

## Lecture 11.

**Lecture objectives.**

- To appreciate the idea of resonance in a series LCR circuit and the resonant frequency.
- To understand and use the expression for power transferred to a series LCR circuit.
- To be familiar with ideas of RMS current and voltage.
- To apply ideas of Q-factor to the power resonance.

**Post-lecture tasks.**

1. Try to find the analogies between the forced mechanical and the a.c. electric systems. What is mechanically equivalent to driving voltage and to current?
2. Compare the expressions for impedance (i.e in a mechanical system and a series LCR system). You must be able to formally derive the expression for electrical impedance.
3. Finally, compare the expressions for power and Q-factor.
4. For exam preparation, look at past-paper questions. You should be able to attempt all “oscillations” (i.e. SHM and AC electrical) questions from the last five years.
5. Attend the revision lecture t.b.a. before the final exams.

GOOD LUCK!