

**MALLA REDDY ENGINEERING COLLEGE**

**(AUTONOMOUS)**

**B.Tech I YEAR II SEMESTER-ECAS(EEE)**

**QUESTION BANK (OBJECTIVE)**

**MODULE-III**

1. Which among the following represents the precise condition of reciprocity for transmission parameters? [ ]  
(A)  $AB - CD = 1$  (B)  $AD - BC = 1$   
(C)  $AC - BD = 1$  (D) none of the above
2. Which is the correct condition of symmetry observed in z-parameters? [ ]  
(A)  $z_{11} = z_{22}$  (B)  $z_{11} = z_{12}$   
(C)  $z_{12} = z_{22}$  (D)  $z_{12} = z_{21}$
3. An open circuit reverse voltage gain in h-parameters is a unitless quantity and generally equivalent to \_\_\_\_\_ [ ]  
(A)  $V_1 / I_1$  (keeping  $V_2 = 0$ ) (B)  $I_2 / I_1$  (keeping  $V_2 = 0$ )  
(C)  $V_1 / V_2$  (keeping  $I_1 = 0$ ) (D)  $I_2 / V_2$  (keeping  $I_1 = 0$ )
4. How is the short circuit reverse transfer admittance ( $y_{12}$ ) calculated in terms of current and voltage ratio? [ ]  
(A)  $V_2 / I_1$  (keeping  $I_2 = 0$ ) (B)  $I_2 / V_1$  (keeping  $V_2 = 0$ )  
(C)  $I_1 / V_2$  (keeping  $V_1 = 0$ ) (D)  $V_1 / I_2$  (keeping  $I_1 = 0$ )
5. Which among the following is regarded as short circuit forward transfer admittance? [ ]  
(A)  $y_{11}$  (B)  $y_{12}$   
(C)  $y_{21}$  (D)  $y_{22}$
6. Which elements act as an independent variables in Y-parameters? [ ]  
(A) Current (B) Voltage  
(C) Both A and B (D) None of the above
7. Z parameters is also called as [ ]  
(A) Open circuit parameters (B) impedance parameters  
(C) both A & B (D) Admittance parameters
8. What does the connectivity of energy source at the port of network known as? [ ]  
(A) Driving Point (B) Transfer Point  
(C) Both A and B (D) None of the above
9. ABCD parameters is also called as [ ]  
(A) Chain parameters (B) Generalized circuit parameters  
(C) Transmission parameters (D) All the above
10. Which elements act as an dependent variables in Y-parameters? [ ]  
(A) Current (B) Voltage  
(C) Both A and B (D) None of the above

