Roll No	 				Question Booklet Number
O. M. R. Serial No.					

# M. Sc. (Electronics) (Second Semester) EXAMINATION, 2022-23

### NETWORK ANALYSIS AND SENTHESIS

Paper Code							
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Time : 1:30 Hours ]

Questions Booklet Series

Α

[ Maximum Marks : 75

#### **Instructions to the Examinee:**

- 1. Do not open the booklet unless you are asked to do so.
- 2. The booklet contains 100 questions.

  Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet.

  All questions carry equal marks.
- 3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

### परीक्षार्थियों के लिए निर्देश :

- प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
- 2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
- 3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा

  OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण

  प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या

  प्रश्न एक से अधिक बार छप गए हों या उसमें किसी

  अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(शेष निर्देश अन्तिम पृष्ठ पर)

(Remaining instructions on the last page)

## (Only for Rough Work)

	circuits with:			element ?			
	(A)	lumped parameters		(A) Constant current source			
	(B)	passive elements		(A) Constant current source			
	(C)	distributed parameters		(B) Constant voltage source			
	(D)	non-linear resistances	(C)	(C) Capacitance			
2.	The o	circuit whose properties are same in					
	eithe	r direction is known as:		(D) None of the above			
	(A)	unilateral circuit	6.	After how many time constants, the			
	(B)	bilateral circuit		•			
	(C)	irreversible circuit		transient part reaches more than			
	(D)	reversible circuit		99 percent of its final value ?			
3.	Whic	th of the following is not a non-linear		(A) 2			
	eleme	ent?	(11)	() =			
	(A)	Gas diode		(B) 3			
	(B)	Heater coil		(C) 4			
	(C)	Tunnel diode		(D) 5			
	(D)	Electric arc					
4.	Appl	ication of Norton's theorem to a	7.	Two ports containing no sources in their			
	circuit yields :			branches are called:			
(	(A)	equivalent current source and		(A) active ports			
		npedance in series		(1) deave poins			
	(B)	equivalent current source and		(B) passive ports			
		impedance in parallel		(C) on port			
	(C)	equivalent impedance	(	(D) three ports			
	(D)	equivalent current source		(D) unce ports			
ELC-2	201(N)	(3)		Set-A			

Kirchhoff's law is not application to 5. Which of the following is a bilateral

1.

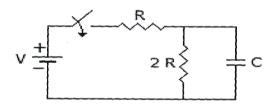
- 8. An RLC series circuit is underdamped.To make it overdamped, the value of R:
  - (A) has to be increased.
  - (B) has to be decreased.
  - (C) has to the increased to infinity.
  - (D) has to the reduced to zero.
- 9. In a minimum function:
  - (A) the degree of numerator and denominator are equal.
  - (B) the degree of numerator and denominator are unequal.
  - (C) the degree of numerator is one more than degree of denominator.
  - (D) the degree of numerator is one less than degree of denominator.
- 10.  $H(s) = \frac{V(s)}{I(s)} = \frac{s+4}{(s+3)^2}$  and i(t) is a

unit step, then V(t) in the steady state is given by:

- (A) 4/9
- (B) 4/3
- (C) 0
- (D) 1

- 11. For a transmission line open circuit and short circuit impedances are 20  $\Omega$  and 5  $\Omega$ , then characteristic impedance is :
  - (A)  $100 \Omega$
  - (B)  $20 \Omega$
  - (C)  $50 \Omega$
  - (D)  $10 \Omega$
- 12. An RLC series circuit has R = 8  $\Omega$ ,  $X_L = 8 \, \Omega$  and  $X_C = 8 \, \Omega$  its impedance is :
  - (A)  $8 + j16 \Omega$
  - (B)  $8 + i8 \Omega$
  - (C) 8 Ω
  - (D)  $18 \Omega$
- 13. Double integration of unit step function leads to :
  - (A) an impulse
  - (B) a parabola
  - (C) a ramp
  - (D) a doublet

- 14. A network has 10 nodes and 17 branches.The number of different node pairs are :
  - (A) 7
  - (B) 9
  - (C) 10
  - (D) 45
- 15. The time constant of the network in figure is:



- (A) RC
- (B) 3 RC
- (C) 2/3 RC
- (D) 3/2 RC
- 16. The function  $Z(s) = \frac{s(s^2 + a)}{(s^2 + 1)(s^2 + 16)}$ :
  - (A) is a reactance function.
  - (B) is an RC function.
  - (C) is an RL function.
  - (D) may be reactance function or RC function.

