LMS QUESTIONS

1. A sinusoidal voltage is applied to a series RLC circuit with , and . Find:

i. The quality of factor Q of the circuit

ii. The resonant frequency

iii. The amplitude of current at resonance

iv. The amplitude of the voltage across the inductor at the resonant frequency.]

When the RLC circuit is set to resonance, the resonant frequency is

Also at resonance, current is maximum

The quality factor is, = 15.8

At resonance, the amplitude of the voltage across the inductor is

2. Find the work done in (eV) by an agent in taking a charge q\_o = 20{}

3. What is the best way to demagnetize a magnet: It is to slowly pull it out of a solenoid carrying alternating current.

4. A 120V power line is protected by a 15A fuse. What is the maximum number of 120V, 500W light bulbs that can be operated at full brightness from this line.

The maximum power output is

P = VI

P = 120V times 15A

P = 1800W

SOLUTIONS