11. Which elements act as an dependent variables in Z-parameters? [ ]  
 (A) Current (B) Voltage  
 (C) Both A and B (D) None of the above
12. Which elements act as an independent variables in Z-parameters? [ ]  
 (A) Current (B) Voltage  
 (C) Both A and B (D) None of the above
13. In a two-port network, the condition for reciprocal for Z-parameters is [ ]  
 (A)  $Z_{21}=Z_{12}$  (B)  $Z_{11}=Z_{22}$  (C)  $AD-BC=1$  (D) None
14. The condition for symmetricity for Y-parameters is [ ]  
 (A)  $Y_{21}=Y_{12}$  (B)  $Y_{11}=Y_{22}$  (C)  $AD-BC=1$  (D) None
15. Which of the following option belongs to representation Z-parameters in terms of Y-parameters [ ]  
 (A)  $Z_{11}=Y_{22}/\Delta_y$ ;  $Z_{12}=-Y_{12}/\Delta_y$ ;  $Z_{21}=-Y_{21}/\Delta_y$ ;  $Z_{22}=Y_{11}/\Delta_y$   
 (B)  $Y_{11}=Z_{22}/\Delta_z$ ;  $Y_{12}=-Z_{12}/\Delta_z$ ;  $Y_{21}=-Z_{21}/\Delta_z$ ;  $Y_{22}=Z_{11}/\Delta_z$   
 (C)  $Y_{11}=Z_{22}/\Delta_z$   
 (D) None of the above
16. The condition for reciprocal for h-parameters is [ ]  
 (A)  $h_{21}=h_{12}$  (B)  $h_{12}=-h_{21}$  (C)  $AD-BC=1$  (D) None
17. Which of the following belongs to Y-parameters in terms of Z-parameters [ ]  
 (A)  $Z_{11}=Y_{22}/\Delta_y$ ;  $Z_{12}=-Y_{12}/\Delta_y$ ;  $Z_{21}=-Y_{21}/\Delta_y$ ;  $Z_{22}=Y_{11}/\Delta_y$   
 (B)  $Y_{11}=Z_{22}/\Delta_z$ ;  $Y_{12}=-Z_{12}/\Delta_z$ ;  $Y_{21}=-Z_{21}/\Delta_z$ ;  $Y_{22}=Z_{11}/\Delta_z$   
 (C)  $Z_{11}=Z_{22}/\Delta_z$   
 (D)  $Z_{22}=Y_{11}/\Delta_y$
18. Which of the following is open circuit input impedance [ ]  
 (A)  $Z_{11}$  (B)  $Z_{21}$  (C)  $Y_{21}$  (D)  $Y_{22}$
19. A two-port network is an electrical network contains \_\_\_\_\_ [ ]  
 (A) 3 ports (B) 4-ports (C) 2-ports (D) 6-ports
20. The matrix belongs to Impedance parameters is [ ]  
 (A)  $\begin{bmatrix} V_1 \\ V_2 \end{bmatrix} = \begin{bmatrix} z_{11} & z_{12} \\ z_{21} & z_{22} \end{bmatrix} \begin{bmatrix} I_1 \\ I_2 \end{bmatrix}$  (B)  $\begin{bmatrix} I_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} y_{11} & y_{12} \\ y_{21} & y_{22} \end{bmatrix} \begin{bmatrix} V_1 \\ V_2 \end{bmatrix}$
- (C)  $\begin{bmatrix} V_1 \\ I_2 \end{bmatrix} = \begin{bmatrix} h_{11} & h_{12} \\ h_{21} & h_{22} \end{bmatrix} \begin{bmatrix} I_1 \\ V_2 \end{bmatrix}$  (D) All
21. Which of the following is open circuit input impedance [ ]  
 (A)  $Z_{11}$  (B)  $Z_{21}$  (C)  $Y_{21}$  (D)  $Y_{22}$
22. Which of the following is open circuit output impedance [ ]  
 (A)  $Z_{11}$  (B)  $Z_{22}$  (C)  $Y_{21}$  (D)  $Y_{22}$
23. Which equation belongs to h-parameters [ ]  
 (A)  $V_1 = Z_{11} I_1 + Z_{12} I_2$ ,  $V_2 = Z_{21} I_1 + Z_{22} I_2$   
 (B)  $I_1 = Y_{11} V_1 + Y_{12} V_2$ ,  $I_2 = Y_{21} V_1 + Y_{22} V_2$   
 (C)  $V_1 = h_{11} I_1 + h_{12} V_2$ ,  $I_2 = h_{21} I_1 + h_{22} V_2$   
 (D)  $V_1 = A V_2 - B I_2$ ,  $I_1 = C V_2 - D I_2$

24. Which of the following is short circuit input admittance [   ]  
 (A)  $Y_{11}$                       (B)  $Y_{21}$                       (C)  $Y_{12}$                       (D)  $Y_{22}$

25. Which of the following is short circuit output admittance [   ]  
 (A)  $Y_{11}$                       (B)  $Y_{21}$                       (C)  $Y_{12}$                       (D)  $Y_{22}$