- 17. The poles of an RC function ............
  - (A) are simple and lie or negative real axis
  - (B) are simple and lie on  $\omega$ -axis
  - (C) must be complex conjugate
  - (D) may be anywhere on s-plane
- 18. Damping ratio =
  - (A) Actual resistance/Critical resistance
  - (B) Critical resistance/Actual resistance
  - (C) Critical resistance
  - (D) None of the above
- 19. For an R-C impedance function, the residues at all poles are :
  - (A) real
  - (B) imaginary
  - (C) real and positive
  - (D) positive
- 20. A two port networks is reciprocal if and only if:
  - (A)  $Z_{11} = Z_{22}$
  - (B) BC AD = -1
  - (C)  $Y_{12} = Y_{21}$
  - (D)  $h_{12} = h_{21}$

- 21. In terms of ABCD parameters, the image parameter  $Z_{11}$  is equal to :
  - (A) AC/BD
  - (B) BD/AC
  - (C) AB/CD
  - (D) AD/BC
- 22. A circuit said to be lumped when physical dimensions of all the component are :
  - (A) greater compared with wavelength of electromagnetic signal
  - (B) small compared with wavelength electromagnetic signal
  - (C) negligible compared with wavelength of electromagnetic signal
  - (D) equal compared with wavelength of electromagnetic signal
- 23. If a function Z(s) has a pole at infinity, then:
  - (A) the degrees of numerator and denominator are equal.
  - (B) the degree of numerator is one higher than that of denominator.
  - (C) the degree of denominator is one higher than that of numerator.
  - (D) the difference between the degree of numerator and denominator is 0 or 1.

- 24. A capacitor with initial charge  $q_0$  at  $t = 0^+$  acts as:
  - (A) current source
  - (B) voltage source
  - (C) short-circuit
  - (D) open-circuit
- 25. A system described by the following differential equation :

$$\frac{d^2y}{dt^2} + 3\frac{dy}{dt} + 2y = x(t)$$

is initially rest for input x(t) = 2u(t), the output y(t) is :

(A) 
$$(1-2e^{-t}+e^{-2t})u(t)$$

(B) 
$$(1+2e^{-t}+2e^{-2t})u(t)$$

(C) 
$$(0.5 + e^{-t} + 1.5e^{-2t}) u(t)$$

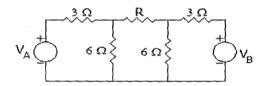
(D) 
$$(0.5 + 2e^{-t} + 2e^{-2t}) u(t)$$

26. Laplace transform of  $t^n$  is:

(A) 
$$\frac{\lfloor n \rfloor}{S^n + 1}$$

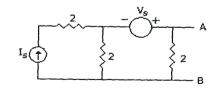
- (B) 0
- (C)  $\frac{\lfloor n+1 \rfloor}{S^n+1}$
- (D)  $\frac{\lfloor \underline{n} \rfloor}{S^n}$

- 27. In a circuit containing a complex impedance, maximum power transfer takes place when load is:
  - (A) pure resistance
  - (B) equal to the complex impedance
  - (C) conjugate complex of the circuit impedance
  - (D) None of the above
- 28. In figure, the current through R is 1 A when  $V_A=0$  and  $V_B=15$  V. If both  $V_A$  and  $V_B$  are :



increased by 15 V each, current through R will be:

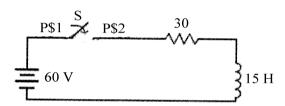
- (A) 1 A
- (B) 0.5 A
- (C) 3 A
- (D) 0.33 A
- 29. The Thevenin equivalent circuit to the left of AB has  $R_{eq}$ :



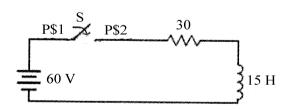
- (A)  $2\Omega$
- (B)  $4\Omega$
- (C)  $1\Omega$
- (D)  $3\Omega$

