

Name:		Roll No.		Subject	Physics
Test Type	MCQs, Short & Long question	Class	12	Date	
Chapter	16 Start to before Power Dissipation	Unit	16	Time	

Q. No. 1 Tick the best option

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- The frequency of A.C used in Pakistan is:
(a) 50 CPS (b) 60 CPS (c) 100 CPS (d) 120 CPS
- For resistance, $\vec{V}$ and $\vec{I}$ vectors are drawn:
(a) Perpendicular to each other (b) Parallel to each other
(c) Such that $\vec{V}$ leads $\vec{I}$ (d) Such that $\vec{V}$ lags $\vec{I}$
- The output voltage of an AC generator at time $t = 3T/4$ is given by:
(a) $V = -V_0$ (b) $V = 0$ (c) $V = V_0/2$ (d) $V = V_0$
- The dimensions of $\frac{L}{R}$ is same as:
(a) Frequency (b) Impedance (c) Angular frequency (d) Time
- The unit of $\frac{\omega L}{R}$ in R-L series circuit:
(a) Ohm (b) Volt (c) Henry (d) Unit less
- The impedance of R-C series A.C circuit is given as $Z = ?$
(a) $\sqrt{R^2 - (\omega C)^2}$ (b) $\sqrt{R^2 + (\omega C)^2}$ (c) $\sqrt{R^2 + (\frac{1}{\omega C})^2}$ (d) $R^2 + (\omega C)^2$
- At higher frequency, the current through the capacitor will be:
(a) Small (b) Zero (c) Large (d) Infinity
- In case of capacitor, the SI unit of reactance is:
(a) Volt (b) V/Ω (c) Farad (d) Ohm
- Reactance offered by a coil having no resistance in A.C circuit is equal to:
(a) $\frac{1}{\omega L}$ (b) ωL (c) ωLR (d) $\omega L + R$
- The average value of alternating voltage over a complete cycle is:
(a) $0.7 V_0$ (b) $0.707 V_{rms}$ (c) Zero (d) Neutral
- The ratio of rms value of applied voltage to the rms value of A.C is:
(a) Capacitance (b) Impedance (c) Conductance (d) Inductance
- The phase out at the negative peak of A.C is:
(a) $\pi/2$ (b) $\pi/4$ (c) $3\pi/2$ (d) π
- A.C Voltmeter is calibrated to measure:
(a) Peak value (b) Average value (c) Rms value (d) All of these
- An A.C Voltmeter reads 220 V its peak value is:
(a) 311.17 V (b) 3220.12 V (c) 220 V (d) 155.54 V
- The points where the waveform reaches its maximum value:
(a) $\pi/2$ (b) π (c) $3\pi/2$ (d) Both a & c
- The basic circuit element in a D.C circuit which controls the current or voltage is:
(a) Resistor (b) Inductor (c) Capacitor (d) All of these
- In an A.C circuit with capacitor only, the current:
(a) Lags behind voltage by 90° (b) Leads voltage by 90°
(c) Leads voltage by 270° (d) In phase with voltage
- In R-L series circuit phase angle is given by:
(a) $\tan^{-1}(\omega L/R)$ (b) $\tan^{-1}(\omega LR)$ (c) $\tan^{-1}(\frac{R}{\omega L})$ (d) $\cos^{-1}(\frac{\omega L}{R})$
- If the frequency of A.C supply is doubled then the capacitive reactance becomes:
(a) Doubled (b) Half (c) Four times (d) One fourth
- At what frequency will an inductor of 1.0 H have a reactance of 500 ohms?
(a) 50 Hz (b) 80 Hz (c) 500 Hz (d) 1000 Hz
- The slope of q-t curve at any instant of time gives:
(a) Current (b) Voltage (c) Charge (d) All of these
- Power dissipation in pure inductor is:
(a) Large (b) Small (c) Zero (d) Infinite

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Q. No. 2 Write the short answer of these following question

5 x 2 = 10

- 1) What do you mean by phase lag and phase lead?
- 2) Define Impedance. Give its S.I unit.
- 3) Define the terms: (i) P-P value (ii) Root Mean Square value
- 4) What is the effect of resistor in an A.C circuit?
- 5) What is meant by capacitive and inductive reactance? Write its formulas related with frequency.

Q. No. 3 Long question

- 1) Explain R-C series circuit. Find out impedance and phase of an A.C in R-C series circuit.