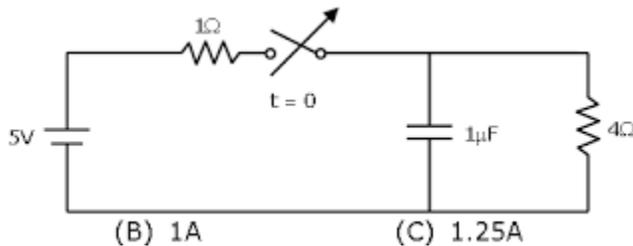
**ANSWERS**

1.B 2.A 3.C 4.C 5.C 6.B 7.C 8.A 9.D 10.A 11.B 12.A 13.A 14.B 15.CA16.B 17.B 18.A 19.C  
 20.A 21.A 22.B 23.C 24.A 25.D

**MODULE-IV**

**MULTIPLE CHOICE QUESTIONS:**

1. The switch in the circuit has been closed for a long time. It is opened at  $t=0$ . At  $t=0^+$ , the current through the  $1\mu\text{F}$  capacitor is [   ]



(B) 1A                      (C) 1.25A  
 A)0A                      B)1A                      C)1.25A                      D)5A

2. Hybrid means [   ]

(A)Mixed                      (B) Unique                      (C) single                      (D) None

3. Transient behaviour occurs in any circuit when [   ]

- A) there are sudden changes of applied voltage
- B)the voltage source is short circuited
- C) the circuit is connected or disconnected from the supply
- D) all of the above

4. When a series RL circuit is connected to a voltage V at  $t=0$ , the current passing through the inductor L at  $t=0^+$  is [   ]

(A)  $V/R$                       (B) infinite                      (C) zero                      (D)  $V/L$

5. A inductor does not allows sudden changes [   ]

- (A)in currents                      B) in voltages
- (C) both currents & voltages                      (D)Neither of the two

6. When a series RC circuit is connected to a voltage V at  $t=0$ , the current passing through the inductor L at  $t=0+$  is [ ]

- (A) infinite (B) zero (C)  $V/R$  (D)  $V/C$

7. The time constant of a series RL circuit is [ ]

- (A) LR (B)  $L/R$  (C)  $R/L$  (D)  $e^{-R/L}$

8. The time constant of a series RC circuit is [ ]

- (A)  $1/RC$  (B)  $R/C$  (C) RC (D)  $e^{-RC}$

9. The transient current in a loss-free LC circuit when excited from an ac source is a \_\_\_\_\_ sinewave? [ ]

- (A) undamped (B) overdamped (C) under damped (D) critically damped

10. The transient current in an RLC circuit is oscillatory when [ ]

- (A)  $R = 2\sqrt{L/C}$  (B)  $R=0$  (C)  $R > 2\sqrt{L/C}$  (D)  $R < 2\sqrt{L/C}$

11. All the rules and laws of D.C. circuit also apply to A.C. circuit containing [ ]

- (A) capacitance only (B) inductance only  
(C) resistance only (D) all the above

12. Time constant of an inductive circuit [ ]

- (A) increases with increase of inductance and decrease of resistance  
(B) increases with the increase of inductance and the increase of resistance  
(C) increases with decrease of inductance and decrease of resistance  
(D) increases with decrease of inductance and increase of resistance

13. In a lossfree RLC circuit the transient current is [ ]

- (A) oscillating (B) square wave (C) sinusoidal (D) non oscillating

14. The double energy transient occur in the [ ]

- (A) purely inductive circuit (B) RL circuit (C) RC circuit (D) RLC circuit

15. In a circuit containing R, L and C, power loss can take place in [ ]

- (A) C only (B) L only (C) R only (D) all above

16. Which of the following circuit component opposes the change in the circuit voltage ?

- (A) Inductance (B) Capacitance (C) Conductance (D) Resistance

17. Time constant of a capacitive circuit [ ]

- (A) increases with the decrease of capacitance and decrease of resistance  
(B) increases with the decrease of capacitance and increase of resistance  
(C) increases with the increase of capacitance and decrease of resistance  
(D) increase with increase of capacitance and increase of resistance

