

Roll No. ....

Question Booklet Number

O. M. R. Serial No.

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**M. Sc. (Second Semester)**  
**(NEP) EXAMINATION, 2025-26**

**PHYSICS**

**(Statistical Mechanics)**

Paper Code							
B	0	1	0	8	0	3	T

Questions Booklet  
Series

**A**

Time : 1:30 Hours ]

[ 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 :**

1. 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।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

***(Only for Rough Work)***

1. In a system of non-interacting particles, which distribution law applies to particles with half-integral spin that obey the Pauli Exclusion Principle ?
  - (A) Maxwell-Boltzmann statistics
  - (B) Bose-Einstein statistics
  - (C) Fermi-Dirac Statistics
  - (D) None of the above
2. Which ensemble is characterized by a fixed number of particles  $N$ , fixed volume  $V$ , and fixed temperature  $T$  ?
  - (A) Canonical ensemble
  - (B) Grand canonical ensemble
  - (C) Micro canonical ensemble
  - (D) All of the above
3. The entropy of a system in statistical mechanics is given by Boltzmann's formula  $S = k_B \ln \Omega$ . What does  $\Omega$  represent ?
  - (A) Total energy of the system.
  - (B) Partition function of the system.
  - (C) Number of microstates consistent with the macrostate.
  - (D) Probability of the most likely state.
4. The energy associated with each degree of freedom for a gas molecule is  $(1/2)k_B T$ . What is the name of the theorem ?
  - (A) Equipartition Theorem
  - (B) Liouville's Theorem
  - (C) Virial Theorem
  - (D) Fluctuation-Dissipation Theorem
5. Which of the following conditions leads to the Bose-Einstein Condensation (BEC) ?
  - (A) High temperature and low density
  - (B) Low temperature and high density
  - (C) At absolute zero particles with half integral spin
  - (D) None of the above
6. For blackbody radiation, Wien's Displacement Law relates the peak wavelength  $\lambda$  to the temperature  $T$  as :
  - (A)  $\lambda \propto T^4$
  - (B)  $\lambda \propto T^{-1}$
  - (C)  $\lambda \propto T$
  - (D)  $\lambda \propto e^{-T}$
7. Which of the following is an intensive property of a thermodynamic system ?
  - (A)  $T$
  - (B)  $S$
  - (C)  $U$
  - (D)  $V$
8. For a system of  $N$  classical distinguishable particles in a volume  $V$ , if each particle has a single-particle partition function  $z$ , the total partition function  $Z$  is :
  - (A)  $Z = Nz$
  - (B)  $Z = z^N$
  - (C)  $Z = \ln(z^N)$
  - (D)  $Z = e^z$

9. For a system in the canonical ensemble, the Helmholtz free energy  $F$  is related to the partition function  $Z$  by which expression ?
- (A)  $F = k_B T \ln Z$   
 (B)  $F = -k_B T \ln Z$   
 (C)  $F = Z e^{-\beta E}$   
 (D)  $F = e^{-\beta E}$
10. In the grand canonical ensemble, which parameters are allowed to vary ?
- (A) Temperature and Volume  
 (B) Energy and number of particles  
 (C) Chemical potential and Temperature  
 (D) Pressure and Temperature
11. For a photon gas (blackbody radiation), the chemical potential  $\mu$  is equal to :
- (A) Infinity  
 (B) Zero  
 (C)  $k_B T$   
 (D) None of the above
12. The 'Ultraviolet Catastrophe' is :
- (A) Absorption of UV light by the ozone layer  
 (B) Failure of the Planck's law at low frequency  
 (C) Prediction by classical physics that a blackbody would emit infinite energy at short wavelength  
 (D) The shift of peak wavelength with temperature
13. In a 1D harmonic oscillator at high temperature, what is the average total energy according to the Equipartition Theorem ?
- (A)  $k_B T$   
 (B)  $2k_B T$   
 (C)  $(1/2) k_B T$   
 (D)  $(3/2) k_B T$
14. What is the value of the Fermi function  $f(E)$  when the energy  $E$  is exactly equal to the chemical potential  $\mu$  ?
- (A) 0  
 (B) 1  
 (C) 0.5  
 (D)  $1/e$
15. In the limit of high temperatures ( $T$  tends to infinity), both Fermi-Dirac and Bose-Einstein distributions converge to :
- (A) Planck's distribution  
 (B) Maxwell-Boltzmann distribution  
 (C) Rayleigh-Jeans law  
 (D) None of the above
16. For a system of  $N$  particles, the microcanonical ensemble assumes that all accessible microstates are :
- (A) Equally probable  
 (B) Occupied by at least one particle  
 (C) Exponentially distributed  
 (D) Independent of the energy

