Electrical Circuits (B) - Quiz 1

Max Time Allowed: 10 min

Q.1) **for Low pass filter, At low frequency Vout = 0**

  A. ○ True

  B. ◉ False

Q.2) **mutual coupling exists when The inductors or coils are in far proximity**

  A. ◉ False

  B. ○ True

Q.3) **The magnitude of current in the reactive elements at parallel resonance is Q times Lower than the applied source current.**

  A. ○ True

  B. ◉ False

Q.4) **Active Filters consists of only passive elements R, L, and C.**

  A. ◉ False

  B. ○ True

Q.5) **in electrical ciruits, the particular integral solution Represent the steady-state solution**

  A. ○ False

  B. ◉ True

Q.6) **M21 relates the induced voltage in coil 1 to the current in coil 2**

  A. ◉ False

  B. ○ True

Q.7) **At parallel resonance,The Power factor is unity.**

  A. ○ False

  B. ◉ True

Q.8) **The resonant circuit consists only of inductor with a voltage or current source.**

  A. ◉ False

  B. ○ True

Q.9) **Laplace Transform is more complex mothod for solving transient equations**

  A. ◉ False

  B. ○ True

Q.10) **Since the current is maximum at resonance,it follows that the power must similarly be maximum at resonance.**

  A. ○ False

  B. ◉ True

Q.11) **typical characterstics of filter response curve is more sharp than ideal chatacerstics**

  A. ○ True

  B. ◉ False

Q.12) **in ideal transformer the voltage ratio is directional proportional to current ratio**

  A. ◉ False

  B. ○ True

Q.13) **partial fraction is an urgent step to solve transient current using differential equation method**

  A. ○ True

  B. ◉ False

Q.14) **When two loops with or without contacts between them affect each other through the magnetic field generated by one of them, they are said to be magnetically coupled.**

  A. ○ False

  B. ◉ True

Q.15) **Band pass filters are also called band reject filters**

    A. ◉   False

    B. ○   True

Q.16) **A steady state period obtained when a circuit is switched from one condition to another.**

    A. ○   True

    B. ◉   False

Q.17) **in practical parallel resonance , if the internal resistance of the coil is negligable , so the resonance frequency of the circuit will be greater the resonant frequency of ideal parallel resonance**

    A. ◉   True

    B. ○   False

Q.18) **in series resonance, The higher the value of Q , the more selective the circuit is but more bandwidth.**

    A. ◉   False

    B. ○   True

Q.19) **The resonant circuit consists only of a capacitor with a voltage or current source.**

    A. ◉   False

    B. ○   True

Q.20) **The mutual voltage may be negative or positive**

    A. ○   False

    B. ◉   True

Q.21) **In RLC series resonance the Magnitude of inductive reactance must Eliminates the Magnitude of capacitive reactance to result a pure inductor**
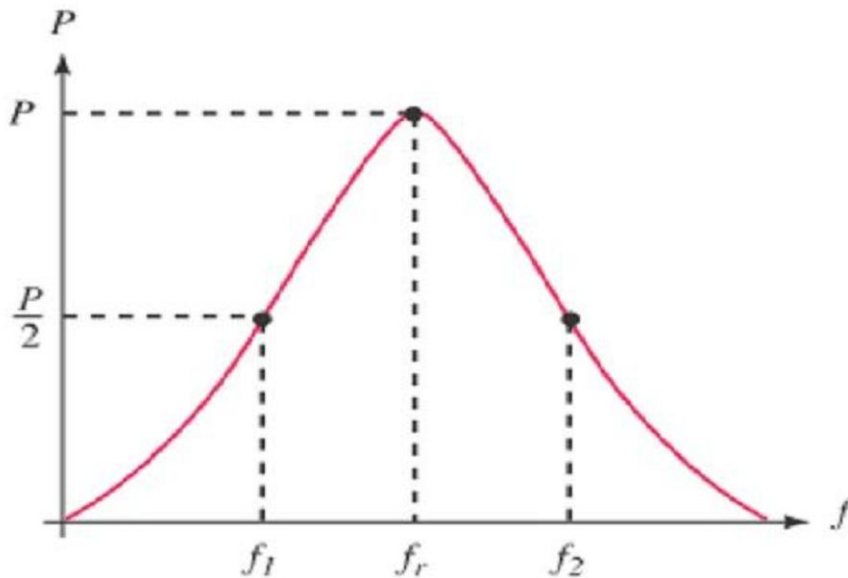
$$R + j \left(\omega L - \frac{1}{\omega C} \right)$$

    A. ○   True

    B. ◉   False

Q.22) **band stop filters used to pass a certain band of frequencies**

    A. ○   True

    B. ◉   False

Q.23) **This curve indicates that power will be a maximum at fr and varying the frequency in either direction results in a rise of the power.**