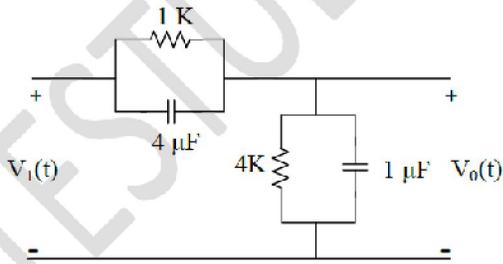
18. The Magnitude of current at resonance in RLC circuit [ ]

- (A) depends upon the magnitude of R  
(B) depends upon the magnitude of L  
(C) depends upon the magnitude of C  
(D) depends upon the magnitude of R, L and C



If  $V_i(t) = 10u(t)$  Volts,  $V_o(t)$  is given by

[      ]

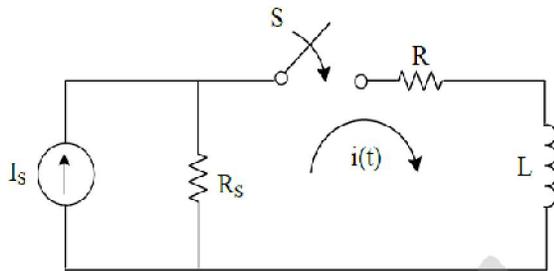


- (A)  $8e^{-t/0.004}$  Volts  
 (C)  $8u(t)$  Volts

- (B)  $8(1 - e^{-t/0.004})$  Volts  
 (D)  $8u(t)$  Volts

28. In the following circuit, the switch S is closed at  $t = 0$ . The rate of change of current  $di/dt(0+)$  is given by

[      ]



- (A) 0

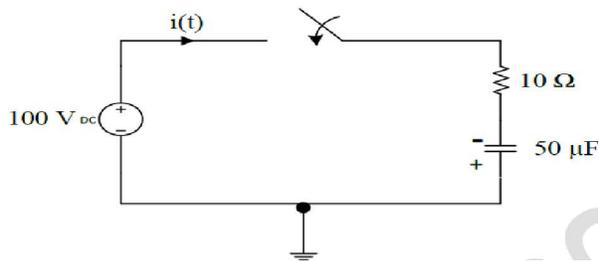
(B)  $\frac{R_s I_s}{L}$

- (C)  $\frac{(R+R_s)I_s}{L}$  Bilateral Circuit

- (D)  $\infty$

29. In the circuit shown below, the initial charge on the capacitor is 2.5 mC, with the voltage polarity as indicated. The switch is closed at time  $t = 0$ . The current  $i(t)$  at a time  $t$  after the switch is closed is

[      ]

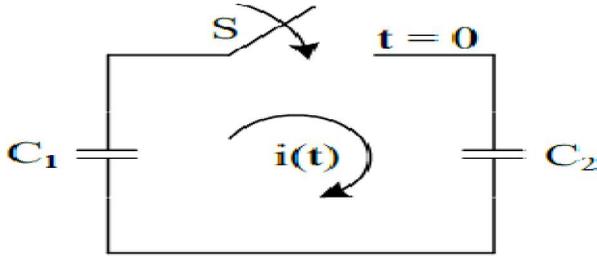


- A)  $i(t) = 15 \exp(-2 \times 10^3 t) A$   
 C)  $i(t) = 10 \exp(-2 \times 10^3 t) A$

- (B)  $i(t) = 5 \exp(-2 \times 10^3 t) A$   
 (D)  $i(t) = -5 \exp(-2 \times 10^3 t) A$

30. In the following figure  $C_1$  and  $C_2$  are ideal capacitors.  $C_1$  had been charged to 12V before the ideal switch S is closed at  $t = 0$ . The current  $i(t)$  for all  $t$  is

[      ]



- A) Zero  
 B) A step function  
 C) An exponentially decaying function  
 D) An impulse function

31. Inverse Laplace transform of 1 is \_\_\_\_ function. [     ]

- (A) 1                      (B)  $1/s$                       (C)  $1/s^2$                       (D)  $1/s^3$

32. Laplace transform of the function  $e^{-2t}$  is [     ]

- (A)  $1/2s$                       (B)  $(s + 2)$                       (C)  $1/(s + 2)$                       (D)  $2s$ .