17. Which law states that the total energy radiated per unit surface area of a blackbody is proportional to  $T^4$  ?  
 (A) Wein's displacement law  
 (B) Stefan-Boltzmann law  
 (C) Planck's law  
 (D) Rayleigh Jeans law
18. If the limit  $T$  tends to infinity, the probability of occupancy of every energy state in a finite system becomes :  
 (A) Zero  
 (B) Equal for all states  
 (C) Concentrated in the ground state  
 (D) Infinite
19. Which of the following statistics applies to liquid Helium-4 at very low temperatures ?  
 (A) Ising  
 (B) B-E  
 (C) F-D  
 (D) M-B
20. The Stirling approximation,  $\ln N! \approx N \ln N - N$ , is valid under which condition ?  
 (A)  $N \gg 1$   
 (B)  $N$  is an even number  
 (C)  $N$  is a prime number  
 (D)  $N \rightarrow 0$
21. The ensemble where the chemical potential  $\mu$  is the 'driving' parameter for particle exchange is :  
 (A) Microcanonical ensemble  
 (B) Canonical ensemble  
 (C) Grand canonical ensemble  
 (D) All of the above
22. For a classical ideal gas, the internal energy  $U$  depends only on :  
 (A)  $T$   
 (B)  $V$   
 (C)  $P$   
 (D)  $S$
23. In the canonical ensemble, the probability  $P_i$  of finding the system in a microstate with energy  $E_i$  is proportional to :  
 (A)  $1/E_i$   
 (B)  $\ln E_i$   
 (C)  $e^{-(E_i/kT)}$   
 (D)  $E_i$
24. In the Ising model, the interaction energy between two neighboring spins  $s_i$  and  $s_j$  is typically written as :  
 (A)  $+Js_i s_j$   
 (B)  $-Js_i s_j$   
 (C)  $-J(s_i + s_j)$   
 (D)  $J/(s_i s_j)$
25. In a grand canonical ensemble, the quantity  $\phi = -k_B T \ln Z$  (where  $Z$  is the grand partition function) is equal to :  
 (A)  $G - TS$   
 (B)  $TS$   
 (C)  $-PV$   
 (D)  $U - TS$
26. For a non-relativistic gas in 3D, how does the Density of States  $g(E)$  depend on energy  $E$  ?  
 (A)  $g(E) \propto E^{1/2}$   
 (B)  $g(E) \propto E^{-1/2}$   
 (C)  $g(E) \propto E$   
 (D)  $g(E) = \text{constant}$

