# Lab Assignment 9

Given the following problems:

(i) Let $R$ = 2 kΩ, $L$ = 0.1 H, $C$ = .1 μF, find

$v_C(t)$ for a series $RLC$ circuit with $v_C(0^-)$=0, $i_C(0^-)$ = 0 and voltage source $V_s(0^+) = u(t)$

Then repeat the problem with $C$ changed to 1 μF and 10 nF, respectively.

(ii) Repeat problem (i) with source changed to triangular pulse of height 1 and width 4 ms.

(iii) Let $R$ = 0.8 kΩ, $L$ = 0.1 H, $C$ = .1 μF, find

$i_L(t)$ for a parallel $RLC$ circuit with $v_L(0^-)$=0, $i_L(0^-)$ = 0 and current source $I_s(0^+) = u(t)$.

Then repeat the problem with $C$ changed to 1 μF and 10 nF, respectively.

(iv) Repeat problem (iii) with source changed to triangular pulse of height 1 and width 4 ms.

Write codes using the following methods to solve them:

(i) Euler (ii) RK2