- 30. In terms of *z*-parameters, the condition for the network to be passive is :
  - (A)  $Z_{11} = Z_{22}$
  - (B)  $Z_{12} = Z_{21}$
  - (C)  $Z_{11} = 0$
  - (D)  $Z_{22} = 0$
- 31. Assertion (A): The number of basic loops is equal to number of links.
  Reason (R): The graph theory helps in choosing independent variables in circuit analysis:
  - (A) Both A and R are true and R is correct explanation of A.
  - (B) Both A and R are true and R is not the correct explanation of A.
  - (C) A is true but R is false.
  - (D) A is false but R is true.
- 32. A network contains linear resistors and ideal voltage sources. If values of all the resistors are doubled, then the voltage across each resistor is:
  - (A) half
  - (B) doubled
  - (C) increases by 4 times
  - (D) no change

- 33. A graph is a tree if and only if it:
  - (A) is completely connected.
  - (B) is planar.
  - (C) contains a act.
  - (D) is minimally connected.
- 34. A series R-L circuit with R = 30  $\Omega$  and L = 15 H has a constant voltage V = 60 V applied at t = 0 as shown in the figure. Determine the current (A) in the circuit at  $t = 0^+$ .



- (A) 1
- (B) 2
- (C) 3
- (D) 0
- 35. The expression of current obtained from the circuit is terms of differentiation from the circuit shown in fig. below:



- (A) di / dt + i = 4
- (B) di / dt + 2i = 0
- (C) di / dt + 2i = 4
- (D) di / dt 2i = 4

- 36. A tree with n nodes has:
  - (A) n/2 edges
  - (B) n edges
  - (C) n-1 edges
  - (D) n+1 edges
- 37. A graph in which all nodes are of equal degree is called :
  - (A) Multigraph
  - (B) Non-regular graph
  - (C) Regular graph
  - (D) Complete graph
- 38. Which type of network allow the physical separability of the network elements (resistors, inductors and capacitors) for analysis purpose?
  - (A) Lumped Networks
  - (B) Distributed Networks
  - (C) Unilateral Networks
  - (D) Bilateral Networks
- 39. How is the loop analysis different in application/functioning level as compared to Kirchhoff's law?
  - (A) Utilization of loop currents instead of branch currents for writing equations
  - (B) Capability of branch current to carry multiple networks
  - (C) Reduction in the number of unknowns for complex networks
  - (D) All of the above

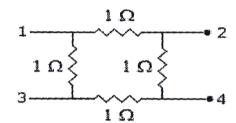
- 40. What should be done, if the dependent current and voltage sources are present in a circuit while applying 'Superposition Theorem'?
  - (A) Replace them by open circuit
  - (B) Replaced them by short circuit
  - (C) Keep in their original form without replacing by either open or short circuits
  - (D) None of the above
- 41. How many number of minimum end nodes or terminal nodes are involved in a tree, according to its properties?
  - (A) Only one
  - (B) Two
  - (C) Four
  - (D) Infinite
- 42. If a differential equation is said to be homogeneous, what would be the value of a forcing function?
  - $(A) \quad 0$
  - (B) 1
  - (C)  $\infty$
  - (D) -1

- 43. Which element behave as an open circuit especially under the consideration of d.c. quantities?
  - (A) Inductors
  - (B) Resistors
  - (C) Capacitors
  - (D) None of the above
- 44. Which among the following get/(s) cancelled under the resonance condition in a.c. circuits, if inductive and capacitive reactances are in parallel?
  - (A) Reactance
  - (B) Susceptance
  - (C) Resistance
  - (D) None of the above
- 45. Which type of impedance in asymmetrical network is estimated at a single pair of network terminals especially in the chain of infinite networks?
  - (A) Image impedance
  - (B) Iterative impedance
  - (C) Characteristic impedance
  - (D) None of the above

- 46. Where do the 'correctly terminated asymmetrical networks' show termination at both the ports of network?
  - (A) In image impedances
  - (B) In iterative impedances
  - (C) In characteristic impedance
  - (D) None of the above
- 47. Which unit is used for the measurement of an insertion loss?
  - (A) Neper
  - (B) Weber
  - (C) Ohm
  - (D) Watt
- 48. Which type of attenuators provide a fixed amount of attenuation by allowing the user to vary the attenuation in multiple steps?
  - (A) Ladder attenuators
  - (B) Variable-value attenuators
  - (C) Pad attenuators
  - (D) All of the above