27. Which of the following describes a 'first-order' phase transition ?
- (A) A discontinuity in the heat capacity  
 (B) A continuous change in the first derivative of the Gibbs free energy  
 (C) A discontinuity in the first derivative of the Gibbs free energy.  
 (D) None of the above
28. In the Fermi-Dirac distribution, the term  $\beta(E - \mu)$  in the exponent is effectively a measure of :
- (A) The particle density  
 (B) The strength of the Pauli exclusion principle  
 (C) The energy of the state relative to the chemical potential in units of  $k_B T$   
 (D) The speed of the particles.
29. A system is in equilibrium with a heat bath. If the volume is increased isothermally, the number of accessible microstates  $\Omega$  will :
- (A) Decrease  
 (B) Increase  
 (C) Remain same  
 (D) Become zero
30. The 'Mean Field Theory' approximation in the Ising model assumes that :
- (A) Spins do not interact at all  
 (B) The temperature is always absolute zero.  
 (C) Spins can take any continuous value  
 (D) Each spin interacts with an average field produced by all other spins.
31. In 3D, the transition temperature  $T_c$  for Bose-Einstein Condensation depends on the particle density  $n$  as :
- (A)  $T_c \propto n^{2/3}$   
 (B)  $T_c \propto n^2$   
 (C)  $T_c \propto n^{1/3}$   
 (D)  $T_c \propto n$
32. The electronic heat capacity of a metal at low temperatures is proportional to  $T$ . This linear dependence is a direct consequence of :
- (A) Maxwell-Boltzmann limit of the electron gas.  
 (B) Due to constant density of states near the fermi level.  
 (C)  $T^3$  dependence of lattice vibrations  
 (D) None of the above
33. For a system of  $N$  particles, the relationship between the entropy  $S$  and the partition function  $Z$  in the canonical ensemble is :
- (A)  $S = k_B T \ln Z$   
 (B)  $S = \partial Z / \partial T$   
 (C)  $S = k_B \ln Z + U/T$   
 (D)  $S = Z/T$
34. In the microcanonical ensemble, if the number of states  $\Omega(E)$  is proportional to  $E^n$ , the temperature  $T$  of the system varies as :
- (A)  $E$   
 (B)  $E^n$   
 (C)  $E^2$   
 (D) constant

35. In the context of the Ising model, the 'Critical Exponents' describe :
- (A) The number of nearest neighbours in the lattice
  - (B) The strength of the magnetic field
  - (C) The exact temperature at which the transition occurs
  - (D) Behavior of physical quantities like ( $C_v$  or  $\chi$ ) near the critical temperature.
36. The chemical potential of a photon gas is zero because :
- (A) Photons have zero rest mass
  - (B) Temperature of photon gas is always high
  - (C) No constraint on the number of photons at equilibrium
  - (D) Photons follow B-E statistics
37. In the context of the Gibbs Paradox, what does 'indistinguishability' imply about a group of identical particles ?
- (A) The particles must be in the same energy level
  - (B) Swapping the positions of two particles does not results in a new physical microstate
  - (C) Both (A) and (B)
  - (D) The particles do not interact with one another
38. For a system of fermions at absolute zero, all energy levels are filled up to a specific maximum energy. This energy level is called the :
- (A) Zero-point energy
  - (B) Fermi energy
  - (C) Chemical potential at high T
  - (D) None of the above
39. For a paramagnetic material, the magnetic susceptibility  $\chi$  at high temperatures follows Curie's Law,  $\chi \propto 1/T$ . This breaks down when :
- (A) The material is a metal
  - (B) Material undergoes phase transition
  - (C) The external magnetic field is removed
  - (D) Temperature becomes very high
40. The Maxwell-Boltzmann distribution is often described as the 'classical limit' of quantum statistics. This limit is reached when :
- (A) Particles are massless
  - (B) The temperature is near absolute zero.
  - (C) The density of gas is extremely high
  - (D) The occupancy of each quantum state is much less than one.
41. According to the Third Law of Thermodynamics, what happens to the entropy of a system as its temperature approaches absolute zero ?
- (A) It becomes equal to the pressure times volume.
  - (B) It increases rapidly
  - (C) It approaches a minimum constant value, often zero for a perfect crystal.
  - (D) None of the above

