

7- List down the units of the following

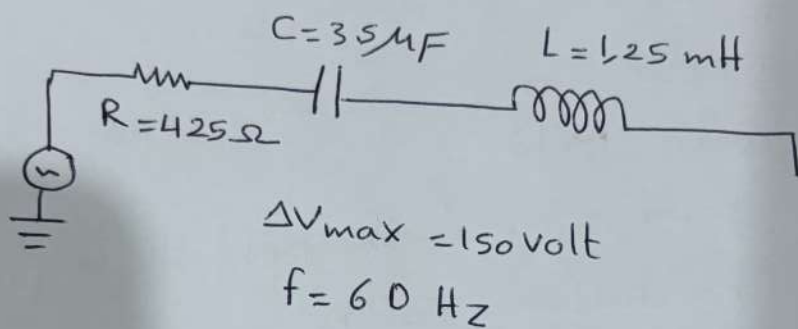
a- inductive reactance ( $X_L$ ).

b- Acceleration ( $a$ ).

8- From the following figure determine

a-  $Z = ?$

b-  $I_{\max} = ?$



9- A wire carries of 220 Amperes, the magnetic field of magnetude  $B = 0.5 \times 10^4$  Tesla

$\theta = 90^\circ$ ,  $L = 36 \text{ m}$ ,  $A = 2.5 \times 10^4 \text{ m}^2$

$\rho = 8.92 \times 10^3 \text{ kg/m}^3$

Find  $F_B = ?$ ,  $F_g = ?$

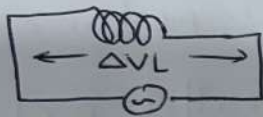
10- A capacitor is connected to the terminals of  $f = 120 \text{ Hz}$  A.C source whose rms voltage  $V_{\text{rms}} = 300 \text{ volts}$

Find : The rms current in circuite

11 - Write the difference between impedance ( $Z$ ) of series RCL circuits and parallel RCL circuits by (Law).

12 - Analysis of parallel circuit relationship write the Law  $I_{tot}$  and draw between  $I_c$  and effectively subtract and  $I_R$ .

13 - Draw between  $(\Delta V_L, i_L)$ ,  $(\Delta V_C, i_C)$  with  $\frac{1}{t}$  in inductors ( $L$ ) and capacitor in an A.C circuit



14 - What is the relation between type of charges and direction of rotation in magnetic field ( $B$ ).

15 - What is the relation between a charged particle moves in (parallel) and perpendicular with magnetic Force ( $F_B$ ).

16 - What is the difference between discovered (Orsted and Faraday) in magnetism.



17 - From application of Biot-Savart's Law magnetic field (B) between two parallel conductor.

$$F/L = \frac{\mu_0 I_1 I_2}{2\pi r}$$

18 - From series resonant frequency ( $f_r$ )

$$f_r = \frac{1}{2\pi\sqrt{LC}}$$

19 - Write the difference between impedance (Z) of series RCL circuit and parallel RCL circuits by (equation).

20 - From capacitor (C) in an (Draw) the relation between  $\Delta V_c$ ,  $i_c$  and (t).



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( Questions Bank )

- 1- Define the following
  - 1- Magnetic force
  - 2- Magnetic flux ( $\Phi_E$ ).
- 2- An  $8\mu\text{F}$  capacitor is connected to terminal of  $60\text{ Hz}$  A.C source  $V_{\text{rms}}$  voltage is  $(150\text{ volt})$  Find The capacitive reactance ( $X_C = ?$ )
- 3- Write the Law of the following :
  - a- Magnetic force acts on a charge moving in magnetic field.
  - b. The time interval the particle requires to complete one revolution ( $T = ?$ ).
- 4- A proton is moving in a circular orbit of radius  $14\text{ cm}$  in a uniform  $0.35\text{ Tesla}$  magnetic field perpendicular to the velocity of the proton  
Find : The speed ( $v = ?$ ) of the proton. If  
 $m_p = 1.67 \times 10^{-27}\text{ Kg}$  .  $q_p = 1.6 \times 10^{-19}\text{ coul.}$
- 5- What is the different between inductor ( $L$ ) and capacitor ( $C$ ) in A.C circuit (by Laws only)
- 6- Prove :  
torque on a current loop and electric  
 $T = \mu B \sin\theta$  .