Total No of Questions: [8]		*SEAT NO. :*	
			[Total No. of Pages : 5]

S.E. 2012 (Electrical Engineering)

NETWORK ANALYSIS

(Semester - II)

Time: 3 Hours *Max. Marks : 50*

Instructions to the candidates:

1) *Answers Qu. 1 or 2 , Qu. 3 or 4, Qu. 5 or 6, Qu 7 or 8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right side indicate full marks.*
4) *Use of Calculator is allowed.*
5) *Assume SuitableS data if necessary*

Q1)	a)	**Simplify the circuit Shown in fig (1) and. Find V**	**(07)**

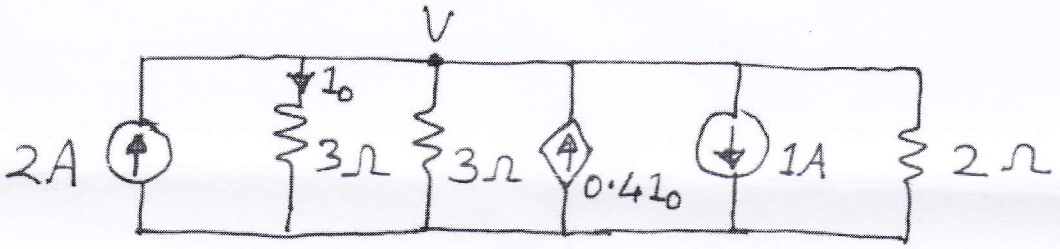


Fig (1)

	b)	**Find current through 10 Ω resistance using mesh analysis as shown in fig (2)**	**(06)**