42. For a system of  $N$  particles moving in 3 dimensions, how many dimensions does the corresponding phase space have ?
- (A)  $3N$   
 (B)  $6N$   
 (C)  $N^2$   
 (D)  $6N^2$
43. The 'Equipartition Theorem' fails at low temperatures because :
- (A) The particles start interacting with each other  
 (B) The gas becomes relativistic  
 (C) The volume of the system becomes too small  
 (D) The energy levels becomes discrete and the spacing becomes larger than  $k_B T$ .
44. Which of the following are not Fermions ?
- (A) Protons  
 (B) Electrons  
 (C) Phonons  
 (D) Neutrinos
45. What happens to the Boltzmann factor  $e^{-\beta E}$  as the temperature  $T$  increases ?
- (A) It becomes zero  
 (B) It decreases linearly  
 (C) It approaches zero  
 (D) It approaches one
46. In classical statistical mechanics, a single point in phase space represents what ?
- (A) A microstate  
 (B) A macrostate  
 (C) An ensemble  
 (D) A thermodynamic potential
47. Which pairs of variables are used to construct the coordinate axes of phase space ?
- (A) Energy and time  
 (B) Velocity and time  
 (C) Position and velocity  
 (D) Position and momentum
48. What explicitly defines the 'accessibility' of a microstate in the microcanonical ensemble ?
- (A) It must have fixed energy, volume and number of particles of the system  
 (B) It must minimize the entropy of the system  
 (C) Phase space volume less than  $h^3$   
 (D) None of the above
49. Which of the following is an example of a macroscopic property used to define a 'macrostate' ?
- (A) Specific momentum of individual molecule  
 (B) Position of each molecule  
 (C) Total pressure and temperature of a gas  
 (D) Both (A) and (B)
50. In quantum statistical mechanics, what fundamental constant determines the minimum possible volume of the cells ?
- (A) Planck's constant,  $h$   
 (B) Universal Gravitational Constant,  $G$   
 (C) Boltzmann Constant,  $k_B$   
 (D) Speed of light,  $c$

51. The postulate of 'equal a priori probabilities' assumes that nature does not play favorites. For an isolated system, this means :
- (A) All accessible microstates that match the system's fixed energy are equally likely to be found.
- (B) The system will always stay trapped in its initial microstate.
- (C) Particles will eventually all group together in the center of the volume.
- (D) None of the above
52. In quantum statistical mechanics, what is the minimum volume of one such elementary cell for a single particle with 3 spatial degrees of freedom ?
- (A)  $h$
- (B)  $h^2$
- (C)  $2h$
- (D)  $h^3$
53. In the standard Ising model, what are the allowed values for the discrete spin variables  $s_i$  at each lattice site ?
- (A) Any real number between  $-1$  and  $+1$
- (B) Discrete values of  $+1$  or  $-1$
- (C) Zero
- (D) None of the above
54. In flipping of three coins, which of the following statements represents a macrostate rather than a microstate ?
- (A) Coin 1 is Tails, Coin 2 is Tails, Coin 3 is Tails.
- (B) Coin 1 is Heads, Coin 2 is Tails, Coin 3 is Heads.
- (C) Getting exactly two Heads and one Tails overall.
- (D) All of the above
55. Which physical quantity remain constant in all the three ensemble: Microcanonical, Canonical and Grand canonical ensemble ?
- (A) Entropy
- (B) Energy
- (C) Volume
- (D) Number of particles
56. Which of the condition follows the F-D statistics ?
- (A)  $n_i \neq g_i$
- (B)  $n_i \geq g_i$
- (C)  $n_i \leq g_i$
- (D) None of the above
57. Number of particles is not limited in the following statistics :
- (A) F-D
- (B) M-B
- (C) B-E
- (D) Both (B) and (C)
58. In B-E statistics, particles have spin :
- (A) Integer
- (B) Half integer
- (C) Both (A) and (B)
- (D) None of the above

