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

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

### NETWORK ANALYSIS AND SYNTHESIS

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Time : 1:30 Hours ]

### Questions Booklet Series

## A

[ Maximum Marks : 75

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

- 1. Do not open the booklet unless you are asked to do so.
- 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 तूरन्त बदल लें।

(शेष निर्देश अन्तिम पृष्ठ पर)

## (Only for Rough Work)

- 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
- 2. "Any number of current sources in parallel may be replaced by a single current source whose current is the algebraic sum of individual source currents and source resistance is the parallel combination of individual source resistances."

The above statement is associated with:

- (A) Thevenin's theorem
- (B) Millman's theorem
- (C) Maximum power transfer theorem
- (D) None of the above
- 3. Which of the following is non-linear circuit parameter?
  - (A) Inductance
  - (B) Condenser
  - (C) Wire wound resistor
  - (D) Transistor

- 4. The circuit whose properties are same in either direction is known as:
  - (A) unilateral circuit
  - (B) bilateral circuit
  - (C) irreversible circuit
  - (D) reversible circuit
- 5. Application of Norton's theorem to a circuit yields:
  - (A) equivalent current source and impedance in series
  - (B) equivalent current source and impedance in parallel
  - (C) equivalent impedance
  - (D) equivalent current source
- 6. After how many time constants, the transient part reaches more than 99 percent of its final value?
  - (A) 2
  - (B) 3
  - (C) 4
  - (D) 5
- 7. Two ports containing no sources in their branches are called ?
  - (A) active ports
  - (B) passive ports
  - (C) one port
  - (D) three ports

- 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 be increased to infinity
  - (D) has to be 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

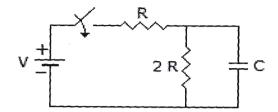
step, then V(t) in the steady state is given

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)  $8 + j \ 16 \ \Omega$
  - (B)  $8+j 8 \Omega$
  - (C)  $8\Omega$
  - (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 is :
  - (A) 7
  - (B) 9
  - (C) 10
  - (D) 45

15. The time constant of the network shown 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 network 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

- - (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 degrees 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) = 2 u(t), the output y(t) is :

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

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

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

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

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

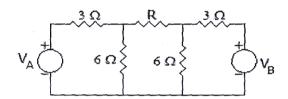
(A) 
$$\frac{n}{S^n + 1}$$

(B) (

(C) 
$$\frac{\left\lfloor n+1\right\rfloor}{S^n+1}$$

(D) 
$$\frac{n}{S^n}$$

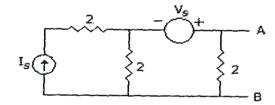
- 27. In a circuit containing a complex impedance, maximum power transfer takes place when load is:
  - (A) pure resistance
  - (B) equal to the complex impedance
  - (C) conjugate complex of the circuit impedance
  - (D) None of the above
- 28. In figure, the current through R is 1 A when  $V_A = 0$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



If both  $V_A$  and  $V_B$  are increased by I5 V each, current through R will be :

- (A) 1 A
- (B) 0.5 A
- (C) 3A
- (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 but 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) increase 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

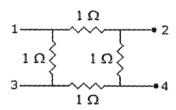
34.	Tree	38.	A gra	aph is a set of points, called:
	(A) is a connected graph		(A)	Nodes
	(B) with $n$ nodes contains $n-1$ edges		(B)	Edge
	(C) is a bipartite graph		(C)	Fields
	(D) All of the above		(D)	Lines
35.	The number of paths between any pair of		Grap	h consists of a:
	nodes in a tree on $n$ nodes is:		(A)	non-empty set of vertices
	(A) 0		(B)	empty set of vertices
	(B) 1		(C)	Both (A) and (B)
	(C) $(n-1)$		(D)	None of the above
	(D) <i>n</i>	40	Num	han of adoos incident with the wenter
36.	A tree with <i>n</i> nodes has :	40.		ber of edges incident with the vertex called:
	(A) $n/2$ edges			
	(B) <i>n</i> edges		(A)	Degree of a Graph
	(C) $n-1$ edges		(B)	Handshaking Lemma
	(D) $n + 1$ edges		(C)	Degree of a Vertex
	•		(D)	None of the above
37.	A graph in which all nodes are of equal	41.	Wha	t is Null Graph ?
Ċ	degree is called:			<u>-</u>
	(A) Multigraph		(A)	A null graph has no nodes
	(B) Non-regular graph		(B)	null graph has no edges
	(C) Regular graph		(C)	null graph has no odd vertex
	(D) Complete graph		(D)	null graph has no even vertex