33. The integral of a step function is [     ]

- (A) A ramp function.                      (B) An impulse function.  
 (C) Modified ramp function.                      (D) A sinusoid function

34. Laplace transform analysis gives [     ]

- A) Time domain response only  
 B) Frequency domain response only  
 C) Both A & B  
 D) None Of These

35. The Laplace transform of first derivative of a function  $f(t)$  is [     ]

- A)  $F(s)/s$                       B)  $sF(s) - f(0)$   
 C)  $sF(s) - f(0)$                       D)  $f(0)$

36. A ramp voltage,  $v(t) = 100t$  volts, is applied to an RC differentiating circuit with  $R = 5 \text{ k}\Omega$  and  $C = 4 \mu\text{F}$ . The maximum output voltage is [     ]

- (A) 0.2 volt                      (B) 2.0 volts  
 (C) 10.0 volts                      (D) 50.0 volts

37. The transient response occurs [     ]

- A) Only in resistive circuits                      B) Only in inductive circuits  
 C) Only in capacitive circuits                      D) both B & C

38. Inductor does not allow sudden changes [     ]

- (A) in currents                      B) in voltages

(C)both A & B

(D)None of the above

39. The time constant of the capacitance circuit is defined as the time during which voltage [ ]

- (A) falls to 36.8% of its final steady value
- (B) rises to 38.6% of its final steady value
- (C) rises to 63.2% of its final steady value
- (D) none of the above

40. The transient currents are associated with the [ ]

- (A) changes in the stored energy in the inductors and capacitors
- (B) impedance of the circuit
- (C) applied voltage to the circuit
- (D) resistance of the circuit

41. Time constant of a circuit is the time in seconds taken after the application of voltage to each \_\_\_\_\_ [ ]

- (a) 25% of maximum value
- (b) 50% of maximum value
- (c) 63% of maximum value
- (d) 90% of the maximum value

42. In the solution of network differential equations, the constants in the complementary function have to be evaluated from the initial conditions, and then the particular integral is to be added. This procedure is [ ]  
to be added. This procedure is

- (A) correct.
- (B) incorrect.
- (C) the one to be followed for finding the natural response.
- (D) the one to be followed for finding the natural and forced responses.

43. The Laplace-transformed equivalent of a given network will have  $\frac{8}{5}$  F capacitor replaced by [ ]

- (A)  $\frac{5}{8s}$
- (B)  $\frac{5s}{8}$
- (C)  $\frac{8s}{5}$
- (D)  $\frac{8}{5s}$

44. The formula for inductor L in laplace transform is [ ]

- (A) LS
- (B) LR
- (C) L/C
- (D)  $\infty$

45. The formula for capacitor C in laplace transform is [ ]

- (A) LS
- (B) LC
- (C) 1/SC
- (D) SC

46. The Laplace transform of  $te^{-at}$  [ ]

- (A)  $1/(s+a)^2$
- (B)  $1/(s-a)^2$
- (C)  $1/s$
- (D) 1

47. The Laplace transform of  $\cosh \omega t$  [ ]

- (A)  $\omega / (s^2 - \omega^2)$
- (B)  $\omega / (s^2)$
- (C)  $s / (s^2 - \omega^2)$
- (D)  $1 / (s^2 - \omega^2)$

48. The Laplace transform of  $\sinh \omega t$  [ ]

(A)  $\omega / (s^2 - \omega^2)$  (B)  $\omega / (s^2 + \omega^2)$  (C)  $s / (s^2 + \omega^2)$  (D)  $1 / (s^2 - \omega^2)$