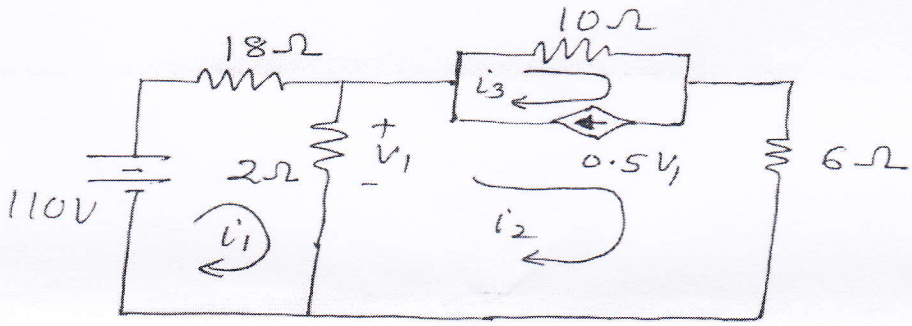
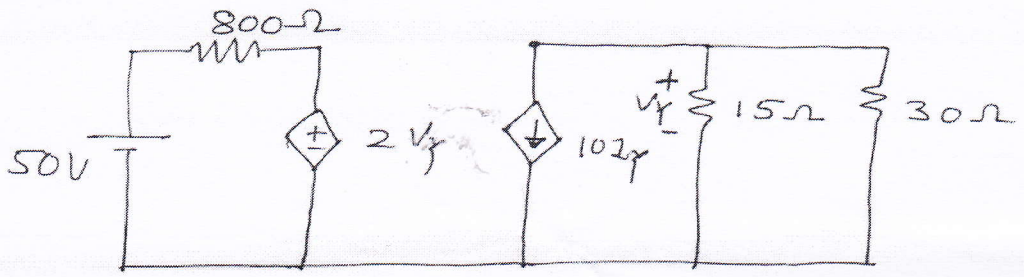
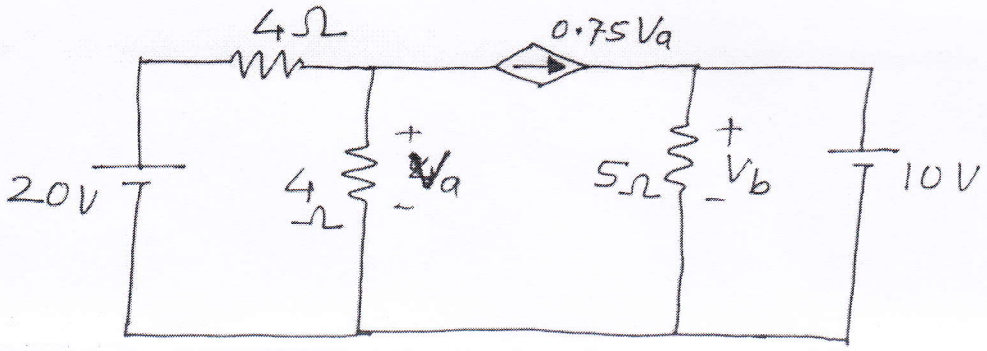
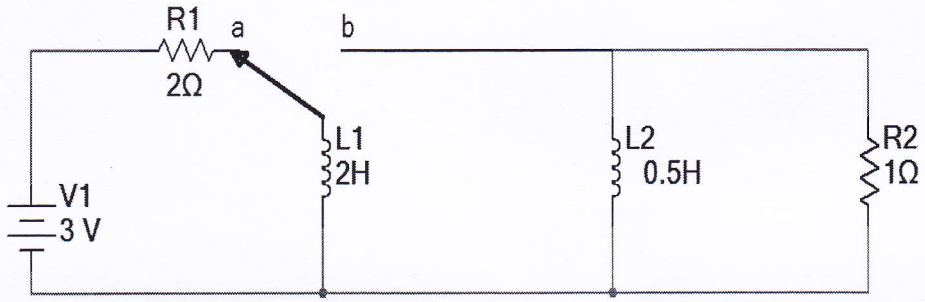
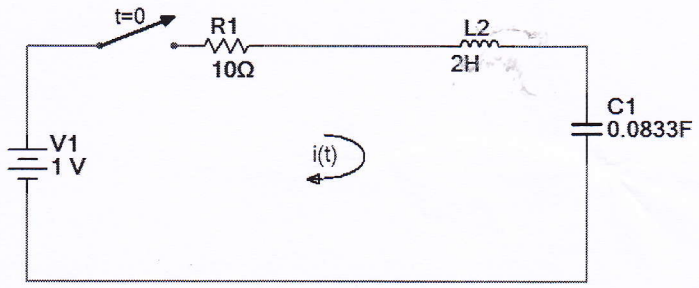
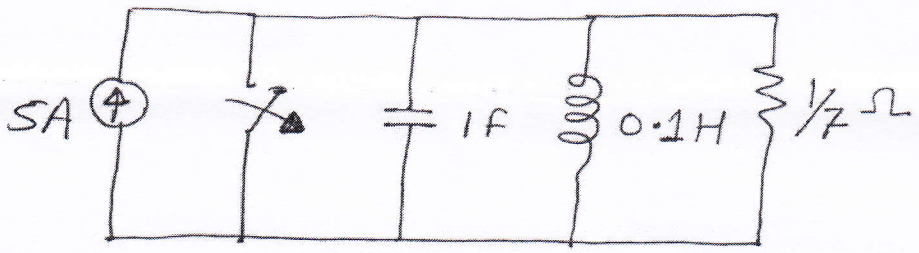
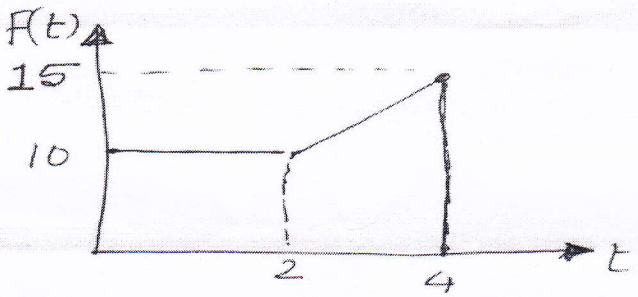
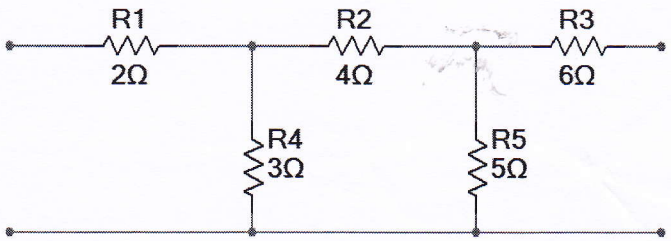
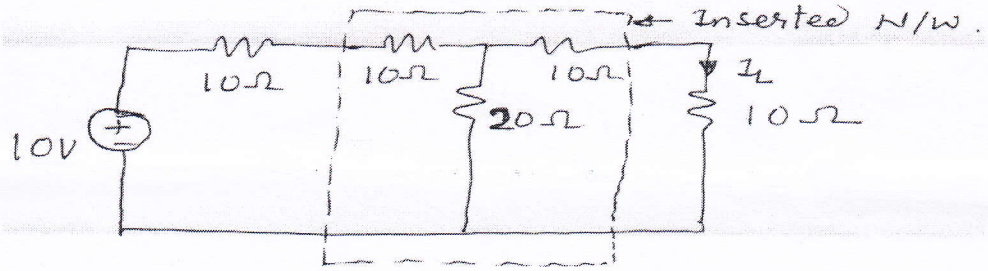
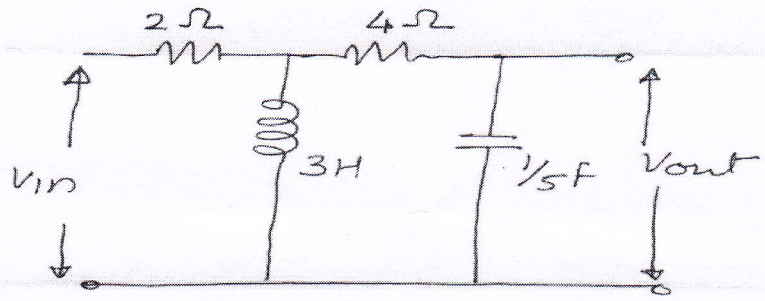


