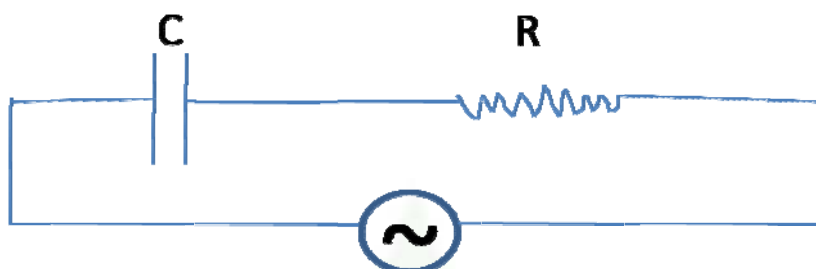




CR Circuit

C-R circuit:



The impedance of the circuit

$$z = \sqrt{R^2 + X_c^2} = \sqrt{R^2 + \frac{1}{(\omega c)^2}}$$

$$\text{Admittance } A = \frac{1}{z}$$

The potential difference across the site lags the current or the current leads the emf by an angle ϕ where

$$\tan \phi = \frac{X_c}{R} = \frac{1/\omega c}{R} = \frac{1}{\omega c R}$$