

A series AC circuit has a resistance of 4Ω and a reactance of 3Ω . The impedance of the circuit is

5Ω

7Ω

$12/7 \Omega$

$7/12 \Omega$

In the given AC circuit

$$X_R = 4 \Omega, \quad |X_C - X_L| = 3 \Omega$$

$$\begin{aligned} \therefore Z &= \sqrt{X_R^2 + (X_C - X_L)^2} \\ &= \sqrt{(4)^2 + (3)^2} \\ &= \sqrt{25} \end{aligned}$$

$$\Rightarrow \boxed{Z = 5 \Omega}$$