- 49. How does the ' $\sigma$ ' of complex frequency variable appear in time domain?
  - (A) As a linear power
  - (B) As a reactive power
  - (C) As an exponential power
  - (D) As an iterative power
- 50. When a network function is expressed as a ratio of Laplace transforms of output to input variables of a system, then it is regarded as:
  - (A) System function
  - (B) Transfer function
  - (C) Both (A) and (B)
  - (D) None of the above
- 51. Which one of the following statements is not a property of RL driving point impedance?
  - (A) The first critical frequency at the origin is a zero.
  - (B) The last critical frequency is a pole.
  - (C) The impedance at  $S = \infty$  always less than the impedance at S = zero.
  - (D) The slope of the impedance curve is positive at all points.

- 52. An RC impedance function has a constant value at s = 0. The last elements in the first cauer synthesis:
  - (A) will be a capacitor
  - (B) may be R or C
  - (C) will be R
  - (D) will depend on the behaviour of function at  $s = \infty$
- 53. In figure, the ratio  $V_{24}/V_{23}$  is :



- (A)  $\frac{1}{3}$
- (B)  $\frac{2}{3}$
- (C)  $\frac{3}{4}$
- (D)  $\frac{4}{3}$
- 54. Two port *z*-parameter not exist for the circuit, if:
  - (A)  $\Delta z = 0$
  - (B)  $\Delta z = -1$
  - (C)  $\Delta z = 1$
  - (D) always exist

- 55. For a reactance function H(s), the slope  $dH(j\omega)/d\omega$  is:
  - (A) 0
  - (B) always positive
  - (C) always negative
  - (D) either 0 or positive
- 56. Which one is correct option, if initial conditions is not zero, for inductor (L) and capacitor (c)?

$$I_{L}(s) = \frac{i_{L}(0^{-})}{s} + \frac{1}{sL} V_{L}(s) I_{L}(s)$$

$$= \frac{1}{sL} \left[ i_{L}(0^{-}) + V_{L}(s) \right]$$

$$V_{C}(s) = \frac{V_{C}(0^{-})}{s} + \frac{1}{sC}i_{C}(s)$$

$$V_{C}(s) = \frac{1}{sC} [V_{C}(0^{-}) + I_{C}(s)]$$

- (A) 1, 3
- (B) 3, 2
- (C) 4, 1
- (D) 2, 4

57.	The roots of the odd and even parts of a	60. Co	nsider a function :		
	Hurwitz polynomial $P(s)$ lie on :		$Z(s) = \frac{5(s+1)(s+4)}{(s+3)(s+5)}$ Find the value of R <sub>1</sub> after performing the		
	(A) right half of s-plane				
	(B) lift half of <i>s</i> -plane				
	(C) jω-axis		t form of Foster method :		
	(C) Jw-axis	(A)	1/3		
	(D) σ-axis	(B)	2/3		
58.	If the ratio of the polynomial $P(s)$ and its	(C)	3/3		
	derivative gives a continued fraction	(D)	4/3		
	expansion with coefficients,				
	then the polynomial $P(s)$ is Hurwitz.	61. The	e ratio of transform voltage to the		
	(A) all negative	trai	nsform current is defined as of		
	(B) all positive	the	resistor.		
	(C) positive or negative	(A)	transform voltage		
	(D) positive and negative	(B)	transform current		
59.	The poles and zeros of driving point	(C)	transform impedance		
	impedance function and driving point	(D)	transform admittance		
	admittance function lie on :	62. The	The transform impedance of the capacito		
	(A) left half of s-plane only	is:			
	(B) right half of s-plane only	(4)	C		
	(C) left half of s-plane or imaginary	(A)	C		
	axis	(B)	1/C		
	(D) right halt of <i>s</i> -plane or imaginary	(C)	sC		
	axis	(D)	1/sC		

63. Consider a function:

$$Z(s) = \frac{5(s+1)(s+4)}{(s+3)(s+5)}$$

Find the value of  $L_1$  after performing the first form of Foster method :

- (A) 5/9
- (B) 4/9
- (C) 15/9
- (D) 2/9
- 64. The transform admittance of the inductor is:
  - (A) 1/sL
  - (B) *s*L
  - (C) 1/L
  - (D) L
- 65. The imaginary part of the complex frequency is called :
  - (A) radian frequency
  - (B) neper frequency
  - (C) sampling frequency
  - (D) angular frequency