49. The Laplace transform of  $\cos \omega t$  [ ]

(A)  $\omega / (s^2 - \omega^2)$  (B)  $(s^2 - \omega^2)$  (C)  $s / (s^2 + \omega^2)$  (D)  $\omega / (s^2 + \omega^2)$

50. The Laplace transform of  $\sin \omega t$  [ ]

(A)  $\omega / (s^2 - \omega^2)$  (B)  $(s^2 - \omega^2)$  (C)  $s / (s^2 + \omega^2)$  (D)  $\omega / (s^2 + \omega^2)$

### ANSWERS

1.B 2.A 3.D 4.C 5.A 6.C 7.B 8.A 9.A 10.D 11.C 12.A 13.C 14.D 15.C 16.B 17.D 18.A 19.b  
20.A 21.C 22.A 23.B 24.C 25.A 26.A 27.C 28.B 29.A 30.D 31.B 32.C 33.A 34.C 35.B 36.B  
37.D 38.A 39.C 40.A 41.C 42.A 43.D 44.A 45.C 46.A 47.C 48.A 49.C 50.D

### MODULE-V

1. The network shown in part a has zeros at [ ]

A)  $S=0$  and  $s=\infty$

B)  $S=0$  and  $s=-R/L$

C)  $s=\infty$  and  $s=-R/L$

D)  $s=\infty$  and  $s=-1/CR$

2. The following is a positive real function [ ]

A)  $(s+1)(s+2) / (s+1)^2$

B)  $(s-1)(s+2) / (s^2+1)$

C)  $s^4 + s^2 + 1 / (s+1)(s+2)(s+3)$

D)  $(s-1) / (s^2-1)$

3. A network function can be completely specified by \_\_\_\_\_ [ ]

(A) Real parts of zeros

(B) Poles and zeros

(C) Real parts of poles

(D) Poles, zeros and a scale factor

4. In the complex frequency  $s = \sigma + j\omega$ ,  $\omega$  has the units of rad/s and  $\sigma$  has the units of [ ]

(A) Hz

(B) neper/s

(C) rad/s

(D) rad

5. The following property relates to LC impedance or admittance functions: [ ]

(A) The poles and zeros are simple and lie on the  $\omega j$ -axis.

(B) There must be either a zero or a pole at origin and infinity.

(C) The highest (or lowest) powers of numerator or denominator differ by unity.

(D) All of the above.

6. If a network function has zeros only in the left-half of the s-plane, then it is said to be [ ]

- (A) a stable function. (B) a non-minimum phase function.  
(C) a minimum phase function. (D) an all-pass function

7. Zeros in the right half of the s-plane are possible only for [ ]

- (A) d.p. impedance functions.  
(B) d.p. admittance functions  
(C) d.p. impedance as well as admittance functions  
(D) transfer functions

8. The natural response of a network is of the form  $(A_1 + A_2t + A_3t^2)e^{-t}$ . The network must have repeated poles at  $s = 1$  with multiplicity [ ]

- (A) 5 (B) 4 (C) 3 (D) 2

9. An L-C impedance or admittance function: [ ]

- (A) has simple poles and zeros in the left half of the s-plane.  
(B) has no zero or pole at the origin or infinity.  
(C) is an odd rational function.  
(D) has all poles on the negative real axis of the s-plane.

10. A network function contains only poles whose real-parts are zero or negative. The network is [ ]

- (A) always stable.  
(B) stable, if the  $j\omega$ -axis poles are simple.  
(C) stable, if the  $j\omega$ -axis poles are at most of multiplicity 2  
(D) always unstable.

11. The admittance and impedance of the following kind of network have the same properties [ ]

- (A) LC (B) RL (C) RC (D) RLC

12. Both odd and even parts of a Hurwitz polynomial  $P(s)$  have roots [ ]

- (A) in the right-half of s-plane. (B) in the left-half of s-plane.  
(C) on the  $\sigma$ -axis only. (D) on the  $j\omega$ -axis only.

