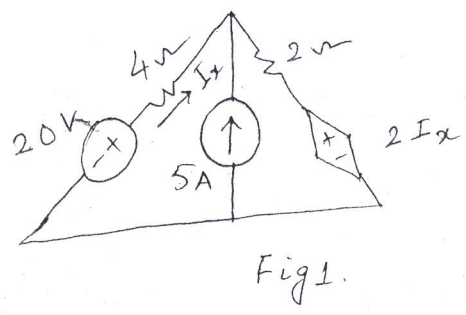




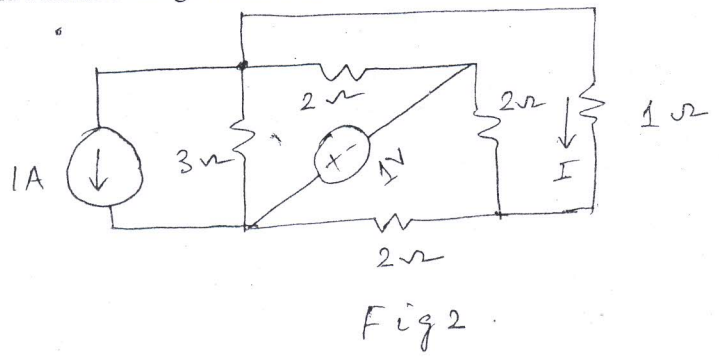
Sub:	Electric Circuit Analysis				Code:	17EE32	
Date:	15/10/2018	Duration:	90 mins	Max Marks:	50	Sem:	3
Answer Any FIVE FULL Questions						Branch:	EEE A

Marks	OBE	
	CO	RBT
[10]	CO3	L4
[10]	CO3	L4
[10]	CO3	L4

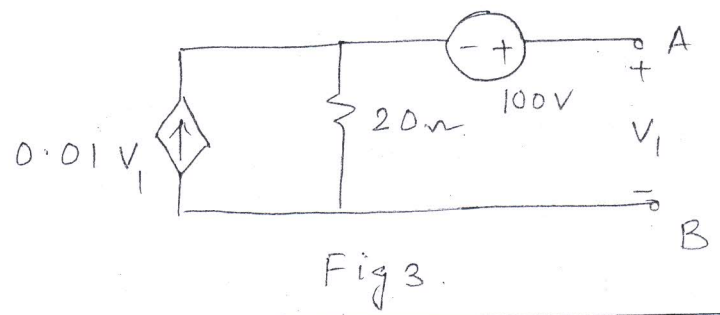
1 Use superposition theorem to find  $I_x$  of the network shown in fig1.



2 Find current  $I$  using Norton's theorem shown in fig2.



3 Find Thevenin's equivalent circuit across the terminal A-B of the network shown in fig3.



*Rohit*  
11/10/18

4 Verify Reciprocity theorem for the circuit shown in fig4.

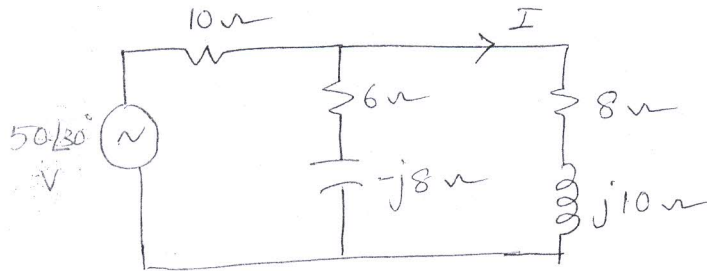


Fig 4.

[10] CO3 L3

5a. Show that resonant frequency is the geometric mean of two half power frequencies of a series resonant circuit.

[4] CO4 L3

5b. A RLC series circuit has  $R=1\Omega$ ,  $L=100\text{mH}$ ,  $C=10\mu\text{F}$ . If a voltage of 100V is applied across the circuit, determine resonant frequency, Q-factor, half power frequencies.

[6] CO2 L3

6. Derive the expression for parallel resonance when RL is parallel to RC. Also show that the circuit will resonate at all frequencies if  $R_L=R_C=\sqrt{L/C}$ .

[10] CO2 L3

Determine  $R_L$  and  $R_C$  that causes the circuit to be resonating at all frequencies shown in fig6.

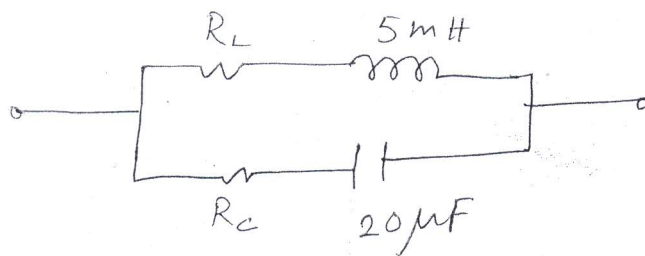


Fig 6.