

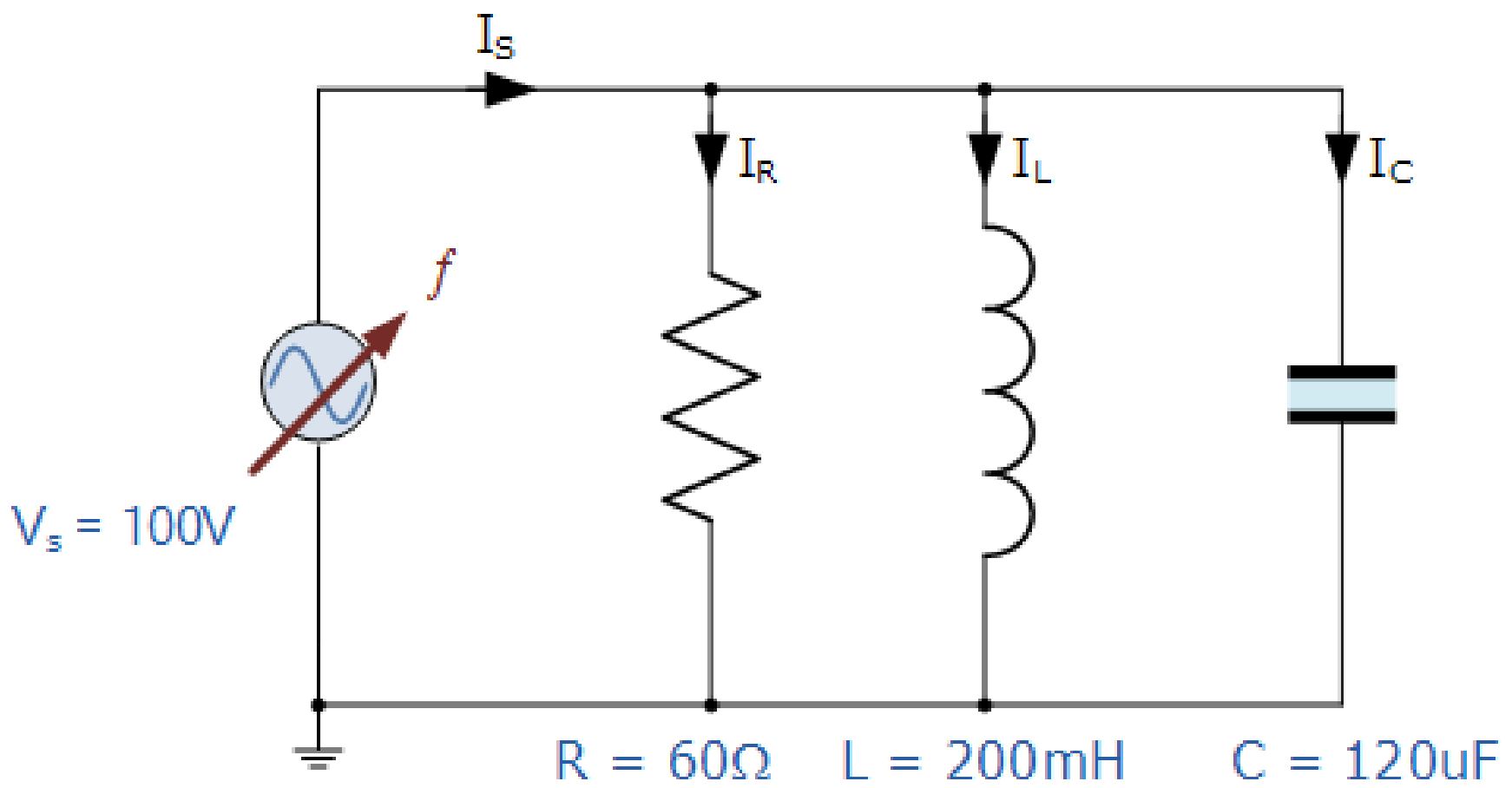
Chapter:7

(Understand the concepts of Polyphase Power System)

Lecture-1

Definition of Poly phase System:

- Polyphase System
- Polyphase System is a combination of two or more than two voltages having same magnitude and frequency but displaced from each other by an equal electrical angle. As poly means, many (more than one) and phase means windings or circuits. Each of them has a single alternating voltage of the same magnitude and frequency.



- However, the above equation does not hold good for the two-phase system where the voltages are displaced by an angle of 90 degrees electrical.
- Thus, in other words, a polyphase system can be defined as an AC system having a group of (two or more than two) equal voltages of same frequency arranged to have an equal phase difference between the adjacent EMFs.
- Single-phase systems are employed for the operation of almost all the domestic and commercial applications.

$$\text{Phase Difference} = \frac{360 \text{ electrical degrees}}{\text{Number of phases}}$$

- Q-factor for a parallel resonance circuit:
- Note that the Q-factor of a parallel resonance circuit is the inverse of the expression for the Q-factor of the series circuit. Also in series resonance circuits the Q-factor gives the voltage magnification of the circuit, whereas in a parallel circuit it gives the current magnification.