13. A stable system must have [ ]

- (A) zero or negative real part for poles and zeros.  
(B) at least one pole or zero lying in the right-half s-plane.  
(C) positive real part for any pole or zero.  
(D) negative real part for all poles and zeros.

14. Any LC network can be synthesized in to \_\_\_\_\_ forms. [ ]

- A) two B) three

C) one D)infinity

15. The first form of foster synthesis is \_\_\_\_\_ [ ]

- A) Series combination of parallel LC networks
- B) parallel combination of series LC networks
- C) Series combination of series LC networks
- D) ) parallel combination of parallel LC networks

16. The second form of foster synthesis \_\_\_\_\_ [ ]

- A) Series combination of parallel LC networks
- B) parallel combination of series LC networks
- C) Series combination of series LC networks
- D) ) parallel combination of parallel LC networks

17. In second Cauer form \_\_\_\_\_ method is performed with both numerator and denominator [ ]

- A). Continued fraction B) Routh hurtwitz criteria
- C) Both D) None

18. In the first cauer form \_\_\_\_\_ configuration is determined. [ ]

- A) Pole-zero B) Zero-pole C) Both D)None

19. To Check whether the function is polynomial, which of the following methods are used [ ]

- A). Continued fraction B) R-H criteria
- C) Both D) None

20. \_\_\_\_\_ method is very useful to synthesize the higher order polynomial [ ]

- A) Continued fraction expansion B) R-H criteria
- C) Both D) None

21. Canonical form is the combination of \_\_\_\_\_ [ ]

- A)foster B) Cauer
- C) Both D) None

22.  $Z(s)=(s+3)(s+5)/s(s+4)$ . The cauer form of RC network values are \_\_\_\_\_ [ ]

- A)  $R1=1\Omega, C2=1/4F, R3=16\Omega, C4=1/60F$

- B)  $R_1=5\Omega$ ,  $C_2=1/3F$ ,  $R_3=16\Omega$ ,  $C_4=1/60F$   
 C)  $R_1=10\Omega$ ,  $C_2=1/8F$ ,  $R_3=16\Omega$ ,  $C_4=1/60F$   
 D)  $R_1=0.5\Omega$ ,  $C_2=1F$ ,  $R_3=6\Omega$ ,  $C_4=60F$

23. In the second form of cauer we require to arrange numerator and denominator in \_\_\_\_\_ order [ ]  
 A.) Ascending      B) Descending      C)Both      D) neither

24. The poles of the impedance  $Z(s)$  for the network shown in Fig.1 below will be real and coincident if [ ]

- (A)  $R=2\sqrt{L/C}$       (B)  $R=4\sqrt{L/C}$   
 (C)  $R=1/2(\sqrt{\frac{L}{C}})$       (D)  $R=2\sqrt{C/L}$

25. If  $F(s)$  is a positive-real function, then  $Ev \{ F(s) \} |_{s=j\omega}$

- (A) must have a single zero for some value of  $\omega$ .  
 (B) must have a double zero for some value of  $\omega$ .  
 (C) must not have a zero for any value of  $\omega$ .  
 (D) may have any number of zeros at any values of  $Ev \{ F(s) \} |_{s=j\omega}$

26. The units of impedance is [ ]  
 (A) ohms      (B) mho      (C)watts      (D) no units

27. The units of admittance is [ ]  
 (A) ohms      (B) mho      (C)watts      (D) no units

28. The units for Real Power is [ ]  
 (A) KW      (B) KVAR      (C) KVA      (D) No units

29. The units for Reactive Power is [ ]  
 (A) KW      (B) KVAR      (C) KVA      (D) No units

30. The units for Apparent Power is [ ]  
 (A) KW      (B) KVAR      (C) KVA      (D) No units

31. The units of transfer function is [ ]  
 (A) KW      (B) KVAR      (C) KVA      (D) No units

32. The units of gain is [ ]  
 (A) KW      (B) KVAR      (C) KVA      (D) No units

33. The transfer function is the ratio of [ ]  
 (A) poles      (B) zeros      (C) poles and zeros      (D) No units

34. The impedance function for the RL circuit is \_\_\_\_\_. [ ]  
 (A)  $Z(s)=R+SL$       (B)  $Z(s)=R-SL$       (C)  $Z(s)=R/SL$       (D)  $Z(s)=R+L$

