DATA TABLES

TRANSIENT RESPONSE DATA

Steps 1 to 3 :

(a) Values used for the series-RC circuit :

Nominal Value* of R = ...Ohms

Nominal Value of C = 0.1 μF

'Theoretical' Time Constant τ = RC = ……

*Neatly draw the circuit of the R –network which you used , to obtain the R value, in the space below.

(b) Values used for the series-RL circuit :

Nominal Value* of R = ...Ohms

Nominal Value of L = 0.02 H

'Theoretical' Time Constant τ = L/R = ……

* Neatly draw the circuit of the R –network which you used , to obtain the R value, in the space below.

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Step 4 : Values used for the series-RLC circuit :

(c)

$$R_c(\text{nominal}) = 2\sqrt{0.02/0.1\mu} = 894.43\ \Omega$$

Value of R used for 'OD' response, R_{od} = ...Ohms

Value of R used for 'CD' response, R_{cd} = ...Ohms

Value of R used for 'UD' response, R_{ud} = ...Ohms

TA Signature : ……

[Make sure to also obtain your TA's signature on the various time- and frequency- response printouts]

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FREQUENCY RESPONSE DATA

Step 5 : Tables for Frequency Response Data (RC & RLC circuits)
Use a V_s magnitude in the 1 to 3 Volts RMS range

Series RC circuit
Attempt to keep Vs at a constant magnitude

f kHz	**ω** Radians/sec	Input V_s Volts RMS	Output V_c Volts RMS	M(db)= 20 log(V_c/V_s)
0.1	628.3			
10				

Series RLC circuit
Attempt to keep Vs at a constant magnitude

f kHz	**ω** Radians/sec	Input V_s Volts RMS	Output V_R Volts RMS	M(db)= 20 log(V_c/V_s)
0.1	628.3			
10				

TA Signature : ……

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DATA FOR Series-RLC RESONANT CIRCUIT, (Step 7)

[First locate the frequency at which V_c is a maximum and then 'descend' on both sides of the peak frequency. This will ensure proper plotting of the 'bandpass' curve]

Use a V_s magnitude in the 1 to 3 Volts RMS range

Attempt to maintain V_s at a constant level

f kHz	Input V_s Volts RMS	Output V_R Volts RMS	M(db)= $20 \log \frac{V_c}{V_s}$
1			
1.5			
2			
2.5			
3			
4			
4.5			
5			
5.5			
6			

First locate the frequency at which V_c reaches a maximum and enter the value here

TA Signature : ……

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