

NEW STANDARD ACADEMY

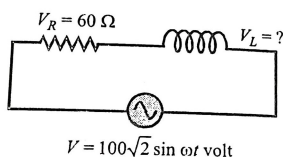
Date : 22-07-24

CLASS : 12TH NEET

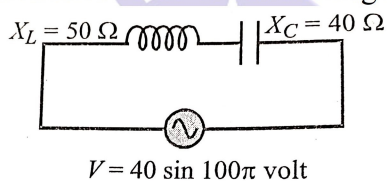
Marks: 60
Time: 3 HRS

PHYSICS

1. If $I = I_0 \sin \omega t$, $E = E_0 \cos \left[\omega t + \frac{\pi}{3} \right]$ then calculate phase difference between E and I.
2. If phase difference between E and I is $\frac{\pi}{4}$ and $f = 50$ Hz, then calculate time difference.
3. The average value of alternating current for half cycle in terms of I_0 is
4. In the equation for AC, $I = I_0 \sin \omega t$, the current amplitude and frequency will, respectively be
5. The RMS value of an alternating current of frequency 50 Hz is 10 ampere. The time taken by the alternating current in reaching from zero to maximum value and the peak value of current will, respectively, be
6. In the given circuit, calculate voltage across inductor.



7. If $X_L = 50 \Omega$ and $X_C = 40 \Omega$, calculate the effective value of current in given circuit.



8. Let $f = 500$ Hz and $C = 100 \mu\text{F}$ in an AC circuit containing a capacitor only. The peak value of the current in the circuit is 1.57 A at $t = 0$. The expression for the instantaneous voltage across the capacitor will be
9. In an AC circuit, the potential difference across an inductor and a resistor, joined in series, are 16 V and 20 V, respectively. The potential difference across the circuit is

10. If a bulb and a coil are connected in series with DC source and an iron core is put in the coil, then the intensity of bulb will increase, decrease or remain same?

CHEMISTRY

1. Write the IUPAC names of the following
 - a) $[\text{Co}(\text{NH}_3)_6][\text{Cr}(\text{CN})_6]$
 - b) $[\text{CoSO}_4(\text{NH}_3)_5]\text{Br}$
 - c) $\text{K}_3[\text{Cr}(\text{C}_2\text{O}_4)_3]$
 - d) $[\text{Co}(\text{en})_2(\text{CN})_2]\text{ClO}_3$
2. Write the formula of following compounds.
 - a) dicyanidobis(ethylenediammine) Nitrate
 - b) pentaquaachloridochromium(III) chloride
3. What is ligands? Write their types with one-one example of each
4. Write the difference between double salts & coordination compounds
5. Write the main rules applied in the IUPAC Nomenclature of the coordination compounds.
6. describe Tetradentate & Hexadentate ligands with example
7. Explain the following with example
 - a) linkage isomerism
 - b) Coordination isomerism
8. Explain Geometrical isomerism with Coordination number 4&6 & give one-one example Of each
9. Explain the following
 - i) effective Atomic number
 - ii) Coordination number
10. How many types of geometrical & optical isomer's can be possible for given compound
 $[\text{Pt}(\text{Br})(\text{Cl})(\text{I})(\text{NO}_2)(\text{NH}_3)(\text{Py})]$

BIOLOGY

1. Why is it essential to have selectable marker in a cloning vector?

2. What is the plasmid give its characteristic feature?
3. What is the best method for separating DNA fragments explain it.
4. What modification is done on the Ti plasmid of *Agrobacterium tumefaciens* to convert it into the cloning vector?
5. What is palindromic sequence in DNA? Give the example.
6. What is Biological Scissors explain with example.
7. Explain with steps in formation of recombinant DNA by action of restriction of endonuclease enzyme E co RI.
8. Name the group of organism and the substrate that act on to produce biogas, Explain it.
9. What is an immunosuppressive agent give its example.
10. What is a flocs give its role in sewage treatment?