59. Boltzmann entropy formula is :
- (A)  $S = k_B \ln(\Omega)$
  - (B)  $S = k_B$
  - (C)  $S = \Omega$
  - (D) None of the above
60. Which of the following statement is NOT correct for Fermions ?
- (A) They have half integer spin
  - (B) Obey Pauli exclusion principle
  - (C) Follow F-D statistics
  - (D) Their wave functions are symmetric in nature
61. Which of the following sets of parameters are constant in microcanonical ensemble ?
- (A) N, P, T
  - (B) N, V, E
  - (C) N, V, T
  - (D)  $\mu$ , V, T
62. Weiss theory is related to :
- (A) Paramagnetic material
  - (B) Ferromagnetic material
  - (C) Diamagnetic material
  - (D) None of the above
63. At the Curie temperature ( $T_c$ ), the spontaneous magnetization of ferromagnet becomes :
- (A) Zero
  - (B) Equal to the external field
  - (C) Infinite
  - (D) None of the above
64. According to Weiss theory, primary cause of spontaneous magnetization in ferromagnetic materials is :
- (A) The existence of an internal molecular field proportional to magnetization
  - (B) Thermal agitation at absolute zero temperature
  - (C) Presence of impurities within the crystal lattice.
  - (D) None of the above
65. Phase point in a phase space represent :
- (A) The temperature of the system
  - (B) Average energy of a thermodynamic ensemble
  - (C) A specific microstate of the entire system at an instant.
  - (D) None of the above
66. In ensemble, the systems play the same role as molecule do in a :
- (A) Gas
  - (B) Liquid
  - (C) Solid
  - (D) None of the above
67. What is the primary limitation of Landau theory when compared to exact results in lower dimensions ?
- (A) It fails to account for the role of symmetry.
  - (B) It neglects the effect of critical fluctuations.
  - (C) It cannot be applied to magnetic systems
  - (D) None of the above

68. What is the primary role of the order parameter in Landau theory ?
- To calculate the external pressure applied to the system
  - To measure the total mass of the sample
  - To distinguish between the order and disordered phases of a system
  - None of the above
69. Which of the following particles follows B-E statistics ?
- Photons
  - Electrons
  - Protons
  - Neutrinos
70. Which of the following is a primary requirement for a system to follow quantum statistics instead of classical M-B statistics ?
- Particles must be indistinguishable
  - Particles must be distinguishable.
  - The system at very high temperature
  - Asymmetric wave function
71. Which statistics describe a gas of electrons in a metal ?
- M-B
  - B-E
  - F-D
  - All of the above
72. What is the physical interpretation of the partition function  $Z$  ?
- It represents the total energy of the system
  - It represent the volume of the phase space that system cannot enter.
  - It is a measure of the number of accessible microstate weighted by their Boltzmann factor.
  - None of the above
73. For a two level system with energies 0 and  $\epsilon$ , what is the partition function  $Z$  ?
- $2e^{-\beta\epsilon}$
  - $1 + e^{-\beta\epsilon}$
  - $1 - e^{-\beta\epsilon}$
  - $e^{-\beta\epsilon}$
74. At very low temperature limit, if a system has  $g$  degeneracy in ground state and few excited state than what happen to the partition function  $Z$  ?
- $Z$  becomes zero
  - $Z$  remains equal to  $g$
  - $Z$  approaches infinity
  - $Z$  approaches the total number of available states.
75. The parameter  $\beta$  used in the partition function is defined as :
- $k_B T$
  - $1/k_B T$
  - $\ln(T)$
  - $k_B/T$

76. At very low temperature ( $T \rightarrow 0$ ), the partition function  $Z$  is dominated by which state ?
- (A) The highest energy state  
 (B) The ground state  
 (C) All states contribute equally  
 (D) None of the above
77. In the context of statistical mechanics, what does it mean for two particles to be 'identical' ?
- (A) They were created at the exact same moment in time  
 (B) They have exactly the same mass, charge, and spin.  
 (C) They are both moving at the same velocity.  
 (D) They occupy the same position in space at the same time.
78. The correction factor  $1/N!$  was introduced by Gibbs to account for which concept ?
- (A) The attraction between molecules.  
 (B) The volume of the particles  
 (C) The indistinguishability of particles  
 (D) The speed of light
79. In the formula  $S = k_B \ln \Omega$ , what does  $\Omega$  represent ?
- (A) The wavelength of the particles  
 (B) The total work done by the system  
 (C) The weight of the system  
 (D) The number of microstates corresponding to a macrostate.
80. How many possible microstates exist for a system of  $N$  ising spins ?
- (A)  $N^2$   
 (B)  $N!$   
 (C)  $e^N$   
 (D)  $2^N$
81. Which of the following represents the fundamental statement of Liouville's theorem regarding the phase-distribution function  $\rho$  ?
- (A)  $\frac{d\rho}{dt} = 0$   
 (B)  $\frac{d\rho}{dv} = 0$   
 (C)  $\rho = 0$   
 (D)  $\Delta\rho = 0$
82. Why is the Stirling formula essential in the definition of Boltzmann's entropy relation ?
- (A) To calculate velocity of molecules  
 (B) To calculate the exact value of  $0!$   
 (C) To make the entropy expression extensive (proportional to  $N$ )  
 (D) To prove Heisenberg's Uncertainty Principle

