VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE
[Central Technological Institute, Maharashtra State]
Matunga, Mumbai-400 019

SEMESTER EXAMINATION   *May 2012*   DATE OF EXAM   18/05/2012

SEMESTER & PROGRAM   *IV SemS.Y.B.Tech*   TIME   *1:30 p.m. to4:30 p.m.*

    Electrical

MARKS :   *100*   DURATION   *3 Hrs*

COURSE: *Network Analysis II*

Que	1		
	a)	Calculate Fourier coefficients for the waveform in fig 1.	10
	b)	Draw a simple first order low pass passive filter. Using transfer function show the response of the circuit	10
Que	2		
	a)	Explain cascade connection of two,2 port network and show how to calculate overall paramaters for such connection	05
	b)	Find Y paramaters for the circuit in fig.2 and determine whether it is symmetrical or reciprocal.	10
	c)	Draw Pole zero plot for the following function and comment on stability. Also find the magnitude of the function at s=j2 $$F(S)= \frac{(S+2)(S+3)}{S(S+1)}$$	05
Que	3		
	a)	Find the expression for $i_2(t)$ in fig.3	05
	b)	Find the ratio V_2/V_1 in fig.4.	10
	c)	Calculate Expression for i(t) in fig.5	05
Que	4		
	a)	Determine whether the following functions are PRF or not 1) $F(s)= (S^2+4S+3)/(S^2+6S+8)$ 2) $F(s)= (S^4+2.5S^2+1)/(S^5+4.5S^2+4.5S)$	10
	b)	Derive the condition for symmetry and reciprocity for Y paramaters	10
		OR	
	b)	Explain time domain response from location of poles and zeros	10
Que	5		
	a)	Synthesize the following in foster form I and Foster Form II $$F(S)= \frac{(S^2+0.5)(S^2+1.5))(S^2+3)}{S(S^2+1)(S^2+2)}$$	10
		OR	
	a)	Synthesize the following in Cauer form I and Cauer form II $$Z(S)= \frac{S^3+9S^2+23S+15}{S^4+12S^3+44S^2+48S}$$	10
	b)	Test the following polynomials for Hurwitz 1) $S^5+12S^4+4S^3+44S^2+48S+48$ 2) $2S^4+5S^3+6S^2+3S+1$ 3) S^3+2S^2+S+2	10

PTO

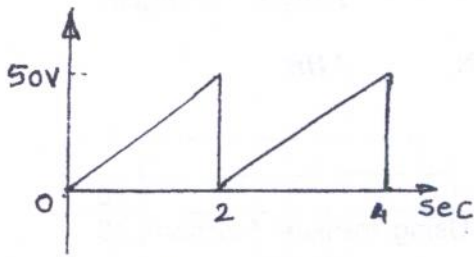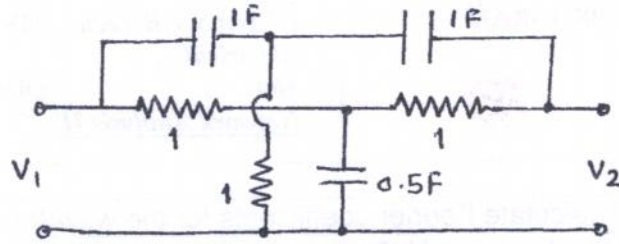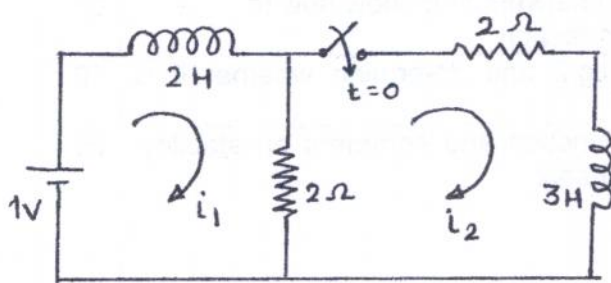# S.Y.B.Tech Electrical Network Analysis II
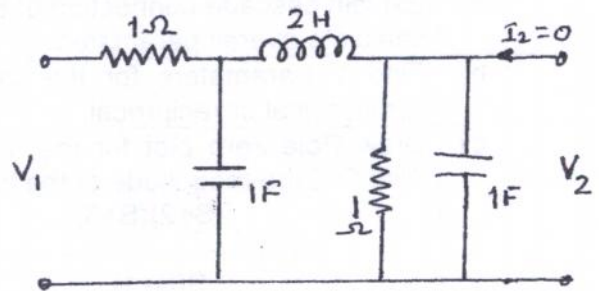

Fig. 1   Que 1a

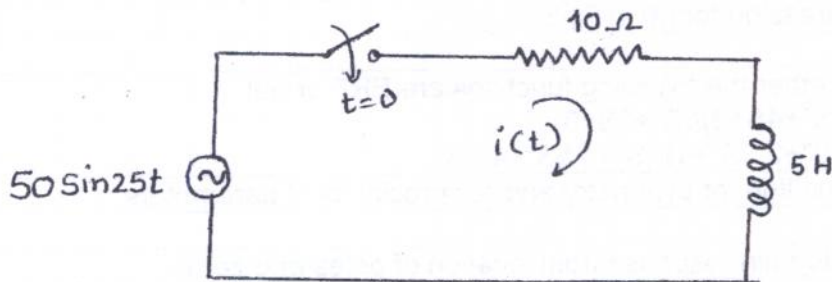Fig. 2   Que 2 b

Fig. 3   Que 3 a

Fig. 4   Que 3 b

Fig. 5   Que . 3C