Assignment 10

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) Inductive reactance of a coil is expressed in

(a) Weber
(b) Volt
(c) Ohm
(d) Ampere

No, the answer is incorrect.
Score: 0
Accepted Answers:
(c)

2) AC measuring instrument measures:

(a) Peak value
(b) Mean value
(c) Instantaneous value
(d) RMS value

No, the answer is incorrect.
Score: 0
Accepted Answers:
The sharpness of resonance of a circuit is described by its
(a) Power factor
(b) Form factor
(c) Quality factor
(d) None of those

No, the answer is incorrect.
Score: 0
Accepted Answers: (c)

4) The power factor in a LCR circuit at resonance is
(a) 1
(b) 0.5
(c) 1.5
(d) 0

No, the answer is incorrect.
Score: 0
Accepted Answers: (a)

5) A voltage $v = V_0 \cos \omega t$ is applied in series with an inductance $L$ and a resistance $R$. The average power dissipated per cycle in the circuit is
(a) $V_0^2 / R$
(b) $V_0^2 / 2R$
(c) $V_0^2 / (R + L)$
(d) $V_0^2 / [2(R^2 + L^2\omega^2)]$

No, the answer is incorrect.
Score: 0
Accepted Answers: (d)
In an A.C. circuit V and I are given by
\[ V = 100 \sin (1000t) \text{ volt} \]
\[ I = 1000 \sin (1000t + \pi/3) \text{ mA} \]
The power dissipated in the circuit is

(a) 10^4 W
(b) 25 W
(c) 10 W
(d) 250 W

No, the answer is incorrect.
Score: 0
Accepted Answers:
(b)

7) An inductor is connected in series with a resistor. When a 15V, 50 Hz alternating voltage is connected across this series combination, the voltage drop across the inductor is 5V. The voltage drop across the resistor will be

(a) 15V
(b) 20V
(c) 10V
(d) 10V2 V

No, the answer is incorrect.
Score: 0
Accepted Answers:
(d)

8) When a d.c. voltage of 200 V is applied to a coil of self inductance 2\sqrt{3}/\pi H, a current of flows through it. But by replacing d.c. source with a.c. source of 200 V, the current in the coil reduced to 0.5 V. Then the frequency of a.c. supply is

(a) 100 Hz
(b) 75 Hz
(c) 60 Hz
(d) 50 Hz

No, the answer is incorrect.
In an LR circuit, the value of $L$ is $(0.4/\pi)$ henry and the value of $R$ is $30 \ \Omega$. If in the circuit, an alternating emf of $200 \ \text{V}$ at 50 cycles per second is connected, the impedance of the circuit the current will be

(a) $11.4 \ \Omega$, $17.5 \ \text{A}$

(b) $30.7 \ \Omega$, $6.5 \ \text{A}$

(c) $40.4 \ \Omega$, $5 \ \text{A}$

(d) $50 \ \Omega$, $4 \ \text{A}$

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In an LR circuit of $3 \ \text{mH}$ inductance and $4 \ \Omega$ resistance, $\text{emf} \ E = 4 \cos(1000t)$ is applied. The amplitude of current is

(a) $0.8 \ \text{A}$

(b) $4/7 \ \text{A}$

(c) $1.0 \ \text{A}$

(d) $4/\sqrt{7} \ \text{A}$

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11)
A resistance of a Ballistic Galvanometer is 125 ohm. A steady potential difference of 0.0001\text{ V} gives a deflection of 16 cm. The system was undamped and the period was 10 sec. With the capacitor was discharged through the galvanometer, the throw was 5.0 cm. Find the quantity of charge discharged. ($\pi = 3.14$)

(a) 0.15 micro-coulomb
(b) 1.19 micro-coulomb
(c) 2.4 micro-coulomb
(d) 5.1 micro-coulomb

No, the answer is incorrect.
Score: 0
Accepted Answers:
(b)

A ballistic galvanometer gives a throw of 10 cm when a charge of $1.2\times10^{-6}$ coulomb is passed through it. The time-period is 3.14 sec. Find the deflection of the galvanometer when a steady current of 3.3 passed through it. ($\pi = 3.14$)

(a) 12.5 cm
(b) 10.5 cm
(c) 7.5 cm
(d) 5.5 cm

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a)