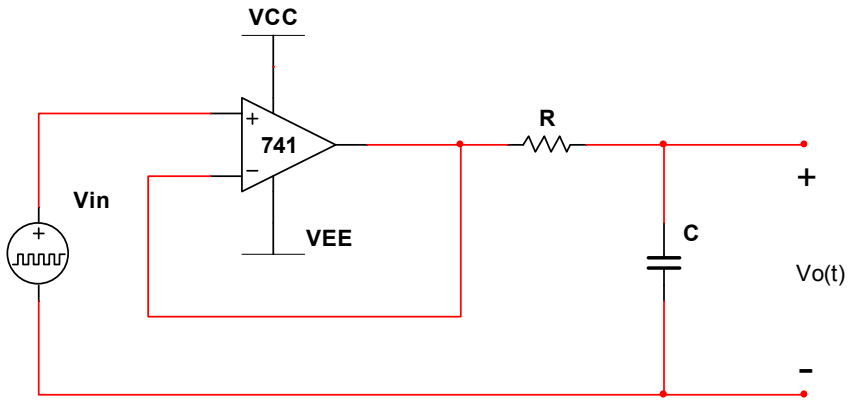
FLORIDA INTERNATIONAL UNIVERSITY
COLLEGE OF ENGINEERING AND COMPUTING
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

EEL 3110L-CIRCUITS LAB

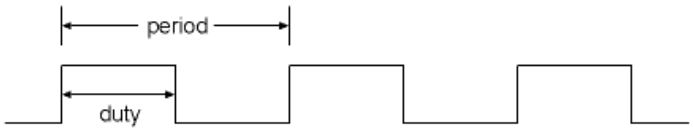
SEVENTH ACTIVITY: Transient Response of R-C circuit and Intro to Transformer

Please do the computer simulations before or after the lab (it's recommended that you do them before).

1- Set up the following circuit.



$v_{in}(t)$: $Square\ Wave$ with Duty Cycle = 0.5 where Duty Cycle = $\frac{duty}{period}$



Set frequency for the following conditions knowing that $f = \frac{1}{T}$ and $\tau = RC$

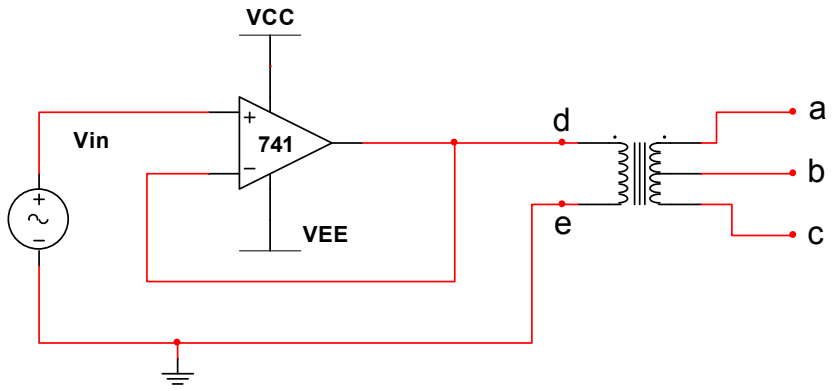
a) $T = \tau$
b) $T = 100\tau$
c) $T = \frac{1}{100}\tau$
d) $T = \frac{1}{2}\tau$
e) $T = 2\tau$

Graph $v_o(t)$ for each conditions above

Briefly explain and comment your results

2- Introduction to Transformer

a) Set up the following circuit



vin(t)= Vm sin (ωt), Vm ≥ 15v, where ω = 377 rad/s

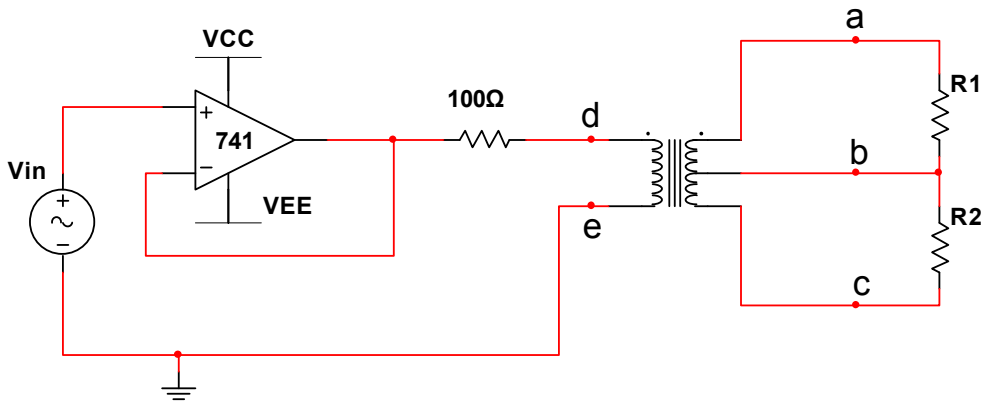
Measure the amplitude of the V_{de}, V_{ab}, V_{bc}, V_{ac}, calculate their RMS values.

Also, find the turn ratio of:

i. (d-e) : (a-b)
ii. (d-e) : (b-c)
iii. (d-e) : (a-c)

Briefly explain and comment your results

b) Set up the following circuit



$470\Omega \leq R_1 = R_2 \leq 2.2k\Omega$

Repeat the measurements above

Briefly explain and comment your results

Write a brief summary of today activities. Remember to keep your records and own comments in your lab notebook.