Reg. No.



III SEMESTER B.TECH (ELECTRICAL & ELECTRONICS ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: ELECTRICAL CIRCUIT ANALYSIS [ELE 2101]

REVISED CREDIT SYSTEM

Time:	3 Hours	Date:	23 November 2016	MAX. MARK	(S: 50
Instructions to Candidates:					
	 Answer ALL the questions Missing data may be suital 	olv assun	ned.		
1A.	Determine the current thro theorem.	ugh 5Ω 1	resistor in the circuit shown in Fig.1A u	ising Norton's	05
1B.	Determine the value of Z_L for Determine the maximum po	or maxin wer.	num power transfer in the network sho	wn in Fig. 1B.	05
2A.	For the locus diagram show of maximum current in the c	n in Fig. circuit.	2A, draw the circuit configuration. Also	find the value	05
2B.	Draw the odd and even com	ponents	of waveform shown in Fig. 2B		03
2C.	Sketch the waveform given l	зу			
	f(t) = r(t+1) - r(t) + u(t-2) Also, sketch its first derivati	1) – 2r(t- ve	1) + 2r(t-3) + 2u(t - 3)		02
3A.	In the network of Fig. 3A, sw	vitch is cl	osed at t = 0. Find $i_1, i_2, \frac{di_1}{dt}$ and $\frac{di_2}{dt}$ at t	= 0+.	03
3B.	A series RL circuit with R = Find the current response of	5Ω and f the circ	L = 2H is excited by a voltage e(t) = 3u(uit using time domain analysis.	t) + 5δ(t – 2).	03
3C.	A series RLC circuit with R t = 0. Find the current respo	= 6Ω, L = nse for t	= 2H and C = 0.5F is excited by a voltag > 0 using time domain analysis.	;e 4e- ^{3t} volt at	04
4A.	Find the response V(t) for t transform approach.	>0 for th	the circuit of Fig. 4A when $V_S = 6e^{-3t} u(t)^{-3t}$	/. Use Laplace	06
4B.	The transform of voltage re	sponse i	n a circuit is given by		
	$V(s) = \frac{5(S^2 + 9)}{(S+3)(S^2 + 2S + 5)}$)			
	Determine V(t) using pole -:	, zero diag	gram.		04
5A.	Determine the laplace trans	form of t	he waveform shown in Fig. 5A		02
5B.	Two sets of measurements measurements is made with port 2 short circuited. The r	s are ma 1 port 2 c results ar	ade on a two port resistive circuit. The pen and the second set of measurementer given below.	ne first set of t is made with	
	Port 2 Open : $V_1 = 10mV$ Port 2 Short Circuited : V_1 Find the h- parameters of th	l ₁ = 10μA = 24 mV e circuit.	$V_2 = -40V$ $I_1 = 20\mu A$ $I_2 = 1mA$		04
5C.	Determine Y parameters of	the netwo	ork shown in Fig. 5C		04









Fig. 2A



Fig. 2B







Fig. 5A