35. The admittance function for the RL circuit is \_\_\_\_\_. [ ]  
 (A)  $Y(s)=1/(R+SL)$       (B)  $Y(s)=1/(R+L)$       (C)  $Y(s)=1/(SL)$       (D)  $Y=R+L$

36. The impedance function for the RC circuit is [ ]  
 (A)  $Z(s)=R+1/SC$       (B)  $Z(s)=R-1/SC$       (C)  $Z(s)=R/SL$       (D)  $Z(s)=R+L$

37. The admittance function the RC circuit is [ ]

- (A)  $Y(s)=1/(R+SC)$  (B)  $Y(s)=1/(R+1/SC)$  (C)  $Y(s)=1/(SC)$  (D)  $Y=R+C$
38. The positive real functions are \_\_\_\_\_ [ ]  
 (A) positive  
 (B) Negative  
 (C) Physically realisable, passive driving point admittance  
 (D) Real
39. The positive real functions should be \_\_\_\_\_ [ ]  
 (A) Real (B)  $H(s) > 0$  (C) Both (D) None
40. If  $H(s)$  is positive real function then  $1/H(s)$  is \_\_\_\_\_ [ ]  
 (A) Positive real (B) Zero (C) Positive negative (D) Real
41. If  $Z(s)$  is positive real function then  $Y(s)$  is \_\_\_\_\_ [ ]  
 (A) Positive real (B) Zero (C) Positive negative (D) Real
42. Only \_\_\_\_\_ poles and zeros can exist on  $j\omega$  axis [ ]  
 (A) Positive real (B) Distinct (C) Positive negative (D) Real
43. If  $Z_1(s)$ ,  $Z_2(s)$  are positive real function then  $Z_1(s) + Z_2(s)$  is \_\_\_\_\_ [ ]  
 (A) Positive (B) Zero (C) Positive real (D) Real
44. Imittance functions are \_\_\_\_\_ [ ]  
 (A) Impedance (B) Admittance (C) Either A or B (D) None
45. R-H criteria is generally used for \_\_\_\_\_ [ ]  
 (A) Impedance (B) Stability (C) Both A or B (D) None
46. In RL circuit Impedance is \_\_\_\_\_ [ ]  
 (A)  $Z(s)=R-SL$  (B)  $Z(s)=R+SL$  (C)  $Z(s)=R/SL$  (D)  $Z(s)=R+L$
47. Admittance is inverse of \_\_\_\_\_ [ ]  
 (A) Impedance (B) Admittance (C) conductance (D) None
48. General formula for admittance  $Y(s)$  is \_\_\_\_\_ [ ]  
 (A)  $Y(s)=R+jX$  (B)  $Y(s)=R-jX$  (C)  $Y(s)=G+jB$  (D)  $Y(s)=R+L$
49. Units of Inductance \_\_\_\_\_ [ ]  
 (A) Farads (B) Ohms (C) mho (D) Henry
50. Units of Capacitance \_\_\_\_\_ [ ]  
 (A) Farads (B) Ohms (C) mho (D) Henry

## ANSWERS

1.C 2.C 3.D 4.B 5.D 6.C 7.D 8.D 9.A 10.B 11.A 12.D 13.A 14.A 15.A 16.B 17.A 18.A 19.C  
 20.A 21.C 22.A 23.A 24.A 25.D 26.A 27.B 28.A 29.B 30.C 31.D 32.D 33.C 34.A 35.A 36.A  
 37.B 38.C 39.C 40.A 41.A 42.B 43.C 44.C 45.B 46.B 47.A 48.C 49.D 50.A