A. ⦿ False

B. ○ True

Q.24) **Differential equation give the same solution for transient current that obtained by laplace**

A. ⦿ True

B. ○ False

Q.25) **For Sinusoidal source d/dt =1/ jw**

A. ⦿ False

B. ○ True

Q.26) **Active filters can be used to perform mathmatical operations as integrations**

A. ⦿ True

B. ○ False

Q.27) **The power response of a series resonant circuit has a bell-shaped curve called the selectivity curve.**

A. ⦿ True

B. ○ False

Q.28) **The RLC parallel resonant circuit provides a band-stop filter when the output is taken off the LC**

A. ○ True

B. ⦿ False

Q.29) **Active filters Can generate gains greater than one**

A. ⦿ True

B. ○ False

Q.30) **After the steady state interval , the circuit is said to be in the transient.**

A. ⦿ False

B. ○ True

Q.31) **For RC series circuit with DC supply the transient current decays with time**

A. ○ False

B. ⦿ True

Q.32) **The Bandwidth of the resonant circuit (BW) is The difference between the frequencies at which the circuit delivers half of the maximum power.**

A. ⦿ True

B. ○ False

Q.33) current may vary in an electrical circuit when a change in the applied voltage or a change in one of the circuit elements done.

A. ○ False

B. ◉ True

Q.34) Passive Filters consists of only passive elements R, and C.

A. ◉ False

B. ○ True

Q.35) Passive Filters is more prefereable than Active filters

A. ◉ False

B. ○ True

Q.36) The RLC parallel resonant circuit provides a
bandpass filter when the output is taken
off the resistor

A. ◉ False

B. ○ True

Q.37) passive filters can be designed to generate output voltage greater than input voltage

A. ○ True

B. ◉ False

Q.38) in electrical ciruits, the Complementary solution Represent the transient solution

A. ◉ True

B. ○ False

Q.39) in step down transformer , the current at secondary coil is greater than primary.

A. ◉ True

B. ○ False

Q.40) A filter that prevents a band of frequencies
between two designated values is called high stop filter

A. ◉ False

B. ○ True

Q.41) At parallel resonance, The currents through the inductor and
the capacitor have the same
magnitudes but are 90 out of phase.

A. ○ True

B. ◉ False

Q.42) The bandwidth is the average between the half power points on the response curve of the filter.
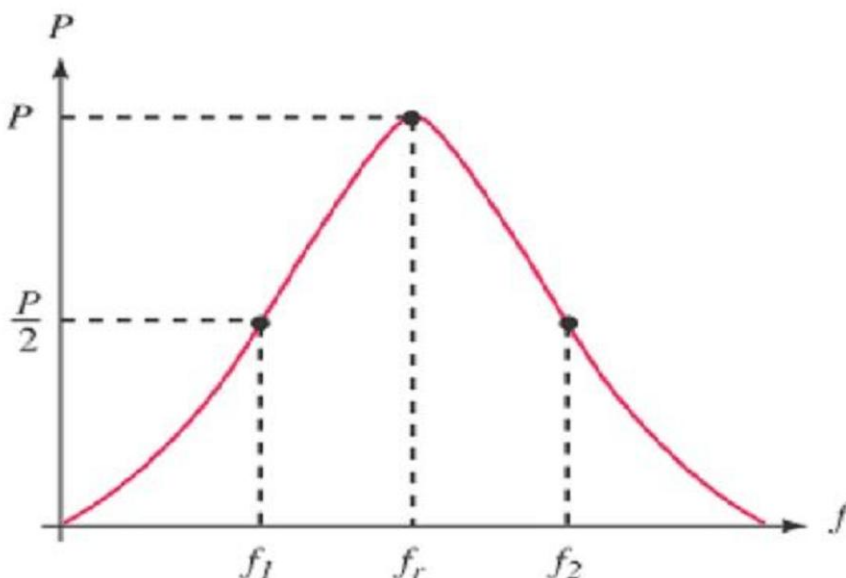
A. ◉ False

B. ○ True

Q.43) in series RLC with DC supply, The particular integral function can be one of three different types according to the roots of the auxiliary equation.

A. ◉ False

B. ○ True

Q.44) for Ideal transformer there is no power Loss

A. ○ False

B. ◉ True

Q.45) When two coils are close to each other, the magnetic flux caused by current in one coil links with the other coil.

A. ◉ True

B. ○ False

Q.46) Second Order Filters contain two reactive elements (L and C)

A. ◉ True

B. ○ False

Q.47) in series resonance, If the band of frequencies to be selected or rejected is narrow, the quality factor of the resonant circuit must be high.