66. Consider the admittance function,

$$Y(s) = \frac{((2s^2 + 16s + 30))}{(s^2 + 6s + 8)}$$

Determine the value of  $R_{\infty}$  after performing the second from of Foster method :

- (A) 3
- (B) 2
- (C) 1
- (D) 5
- 67. Consider the admittance function:

$$Y(s) = \frac{((2s^2 + 16s + 30))}{(s^2 + 6s + 8)}$$

Determine the value of  $L_2$  after performing the second from of Foster method:

- (A) 10
- (B) 1
- (C) 0
- (D) 5
- 68. The driving point impedance of a oneport reactive network is given by:

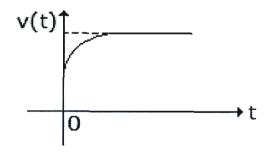
$$Z(s) = \frac{5(s^2 + 4)(s^2 + 25)}{s(s^2 + 16)}$$

After taking the partial fractions, find the coefficient of 1/s:

- (A) 25/4
- (B) 50/4
- (C) 100/4
- (D) 125/4

- 69. The function  $\frac{(s^2+1)(s^2+9)}{s(s^2+4)}$  is:
  - (A) RC function
  - (B) LC function
  - (C) RL function
  - (D) RC or RL function
- 70. If a two port network is represented by an equivalent T network the admittance of series arm in term of ABCD parameter is equal to:
  - (A) C
  - (B) 1/C
  - (C) (A-1)/B
  - (D) 1/B
- 71. At very low frequencies as series R-C circuit behaves as almost purely ............
  - (A) resistive
  - (B) inductive
  - (C) capacitive
  - (D) None of the above

- 72. Kirchhoff's current law is applied at ...........
  - (A) loops
  - (B) nodes
  - (C) Both loop and node
  - (D) None of the mentioned
- 73. Superposition theorem can applied only to circuits having:
  - (A) resistive
  - (B) passive elements
  - (C) non-linear elements
  - (D) linear bilateral elements
- 74. When a current source I is suddenly connected across a two terminal relaxed RC circuit at time t = 0, the voltage across the current source is figure. The RC circuit is:



- (A) a series combination of R and C
- (B) a parallel combination of R and C
- (C) a series combination of R and parallel combination of R and C
- (D) a pure capacitor

- 75. 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
- 76. Ideal voltage source have:
  - (A) Zero internal resistance
  - (B) infinite internal resistance
  - (C) Low value of current
  - (D) Large value of e.m.f.
- 77. Ideal current source have:
  - (A) Zero internal resistance
  - (B) Infinite internal resistance
  - (C) Low value of current
  - (D) Large value of e.m.f.
- 78. For a voltages source:
  - (A) Terminal voltage is equal to the sources e.m.f.
  - (B) Terminal voltage cannot exceed source e.m.f.
  - (C) Terminal voltage is always lower than source e.m.f.
  - (D) Terminal voltage is higher than source e.m.f.

- 79. Constant voltage source is:
  - (A) Active and bilateral
  - (B) Passive and bilateral
  - (C) Active and unilateral
  - (D) Passive and unilateral
- 80. The terminals across the source are ...... if an current source is to be neglected.
  - (A) Open-circuited
  - (B) Short-circuited
  - (C) Replaced by a capacitor
  - (D) Replaced by a source resistance
- 81. The transform admittance of the capacitor is:
  - (A) C
  - (B) 1/C
  - (C) sC
  - (D) 1/sC
- 82. In figure the total inductance of the circuit is:

- (A)  $L_1 + L_2$
- (B)  $L_1 + L_2 + M$
- (C)  $L_1 + L_2 + 2M$
- (D)  $L_1 + L_2 + M$

- 83. If the two ports are connected in cascade configuration, then which arithmetic operation should be performed between the individual transmission parameters in order to determine overall transmission parameters?
  - (A) Addition
  - (B) Subtraction
  - (C) Multiplication
  - (D) Division
- 84. 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
- 85. Which oscillations will be generated in time domain response, if complex conjugate poles are present with negative real part?
  - (A) Damped oscillations
  - (B) Undammed oscillations
  - (C) Sustained oscillations
  - (D) None of the above

