EE23BTECH11047 - Deepakreddy P

3   A 44 mH inductor is connected to 220 V, 50 Hz ac supply. Determine the rms value of the current in the circuit.
Solution:

TABLE I
INPUT PARAMETERS

Symbol	Description	value
L	Inductor	44mH
V	Voltage	220V
f	Frequency	50Hz

TABLE II
FORMULAE AND OUTPUT

Symbol	Description	Formulae	Value
X_L	Inductive Reactance	$2\,\pi f L$	13.816
ω	Angular Frequency	$2\pi f$	314 rad/sec
I_{rms}	Rms current	$\frac{V}{X_L}$	15.92A