

4. In a purely capacitive circuit with an applied sine wave voltage, the voltage  
 A. must be DC.  
 B. will lead the current.  
 C. will be in phase with the current.  
 D. will lag the current. 12
5. When one vibrating body sets a second body into vibration at the same natural frequency it's called  
 A. sympathy.  
 B. sympathetic vibration.  
 C. natural sympathy.  
 D. mutual sympathy. 8
6. In a certain tuned series RLC circuit  $X_L = X_C$ . The impedance of that circuit is equal to  
 A.  $X_L - X_C$ .  
 B.  $X_L + X_C$ .  
 C.  $R$ .  
 D.  $R^2$ . 43  
*check pg 15*
7. As far as the generator is concerned, in a series-resonant LC circuit (with no resistor), L and C can be replaced by  
 A. a single resistor with a value equal to  $L \times C$ .  
 B. the value of C.  
 C. the value of L.  
 D. a straight piece of wire. 16 17
8. Which of the following is *not* true? At resonance in a series RLC circuit,  
 A. the voltage across R, the voltage across C, and, the voltage across L are all equal.  
 B. the current through all of the components (R, L, and C) is the same.  
 C.  $V_C = V_L$ .  
 D. the phase angle of a generated AC voltage across the circuit and the resulting current is 180 degrees. 34
9. The bandwidth of a series-tuned circuit is that range of frequencies between where the voltage is \_\_\_\_\_ of the maximum voltage.  
 A. 75%  
 B. 70.7%  
 C. 50%  
 D. 30% 47-50
10. You can lower the resonant frequency of a series-tuned RLC circuit by  
 A. decreasing C.  
 B. increasing L.  
 C. increasing R.  
 D. decreasing R. 34
11. When a capacitance is given as  $6.3 \times 10^{-6}$  farads, it can be written as  
 A. 6.3 millifarads.  
 B. 6.3 microfarads.  
 C. 6.3 nanofarads.  
 D. 6.3 picofarads.
12. The reciprocal of circuit Q is called  
 A. CQ.  
 B. reciprocal QR.  
 C. dissipation factor.  
 D. RQ. 51
13. In a parallel RLC circuit, increasing the resistance across the LC combination from 10 ohms to 10 megohms will  
 A. increase the value of Q.  
 B. decrease the value of Q.  
 C. not affect the value of Q.  
 D. increase the resonant frequency. 35