

## Physics - ICS Part 2 Physics Chapter 16 Short Questions Preparation

Q1. How many times per second will an incandescent lamp reach maximum brilliance when connected to a 50 Hz source? Explain.

**Ans 1:** An incandescent lamp will reach maximum brilliance two time in cycle. One time for positive half cycle and one negative half cycle.

Q2. Define alternating current.

**Ans 1:** Alternating current is that which is produced by a voltage source whose polarity keeps on reserving with time.  
 $i = I_0 \sin 2\pi ft.$

Q3. What is difference between A.C circuit and D.C circuit?

**Ans 1:** In A.C circuit, in addition to resistor A, inductor and capacitor are used to control the current and voltage.

**Ans 2:** In D.C circuit, resistor R is used to control the current and voltage.

Q4. Write two properties of RLC series circuit.

**Ans 1:**

1. The impedance of the circuit at resonance is minimum and equal to R.
2. The power factor of RLC series circuit is 1.

Q5. Define Instantaneous Value and Peak value of current.

**Ans 1:** The value of current or voltage at any any instant is called instantaneous value and the maximum value of current or voltage is called peak value.

Q6. Write down two advantage of use of three phase AC supply.

**Ans 1:**

1. The main advantage of having three phase supply is that the total load of the house or a factory is divided in the three parts, so that none of the line is overloaded.
2. Three phase supply also provide 400 V Which can be used to operate some special appliances which require 400 V for their operation.

Q7. Differentiate between peak value and peak to peak value.

**Ans 1:** Peak value: It is the highest value reached by the voltage or current in one cycle, It is denoted by the  $V_0$ .

**Ans 2:** Peak to peak value: It is the sum of the positive and negative peak value usually written as p-p value,

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Q8. What is the root mean square value of current? Explain.

**Ans 1:** The square root of mean square values of current is called root mean square value of current. The average value of current over a cycle is zero but the power delivered during a cycle is not zero because power is  $I^2R$  and the values are positive even for negative values of  $I$ .

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Q9. What is modulation? Name its types,

**Ans 1:** The process of combining the low frequency signal with a high frequency is called modulation. It is of two types.

1. Amplitude modulation
  2. Frequency modulation.
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Q10. Define impedance and resonant frequency.

**Ans 1:** A measure of the opposition to the flow of charged in an AC circuit is called impedance. It is the combined effects of resistance and inductive and capacitive reactance. Its unit is in ohm's. The frequency at which inductive and capacitive reactance become equal is called resonant frequency.

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