- 42. If in a graph multiple edges between the same set of vertices are allowed, it is called:
  - (A) Hamiltonian Graphs
  - (B) Simple Graph
  - (C) Multi Graph
  - (D) Euler Graphs
- 43. According to the graph theory of loop analysis, how many equilibrium equations are required at a minimum level in terms of number of branches (*b*) and number of nodes (*n*) in the graph?
  - (A) n-1
  - (B) b + (n-1)
  - (C) b (n-1)
  - (D) b/n 1
- 44. How many fundamental cutsets will be generated for a graph with 'n' number of nodes?
  - (A) n + 1
  - (B) n-1
  - (C)  $n^2(n-1)$
  - (D) n/n-1

- - (A) Only complete incidence matrix
  - (B) Reduced incidence matrix and its transpose
  - (C) Cut-set matrix
  - (D) Tie-set matrix
- 46. What will be the value of a rectangular (complete incidence) matrix, if an associated branch is oriented towards the node?
  - (A) 1
  - (B) -1
  - (C) 0
  - (D) Not defined
- 47. How many number of minimum end nodes or terminal nodes are involved in a tree, according to its properties?
  - (A) 1
  - (B) 4
  - (C) 3
  - (D) 2

- 48. Which law plays a significant role in the loop analysis of the network?
  - (A) KCL
  - (B) KVL
  - (C) Law of Superposition Theorem
  - (D) None of the above
- 49. Which among the following conditions is true at the resonance ?
  - (A)  $X_c > X_L$
  - (B)  $X_c = X_L$
  - (C)  $X_c < X_L$
  - (D) None of the above
- - (A) Current at one port to voltage at other port
  - (B) Voltage at one port to current at other port
  - (C) Current at one port to current at other port
  - (D) Voltage at one point to voltage at other port

- 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 element 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)  $\frac{1}{3}$
- $(B) \quad \frac{2}{3}$
- (C)  $\frac{3}{4}$
- (D)  $\frac{2}{3}$

- 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 :
  - $(A) \quad 0$
  - (B) always positive
  - (C) always negative
  - (D) either 0 or positive
- 56. Which one is correct option, if initial condition is not zero, for inductor (L) and capacitor (C)?

$$\mathrm{I}_{\mathrm{L}}(s) = \frac{i_{\mathrm{L}}(0^-)}{s} + \frac{1}{s\mathrm{L}}\,\mathrm{V}_{\mathrm{L}}(s)$$

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

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

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

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

- 57. The roots of the odd and even parts of a Hurwitz polynomial P(s) lie on ......
  - (A) right half of s-plane
  - (B) left half of s-plane
  - (C) on  $i\omega$  axis
  - (D) on  $\sigma$  axis
- 58. If the ratio of the polynomial P (s) and its derivative gives a continued fraction expansion with ...... coefficients, then the polynomial P (s) is Hurwitz.
  - (A) all negative
  - (B) all positive
  - (C) positive or negative
  - (D) positive and negative
- 59. The poles and zeros of driving point impedance function and driving point admittance function lie on :
  - (A) left half of s-plane only
  - (B) right half of s-plane only
  - (C) left half of *s*-plane or on imaginary axis
  - (D) right half of s-plane or on imaginary axis

60.	Consider	a function	:

$$Z(s) = 5(s+1)(s+4)/(s+3)(s+5).$$

Find the value of  $R_1$  after performing the first form of Foster method.

- (A) 1/3
- (B) 2/3
- (C) 3/3
- (D) 4/3
- 61. The ratio of transform voltage to the transform current is defined as ...... of the resistor.
  - (A) transform voltage
  - (B) transform current
  - (C) transform impedance
  - (D) transform admittance
- 62. The transform impedance of the capacitor is :
  - (A) C
  - (B) 1/C
  - (C) sC
  - (D) 1/sC

#### 63. Consider a function:

$$Z(s) = 5(s+1)(s+4)/(s+3)(s+5).$$

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

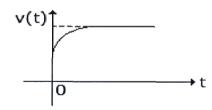
- 66. Consider the admittance function,  $Y(s) = (2s^2 + 16s + 30)/(s^2 + 6s + 8) \,.$  Determine the value of  $R_{\infty}$  after performing the second form of Foster method.
  - (A) 3
  - (B) 2
  - (C) 1
  - (D) 5
- 67. Consider the admittance function,  $Y(s) = (2s^2 + 16s + 30)/(s^2 + 6s + 8).$  Determine the value of  $L_2$  after

performing the second form of Foster method.

