

Match List - I with List - II (JEE MAIN 2021)

	List - I		List - II
(a)	$\omega L > \frac{1}{\omega C}$	(i)	Current is in phase with emf
(b)	$\omega L = \frac{1}{\omega C}$	(ii)	Current lags behind the applied emf
(c)	$\omega L < \frac{1}{\omega C}$	(iii)	Maximum current occurs
(d)	Resonant frequency	(iv)	Current leads the emf

Choose the correct answer from the options given below

A a(ii), b(i), c(iv), d(iii)

B a(ii), b(i), c(iii), d(iv)

C a(iii), b(i), c(iv), d(ii)

D a(iv), b(iii), c(ii), d(i)

$$1. (a) \quad \omega L > \frac{1}{\omega C} \Rightarrow X_L > X_C$$

\Rightarrow An inductive circuit

\Rightarrow Current lags the applied emf.

$$(b) \quad \omega L = \frac{1}{\omega C} \Rightarrow X_L = X_C$$

\Rightarrow Current is in phase with emf

$$(c) \quad \omega L < \frac{1}{\omega C} \Rightarrow X_L < X_C$$

\Rightarrow A capacitive circuit

\Rightarrow Current leads the emf

(d) ~~Resonant~~ Resonant frequency:-

We know that current is maximum at resonant frequency.