Started on	Wednesday, 16 November 2016, 11:18 AM
State	Finished
Completed on	Wednesday, 16 November 2016, 11:39 AM
Time taken	20 mins 19 secs
Grade	**100.00** out of 100.00

Question 1

Correct

Mark 100.00 out of 100.00

Quiz 9e

A circuit has the following measured voltage and current at the input terminals.

$v(t) = 12 \cos(250\,t + 15°)$ V

$i(t) = 15 \sin(250\,t - 15°)$ A

a) What is the frequency ω (Omega) in radians of the time varying input?

ω = 250 ✓ rad/sec

b) What is the frequency f in Hertz of the time varying input?

f = 39.79 ✓ Hz

c) What is the period T in ms (milli sec) of the time varying input?

T = 25.13 ✓ ms (milli sec)

d) What is the phase angle Φ_V in radians of the terminal voltage in the cosine convention?

Φ_V = .262 ✓ rad (positive radian angle)

e) What is the phase angle Φ_I in radians of the terminal current in the cosine convention?

Φ_I = -1.83 ✓ rad (negative radian angle)

f) What is the rms voltage value of the terminal voltage?

v_{rms} = 8.49 ✓ V_{rms}

g) What is the rms current value of the terminal current?

i_{rms} = 10.61 ✓ A_{rms}

Numeric Answer

a) w (Omega) = 250 rad/sec

b) f = 39.7887 Hz

c) T = 25.1328 ms (milli sec)

d) Voltage phase angle in radians = 0.2618 rad

e) Current phase angle in radians = -1.8326 rad

f) v(t) in rms = 8.4853 V_{rms}

g) i(t) in rms = 10.6066 A_{rms}

Correct

Marks for this submission: 100.00/100.00.