Unit 2 MCQ Solutions

ECE-131

MCQ

A sinusoidal voltage is expressed as $v = 20\sin(314.16t + \pi/3)$ V. Its frequency and phase angle respectively are

A. 314.16 Hz, 60 deg
B. 60 Hz, 1.04 deg
C. 50 Hz, 60 deg
D. 314.16 Hz, -60 deg

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The rms value of an ac sinusoidal current is 10 A. Its peak value is

A. 7.07 A
B. 14.14 A
C. 10 A
D. 28.2 A

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If A = $10\angle 45°$ and B= 5 $\angle 15°$, then the value of A/B will be

A. $50\angle 60°$
B. $2\angle 60°$
C. $2\angle -30°$
D. $\mathbf{2\angle 30°}$

MCQ

In an ac circuit, reactive power and apparent power are equal in magnitude. Then the power factor of the circuit is

A. 1
B. 0.5
C. 0
D. -1

MCQ

The power consumed by pure inductance connected to an ac source is

A. zero

B. Very low

C. Very high

D. infinite

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In a purely capacitive circuit,

A. **Voltage lags the current by 90 deg**
B. Voltage leads the current by 90 deg
C. Voltage and current are in phase
D. None of the above

MCQ

In a 10 Ohm resistance is connected to an ac supply v = 100 sin(314t + 37°) V, the power dissipated by the resistance is

A. 10000 W
B. 1000 W
C. 500 W
D. 250 W

MCQ

In a series RL circuit, the phase difference between the applied voltage and the current increase if

A. **XL is increased**
B. XL is decreased
C. R is increased
D. Supply frequency is decreased

MCQ

The impedance of an circuit is given as $15.5 \angle -30°$ Ohm. It means that the circuit is

A. Capacitive

B. Inductive

C. Purely resistive

D. None of the above

MCQ

The resistance and the reactance in a series RC circuit are 7.5 Ohm. In this circuit

A. The voltage leads the current by 45°
B. The current leads the voltage by 45°
C. The voltage leads the current by 60°
D. The current leads the voltage by 15°

MCQ

The impedance of an RC circuit is 20 Ohm at a frequency of 50 Hz. At frequency of 60 Hz, its impedance will be

A. Greater than 20 Ohm
B. Remain same and equal to 20 Ohm
C. Less than 20 Ohm
D. Can’t Say

MCQ

The maximum and minimum value of power factor in an ac circuit can be

A. 1 and 0

B. +1 and -1

C. +infinity and 0

D. None of the above

MCQ

A series RLC ckt has unity pf if operated at frequency of

A. 1/LC Hz
B. 1/ πLC Hz
C. 1/ 2 π LC Hz
D. **1/ 2 π sqrt(LC)** Hz

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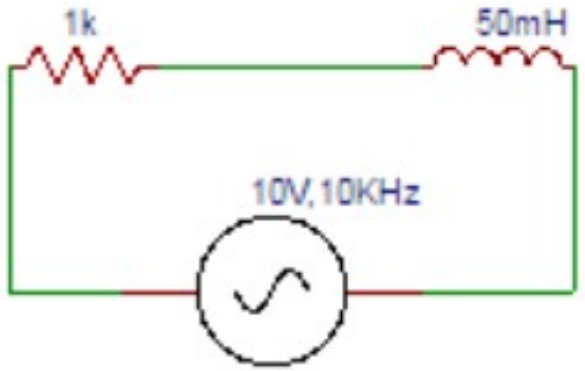
The circuit shown below consists of a 1kΩ resistor connected in series with a 50mH coil, a 10V rms, 10 KHz signal is applied. Find impedance Z in rectangular form.

a) (1000+j0.05) Ω

b) (100+j0.5) Ω

c) **(1000+j3140) Ω**

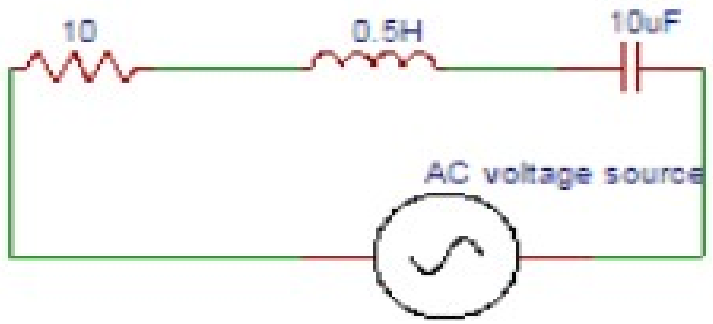
d) (100+j3140) Ω



MCQ

In the circuit shown below determine the total impedance.

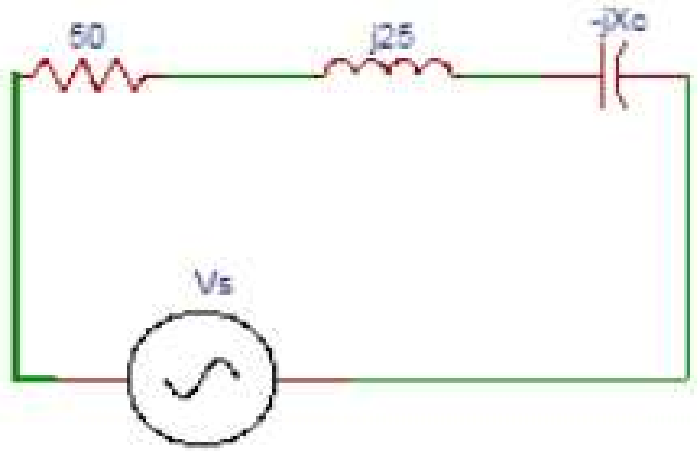
a) 161
b) **162**
c) 163
d) 164



MCQ

For the circuit shown in figure determine the capacitive reactance at resonance.

a) 15
b) 20
c**) 25**
d) 30



MCQ

In a delta-connected load, the relation between line voltage and the phase voltage is?

a) line voltage > phase voltage
b) line voltage < phase voltage
c) l**ine voltage = phase voltage**
d) line current = phase current