- 86. If the value of  $(P_1 / P_2)$  in power ratio expressed in terms of dB is greater than unity, what does 'D' indicate in the network?
  - (A) Power loss
  - (B) Power gain
  - (C) Power stability
  - (D) Power saving
- 87. Which among the following is regarded as short circuit forward transfer admittance?
  - (A)  $y_{11}$
  - (B)  $y_{12}$
  - (C)  $y_{21}$
  - (D) y<sub>22</sub>
- 88. What is an ideal value of network function at poles ?
  - (A) Zero
  - (B) Unity
  - (C) Infinity
  - (D) Finite and non-zero

- 89. If the complex system function is analytic in nature, the points in *s*-plane are regarded as:
  - (A) Ordinary points
  - (B) Singular points
  - (C) Multiple points
  - (D) All of the above
- 90. If absolute potential of A is -8 V and that of B is -16 V,  $V_{AB}$  is equal to :
  - (A) 24 V
  - (B) 12 V
  - (C) 8 V
  - (D) 14 V
- 91. The expression of current in R-L circuit is:
  - (A)  $i = (V/R) (1 + \exp((R/L)t))$
  - (B)  $i = -(V/R) (1 \exp((R/L)t))$
  - (C)  $i = -(V/R) (1 + \exp((R/L)t))$
  - (D)  $i = (V/R) (1 \exp((R/L)t))$

- 92. Which of the following theorems is a manifestation of law of conservation of energy?
  - (A) Tellegen's theorem
  - (B) Reciprocity theorem
  - (C) Thevenin's theorem
  - (D) Norton's theorem
- 93. If two networks are cascaded, then:

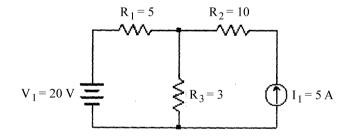
(A) 
$$[y] = [y_a] \cdot [y_b]$$

(B) 
$$[Z] = [Z_a] \cdot [Z_b]$$

(C) 
$$[a_a] = [b_b]$$

(D) 
$$[a_a] + [b_b]$$

94. In the circuit shown in fig., find the current through  $4\Omega$  resistor using Superposition theorem :



- (A) 4
- (B) 5
- (C) 6
- (D) 7

- 95. Which parameter should be essentially equal to the number of nodes in the network in accordance to the principle of duality?
  - (A) Total impedance
  - (B) Total admittance
  - (C) Number of meshes
  - (D) Number of voltage sources
- 96. When a network function is expressed as a ratio of Laplace transforms of output to input variables of a system, then it is regarded as:
  - (A) System function
  - (B) Transfer function
  - (C) Both (A) and (B)
  - (D) None of the above
- 97. Which element act as an independent variables in Y-parameters?
  - (A) Current
  - (B) Voltage
  - (C) Both (A) and (B)
  - (D) None of the above

- 98. Kirchhoff's current law is applicable to only:
  - (A) junction in a network
  - (B) closed loops in a network
  - (C) electric circuits
  - (D) electronic circuits
- 99. The circuit whose properties are same in either direction is known as:
  - (A) unilateral circuit
  - (B) bilateral circuit
  - (C) irreversible circuit
  - (D) reversible circuit
- 100. Which law plays a significant role of the loop analysis of the network?
  - (A) KCL
  - (B) KVL
  - (C) Law of Superposition Theorem
  - (D) None of the above

ELC-201(N) (18) Set-A

## (Only for Rough Work)

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction:

### Example:

#### Question:

Q.1 A  $\bigcirc$  C D 0.2 A B  $\bigcirc$  D

Q.3 A  $\bigcirc$  C D

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

- 5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
- 6. All answers are to be given on OMR Answer sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
- 7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
- 8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
- 9. There will be no negative marking.
- 10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
- 11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
- 12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.
- **Impt.**: On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is ny discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—
A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से
सही उत्तर छाँटना है। उत्तर को OMR आन्सर-शीट में
सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है:

### उदाहरण :

प्रश्न :

प्रश्न 1 (A) (C) (D)
प्रश्न 2 (A) (B) (D)
(C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

- 5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
- 6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
- ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ लिया जाये।
- 8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
- 9. निगेटिव मार्किंग नहीं है।
- 10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
- 11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
- 12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।