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AC CIRCUITS -TEST1

1) An inductor L= 40 mH is connected to a source with peak p.d is 120V and the freequency is 60Hz.what is its peak current?
   a) 7.96 A
   b)5.23 A
   c) 14.9 A
   d) 2.52 A

2) the reactance of an inductor is 37.7Ω at 60 Hz .it is connected to a 50 Hz source with a 120V(rms) potential difference.what is the peak current?
   a)0.1 A
   b)5.4 A
   c) 2.34 A
   d)3.67 A

3) a step down transformer has 600V across the primary and 120V across the secondary.the secondary coil has 80 turns and a resistor of 10Ω.what is the number of turns and current in the primary?
   a) 200 , 2.4 A
   b) 400, 1.2A
   c) 400, 2.4A
   d)200, 1.2A

4) electrical power from a power station is transmitted at very high potential difference because
   a) to increase the power loss
   b) to decrease the joule heating in the teansmission lines
   c) to decrease the power loss
   d) both b and c

5) in a simple capacitor circuit
   a)current leads voltage by a phase of 90 degrees
   b)current lags voltage by a phase of 90 degrees
   c)current leads voltage by a phase of 180 degrees
   d)current lags voltage by a phase of 180 degrees

6) capacitor blocks ..... and allows .....
   a)ac and dc
   b)dc and ac
   c)both ac and dc
   d)none

7) inductor blocks..... and allows .....
   a)ac and dc
   b)dc and ac
   c)both ac and dc
   d)none

8) SI unit of capacitive reactance is
   a) farad
   b) ohm

c) henry
d) ohm- meter

9) the phase difference between the voltage across an inductor and a capacitor in an ac circuit is
   a) 90 degrees
   b)180 degrees
   c) 0 derees
   d) we can not say
10) how much current is drawn by the primary coil of a transformer , which steps down 220V to 44V to operate a device with an impedance of 440Ω ?
   a) 20 A
   b) 0.02A
   c) 200 A
   d) 0.2A
11) the current through a coil of inductance 2mH is represented by a I= 0.2 sin 200t.calculate the maximum value of induced emf and induced current?
   a) 0.2 V and 0.2A
   b)0.08V and 0.2A
   c) 0.02V and 0.08A
   d) 0.2V and 0.8A
12) quality factor for series RLC circuit is
   a) Q=1/R(√L/C)
   b)Q=1/L(√R/C)
   c)Q=1/R(√LC)
   d)Q=1/L(√RC)
13) a coil of inductance 0.5H and resistance 100Ω is connected to 240V,50 Hz ac supply.what is the phase difference btn max voltage and max current
   a) 90degrees
   b) 57 degrees
   c) 120degrees
   d) 180 degrees

14) AC voltage in resistor ckt is 220V and resistance of resistor is 200 ohm then what is the value of the max power?
   a)383 W
   b)443.80 W
   c)483.85 W
   d)500.80 W

15) The phase difference between current and emf in resistor circuit is
   a) 0
   b) +90
   c) -90
   d)none of these

16)The frequency of resistor ckt is 50 HZ then the time taken by the emf to reach rms from its max value is
   a) 1.5ms
   b)2ms
   c)2.5ms
   d)3ms

17) What is the instantaneous emf in the capacitor ckt when the instantaneous current is Imax/2
a)E=Emax/2
b)E=Emax
c)E=sqrt(3)Emax/2
d)none of these

18) What is the quality factor of LCR ckt having L=4H, C=20*10^-6 F and R=5 ohm
a)70.5
b)89.44
c)95.33
d)none of these

19) For critical damped oscillations the R value in the LCR ckt is
a)R=2sqrt(C/L)
b)R=2sqrt(C/L
c)R=2sqrt(CL)
d)none of these

20) What is the phase angle when Vmax,L=25 and Vmax,R=25
a)30
b)45
c)60
d)90

21) Match the following:

1) Current leads the voltage	a)inductor circuit
2) Z = (R2+ XL2)1/2	b) LC circuit
3) Phase angle between Inductive Voltage and capacitive voltage is 1800	c)impedence of a capacitor circuit
4) Z = (R2+ Xc2)1/2	d) Z = (R2+(XL – Xc)2)1/2
5) Voltage leads the current	e) impedance of a inductor ckt
6) Impedance of a LRC circuit	f) pure resistor circuit
	g) pure capacitor circuit
	h)RL circuit

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