- (A) 10
- (B) 1
- (C) 0
- (D) 5
- 68. The driving point impedance of a one-port reactive network is given by  $Z(s) = 5(s^2 + 4)(s^2 + 25)/s(s^2 + 16).$  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
- - (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 be applied only to circuits having:
  - (A) resistive elements
  - (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 shown in figure. The RC circuit is:

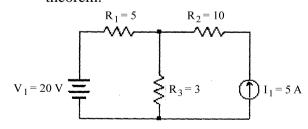


- (A) a series combination of R and C
- (B) a parallel combination of R and C
- (C) a series combination of R and parallel combination of R and C
- (D) a pure capacitor

- - (A) System function
  - (B) Transfer function
  - (C) Both (A) and (B)
  - (D) None of the above
- 76. What is 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
- 77. What is the potential value of a reference or datum node used in the node analysis of a network?
  - (A) Zero
  - (B) Unity
  - (C) Greater than zero but less than infinity
  - (D) Unpredictable

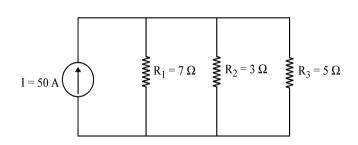
- 78. Which among the following is also regarded as 'Dual of Thevenin's Theorem'?
  - (A) Norton's Theorem
  - (B) Superposition Theorem
  - (C) Millman's Theorem
  - (D) Maximum Power Transfer

    Theorem
- 79. 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
- 80. In the circuit shown, find the current through 4  $\Omega$  resistor using Superposition theorem.



(A) 4

- (B) 5
- (C) 6
- (D) 7
- 81. Which of the following is not an example of a linear element?
  - (A) Resistor
  - (B) Thermistor
  - (C) Inductor
  - (D) Capacitor
- 82. Determine the current in all resistors in the circuit shown below.



- (A) 2A, 4A, 11A
- (B) 5A, 4.8A, 9.6A
- (C) 9.3A, 20.22A, 11A
- (D) 10.56A, 24.65A, 14.79A

- 83. 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)  $[a_a] + [b_b]$
- 84. 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)  $L_1 + L_2 + 2M$
- 85. For a given voltage four heating coils will give maximum heat when connected:
  - (A) in parallel
  - (B) in series
  - (C) with two parallel pairs in series
  - (D) with one pair in parallel and the other two in series

- 86. 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
- 87. 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)  $i = (V/R) (1 \exp((R/L)t))$
- 88. Kirchhoffs Law is applicable to:
  - (A) Passive network only
  - (B) A. C. Circuits
  - (C) D. C. Circuits
  - (D) Both (B) and (C)

89.	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
- 8 V (C)
- (D) 14 V
- 90. Consider the admittance function,  $Y(s) = ((2s^2 + 16s + 30))/(s^2 + 6s + 8).$ Determine the value of R<sub>2</sub> after performing the second form of Foster method.
  - (A) 1
  - (B) 2
  - (C) 3
  - (D) 4
- 91. If the complex system function is analytic in nature, the points in s-plane are regarded as:
  - Ordinary points (A)
  - (B) Singular points
  - Multiple points (C)
  - (D) All of the above

- 92. Which among the following belong/s to the category of critical frequency?
  - (A) Poles
  - (B) Zeros
  - (C) Both (A) and (B)
  - (D) None of the above
- 93. What is an ideal value of network function at poles?
  - Zero (A)
  - (B) Unity
  - (C) Infinity
  - (D) Finite and non-zero
- 94. Which elements act as an independent variables in Y-parameters?
  - (A) Current
  - (B) Voltage
  - Both (A) and (B) (C)
  - None of the above (D)

- 95. 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>
- 96. What would be the nature of roots for undamped type of circuits with sustained oscillations?
  - (A) Purely imaginary
  - (B) Real, equal and negative
  - (C) Complex conjugate with negative real part
  - (D) Real, unequal and negative
- 97. 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

- 98. Which oscillations will be generated in the time domain response, if complex conjugate poles are present with negative real part?
  - (A) Damped oscillations
  - (B) Undamped oscillations
  - (C) Sustained oscillations
  - (D) None of the above
- 99. 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
- 100. 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

## (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) (C) (D) (Q. 2 (A) (B) (D) (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)

 (A)
 (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।