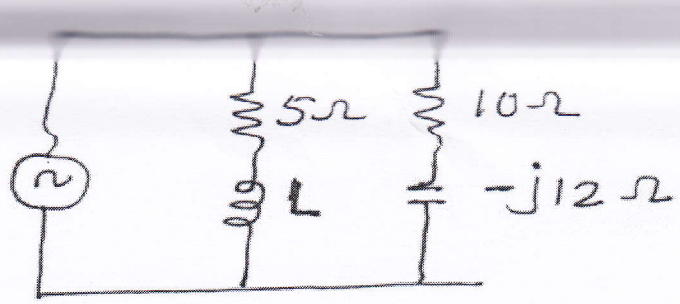
Fig (2)

OR

Q2)	a)	**Find current through 30 Ω resistance by using Thvenins Theorems as shown in fig (3)**  **Fig. (3)**	**(07)**
	b)	**Find V_a and V_b by using Superposition Theorem**  **Fig. (4)**	**(06)**
Q3)	a)	The switch is changed from point a to b at t=0, determine voltage across 1 ohm resistance at t=3 sec.  Fig(5)	(07)

	b)	R-L-C circuit is excited by DC voltage source. Find Current i(t) using conventional method. The switch is closed at timt t = 0 .  Fig (6) OR	(06)
Q4)	a)	A step d.c.current of 5 Amp. Is applied at t = 0 to a parallel R-L-C circuit as shown in fig.(7) . Obtain solution for voltage V(t) across circuit . Assume zero charge across capacitor.  Fig (7)	(07)
	b)	Obtain F(S) for the wave shown in fig. (8)  Fig. (8)	(06)

Q5)	a)	A low pass filter is composed of symmetrical π section .. Series arm is 0.02 H and each shunt arm is 2 micro farad. Find cut off frequency and designed resistance.	(06)
	b)	Find Z & H parameter.of the circuit shown in fig  Fig. (9) OR	(06)
Q6)	a)	In the circuit shown in fig. (10) find insertion loss in decibel in load resistance of 10 ohm  Fig. (10)	(06)
	b)	Develop the relationship between Z parameter & Transmission line parameters	(06)
Q 7)	a)	Draw poles and Zeros of transformation function for the fig. shown in fig. (11)  Fig. (11)	(06)

	b)	Write the notes of location of poles and corresponding transient response OR	
Q)8	a)	Find the value of L at which the parallel circuit resonates at a frequency of 1000 rad./ sec. in the circuit as shown in Fig 12  Fig. 12	(06)
	b)	Write the essential conditions of transfer function	(06)