

***Physics Department***

***Physics 112***

***Name : Mohammed Nawahda Number:1080817***

**Preliminary Laboratory Questions sheet**

**Experiment 5: Capacitors and Inductors .**

Q1: We can calculate and measure in both RC and RL circuits time constants ***τ*** but we do not do that for the LC circuit. Explain Why?

In reality it is never possible to construct a pure LC circuit . Various sources of resistance cause a continuous loss of power as heat ; consequently , the simple harmonic will sooner or later decay . Moreover, it hasn’t a charging and discharging cases .

Q2: Calculate ***τ*** for RC circuit if R = 1kΩ and C = 0.1 μF?

Q3: Calculate ***τ*** for RL circuit if R = 1kΩ and L = 10 mH?

Q4: What do we mean by natural frequency of an object like a bridge or a tuning fork?

When the system is driven at the natural frequency, it is said to be in resonance.

Q5: Calculate the frequency of oscillation an LC circuit with L = 10 mH and C = 0.1 μF ?

Q6: What will happen when the driving frequency in LC circuit equals its natural frequency? Explain in detail.

The system will reach its maximum amplitude when the driving frequency [omega] of the applied emf is equal to

http://teacher.nsrl.rochester.edu/phy122/LectureNotes/Chapter34/Chapter3470.gif

This frequency is the natural frequency of the LC circuit.