Questions :-

1. Explain why the load wolfage in RLC circuit is maximum at resonance condition.

Ans. Since the RLC circuit is driven by a variable frequency, and $Z = R + \int_{1}^{1} X_{L} - \int_{1}^{1} X_{C}$, at resonance condition, $\int_{1}^{1} X_{L} = \int_{1}^{1} X_{L}$ resulting (Z = R) the circuit to be purely resistive. As the impedence Z, the entire source voltage acts across Z. Thus the Lad load voltage is maximum at resonance condition.

2. If a 5mH inductor was used instead of 560 MH one, what capacitance value would be required to keep the senant frequency (fo) the same as the value abtained from the experiment.

$$\Rightarrow C = \frac{1 \times 5 \times 10^{-3}}{\sqrt{21268 \times 27}}$$

$$= 1.37 \times 10^{-5} F$$

$$= 0.13.7 \mu F$$

o. It possible to have a resonance condition in a parallel einewit RLC cincuit? If so, breiefly discuss a possible experimental set up which could be used to investigate resonance in a parallel RLC cincuit.

Amos II is possible to have a resonance condition in a paralled RLC cincuit where energy will constantly be transferred back and forth bodium the indicator and the capaciton resulting in zero current and energy being absorbed from the supply. The exposiment setup should be similar to the series RLC component wise except the resiston, inductor and capaciton should be connected in parallel respectively to frequency generator. Change the frequence until maximum peak twoltage is obtained. That will be the resonant frequency for the parallel RLC cincuit.

6. Do the practical value of af the resonant frequency borndwidth and quality theton obtained from comfirm with the theoretical values. If any percentage is difference are above 10% suggest 3 possible reasons for the eliscrepancy.

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	3. How would the resonant frequency of the cincuit
	3. How would the susmant frequency of the circuit girun in figure 3.11 change if the 1002 resister was suplaced with a 50.2 one? explain.
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	resister was suplaced with a SOIL one ! explain.
	Ans: No change will occur on the resonant frequency. Since
	resonant frequency depends wholly on the capacitance
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	and inductarice of the encert, 10= == 1 any change
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	and inductance of the encent, $\int_{-2\pi\sqrt{LC}}^{2\pi\sqrt{LC}}$, any change in the value of the xesiston will not $2\pi\sqrt{LC}$ affect the value of the Resonant frequency. It will only affect the peak of the resonance as the convert with
	in the appliescence as 1/= TR
	in the astelloscope as V= IR.
	I use your experimental smult and the graph abbrined from the simulations to explain the concept of high and low Quality factors in series RLC circles.
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	whigh and low swally factors in souls FLC chelles.
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	Ans: Quality factore is the ratio of resonant frequency to bandwidth.
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