83. The Sackur-Tetrode equation used to calculate the entropy of which system ?
- (A) Black body radiation cavity
  - (B) Monoatomic ideal gas
  - (C) System of interacting fermions
  - (D) Crystal lattice
84. “When particles are treated as distinguishable, than entropy is not extensive property”. This statement is called as :
- (A) Equipartition theorem
  - (B) Gibbs paradox
  - (C) Liouville’s theorem
  - (D) Uncertainty principle
85. The fluctuation-dissipation theorem relates the linear response of a system to :
- (A) The total energy of the system
  - (B) The absolute zero of temperature
  - (C) Thermal fluctuation at equilibrium
  - (D) None of the above
86. Which of the particles follow F-D statistics ?
- (A) Photons
  - (B) Cooper pairs
  - (C) Alpha particles
  - (D) Electrons
87. The degeneracy ( $g_i$ ) of an energy level  $E_i$  refers to :
- (A) Number of particles currently in that level
  - (B) Number of distinct quantum states that have the same energy
  - (C) The total energy of the ground state
  - (D) None of the above
88. Phase space has how many dimensions ?
- (A) 1D
  - (B) 2D
  - (C) 3D
  - (D) 6D
89. Particles that obey M-B statistics are :
- (A) Identical and indistinguishable
  - (B) Identical and distinguishable
  - (C) Phonons
  - (D) Photons
90. The number of ways two particles arranged in three phase cells using B-E statistics is :
- (A) 3
  - (B) 6
  - (C) 9
  - (D) 27
91. Pauli exclusion principle is followed by :
- (A) M-B statistics
  - (B) F-D statistics
  - (C) B-E statistics
  - (D) None of the above

92. Which statistics is used to deduce the Planck's law ?
- (A) F-D  
(B) B-E  
(C) M-B  
(D) None of the above
93. 4 particles are to be distributed in two cells. Find out the number of microstates if there is no restriction on the number of particles that can go into either of the cells ?
- (A) 2  
(B) 4  
(C) 16  
(D) 256
94. Due to Pauli exclusion principle, the number of microstates will :
- (A) Remains same  
(B) Increases  
(C) Decreases  
(D) Can be increased or decreased
95. What is the fundamental assumption in statistical mechanics about the system in equilibrium ?
- (A) Constant energy  
(B) Maximum temperature  
(C) Maximum entropy  
(D) Minimum entropy
96. The postulate of equal a priori probabilities in statistical mechanics is equivalent to ..... law of thermodynamics.
- (A) Zeroth  
(B) First  
(C) Second  
(D) Third
97. During phase transition the Gibbs free energy becomes :
- (A) Maximum  
(B) Discontinuous  
(C) Continuous  
(D) Minimum
98. Phase transitions in Statistical mechanics is :
- (A) Change of state from solid to liquid  
(B) Change of state paramagnetic to ferromagnetic  
(C) Change in temperature due to heat exchange  
(D) An abrupt change of thermodynamic properties of a system at critical conditions
99. What happens to the entropy of a system at absolute zero temperature ?
- (A) Increases  
(B) Decreases  
(C) Zero  
(D) Fluctuates between different states
100. Which of the following properties is 'Extensive' ?
- (A)  $\mu$   
(B) U  
(C) T  
(D) P

***(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)  
Q. 3 (A) ● (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 any 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 छँटना 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)  
प्रश्न 3 (A) ● (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।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ 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।