A. ◉ True

B. ○ False

Q.48) The resonant frequency is the geometric mean of the half-power frequencies. The resonant frequency is the geometric sum of the half-power frequencies.

A. ○ True

B. ◉ False

Q.49) Transformer is the direct application for mutual inductance phenomena

A. ◉ True

B. ○ False

Q.50) The value of ω that satisfies this condition is called the resonant frequency

$$\omega_S = \frac{1}{\sqrt{LC}} \ (Hz)$$

A. ◉ False

B. ○ True

Q.51) For RC series circuit with DC supply the transient current take the form of triangle wave form

A. ○ True

B. ◉ False

Q.52) in ideal transformer the turns ratio inversly poroprtional to the root of self inductance ratio

A. ○ True

B. ◉ False

Q.53) for high pass filter, At high frequency Vout = 0

A. ○ True

B. ◉ False

Q.54) At parallel resonance, the admittance consists only conductance G = 1/2R.

A. ◉ False

B. ○ True

Q.55) The phase of The current across coil in series resonant circuit is +90 when the supply is 5Sinωt

A. ○ True

B. ◉ False

Q.56) the quality factor of resonance circuit doesn't depent on resistance

A. ◉ False

B. ○ True

Q.57) **Mutual inductance M may be Negative or positive**

   A. ○ True

   B. ◉ False

Q.58) **in series RL circuit, the steady state current is zero**

   A. ○ True

   B. ◉ False

Q.59) **in series RLC with DC supply, the transient current obtained will be a part of solution for the same circuit but with AC supply**

   A. ◉ True

   B. ○ False

Q.60) **At parallel resonance,The value of current will be minimum since the total admittance is maximun**

   A. ◉ False

   B. ○ True

Q.61) **in dot convention, if currents enter dotted terminals of two coils , M will be positive**

   A. ○ False

   B. ◉ True

Q.62) **For RC series circuit with DC supply and two position switch, the boundary condition of the current of position two become 0 ampere.**

   A. ◉ False

   B. ○ True

Q.63) **The total impedance of RLC parallel circuit is given in the shown relation**

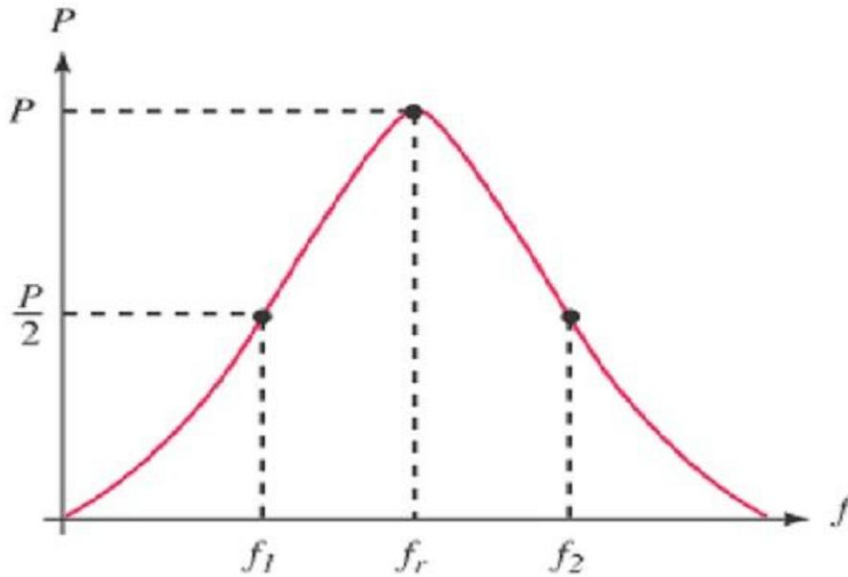$$R + j\left(\omega L - \frac{1}{\omega C}\right)$$

   A. ○ True

   B. ◉ False

Q.64) **If the bandwidth of a circuit is kept very narrow , the circuit is said to have a Low selectivity**

   A. ○ True

   B. ◉ False

Q.65) **A series RLC with DC supply is considered first order circuit**

   A. ◉ False

   B. ○ True

Q.66) **This curve is for bandstop filter**

A. ○ True

B. ◉ False

Q.67) **mutual coupling exists when the circuits are driven by time-constant sources**

A. ◉ False

B. ○ True

Q.68) **First-order circuits contain a single capacitor and inductor**

A. ○ True

B. ◉ False

Q.69) **No protection needed when the inductance from one coil can interfere with the operation of another adjacent component by means of electromagnetic induction**

A. ◉ False

B. ○ True

Q.70) **The "sharpness" of the resonance in a resonant circuit is measured quantitatively by the quality factor Q.**

A. ◉ True

B. ○ False