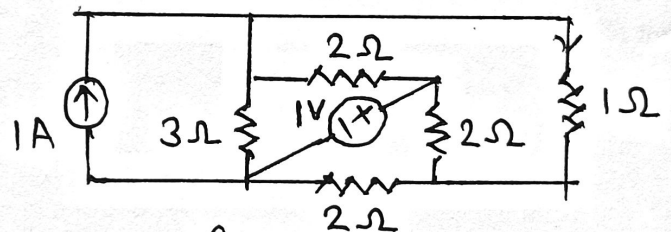f) Explain necessary condition for driving point and transfer function.   1 credit pts
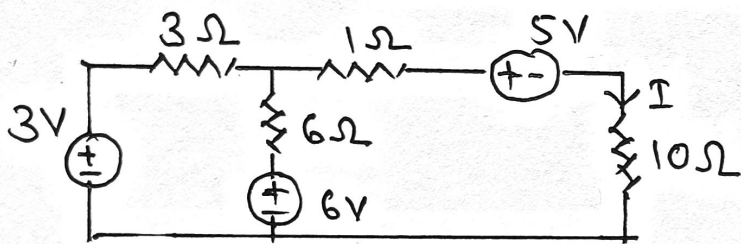
Fig 1a.

Fig 2a.

Fig 2b.

Fig 2d.
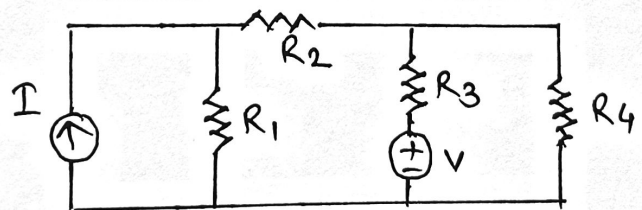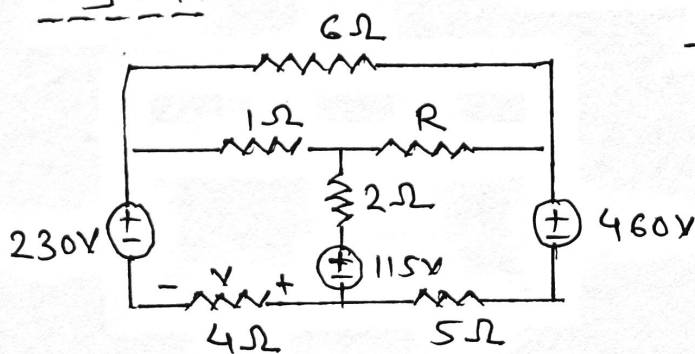

Fig 3a.

Fig 3b.

Fig 4a.