Rajiv Gandhi University of Knowledge Technologies

Weekly Test 1 – Network Theory

Date: 18-08-2012 **Time:** 30 Min

Course: E2Sem1_ECE & CSE **Max Marks:** 10

1.Match the following

Column A		Column B
(i)	Resistive load	(P) positive impedance angle
(ii)	Capacitive load	(Q) negative impedance angle
(iii)	Reactive power Q>0	(R) for inductive load
(iv)	Reactive power Q<0	(S) for capacitive load
(v)	Power factor of a pure inductor	(T) 0
		(U) Unity power factor

(A) (i) – Q, (ii) – P, (iii) – S, (iv) – R, (v) -U

(B) (i) – P, (ii) – Q, (iii) – R, (iv) – S, (v) - T

(C) (i) – U, (ii) – P, (iii) – S, (iv) – R, (v) - T

(D) (i) – U, (ii) – Q, (iii) – R, (iv) – S, (v) - T

2. What is the r.m.s value of 5V symmetric square?

(A) 5V (B) 0 V

(C) 2.5 V (D) 3.75 V

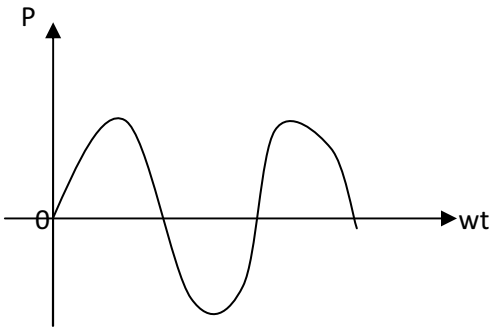
3. What is the resonant frequency of series RL circuit?

(A) $f = \frac{1}{2\pi} * L/R$ (B) $f = \frac{1}{2\pi} * R/L$

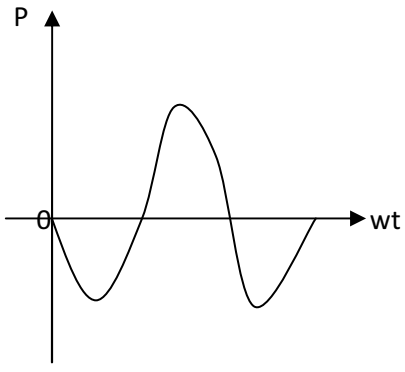
(C) Can't be determined (D) R*L

4. If $v(t) = V_m \sin(wt)$ be the applied voltage to an pure resistive system, which one of the following curve represents the power in an resistor

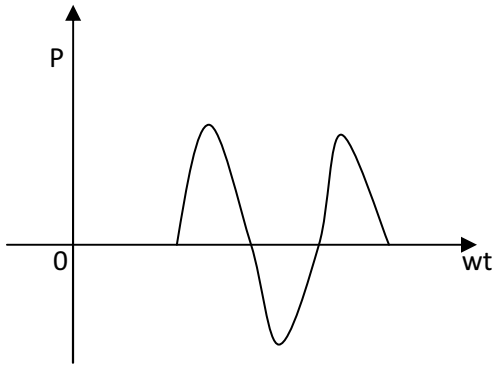
(A)



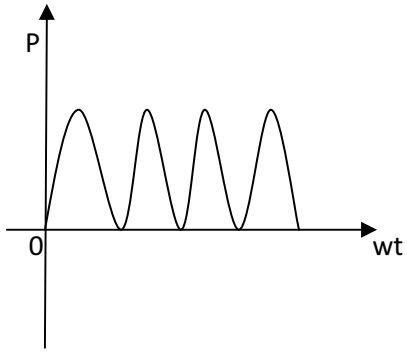
(B)



(C)



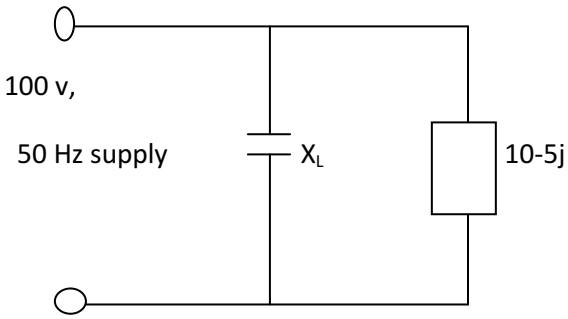
(D)



5. What is the power consumed in a 10 Ω resistor due to a current source i(t)=2+5cos2t+6cos(2t+60)

(A) 360 W (B)345 W (C) 455 W (D) none of the above

6. For the following circuit, calculate the value of inductance that would be required to correct the power factor to unity



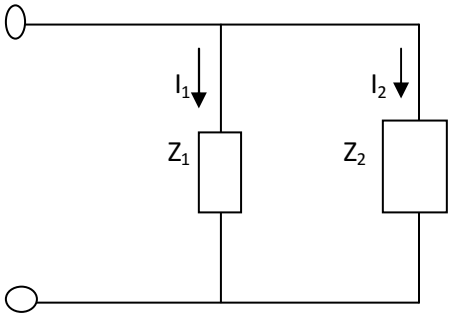
(A)16.91mH

(B) 15.91mH

(C) 20.91mH

(D) None of the above

7. For the following circuit, Z_1 is an inductor of value`L' and $Z_2$ is a capacitor of value `C' then the quality factor is



(A)can't be determined

(B) 1

(C) zero

(D) None of the above

8. In a series R, L, C ckt the power factor at $f=f_L$ is

a)0.707(leading)

b) 0.707(lagging)

c) 0.5(lagging)

d) 1

9. In a parallel R, L, C ckt the power factor at $f=f_L$ is

a)0.707(leading)

b) 0.707(lagging)

c) 0.5(lagging)

d) zero

10.Impedance in a parallel R,L,C at resonance is

a)maximum

b)minimum

c) zero

d) cant say

Key: 1)B 2)A 3) C 4)D 5) C 6) B 7) D 8)A 9) B 10)A