UNIVERSITY OF MYSORE

Ph.D. Entrance Examination, November - 2020

SUBJECT CODE : 5 0

QUESTION BOOKLET NO.
504621

Entrance Reg. No.						

QUESTION BOOKLET

(Read carefully the instructions given in the Question Booklet)

SUBJECT : PHYSICS

MAXIMUM MARKS : 100 **MAXIMUM TIME : THREE HOURS**

(Including initial 10 minutes for filling O.M.R. Answer sheet)

INSTRUCTIONS TO THE CANDIDATES

1. The sealed questions booklet containing 50 questions enclosed with O.M.R. Answer Sheet is given to you.
2. Verify whether the given question booklet is of the same subject which you have opted for examination.
3. Open the question paper seal carefully and take out the enclosed O.M.R. Answer Sheet outside the question booklet and fill up the general information in the O.M.R. Answer sheet. If you fail to fill up the details in the form of alphabet and signs as instructed, you will be personally responsible for consequences arising during scoring of your Answer Sheet.
4. During the examination:
   a) Read each question carefully.
   b) Determine the Most appropriate/correct answer from the four available choices given under each question.
   c) Completely darken the relevant circle against the Question in the O.M.R. Answer Sheet. For example, in the question paper if "C" is correct answer for Question No.8, then darken against Sl. No.8 of O.M.R. Answer Sheet using Blue/Black Ball Point Pen as follows:

Question No. 8. Ⓐ Ⓑ ● Ⓓ (Only example) (Use Ball Pen only)

5. Rough work should be done only on the blank space provided in the Question Booklet. Rough work should not be done on the O.M.R. Answer Sheet.
6. If more than one circle is darkened for a given question, such answer is treated as wrong and no mark will be given. See the example in the O.M.R. Sheet.
7. The candidate and the Room Supervisor should sign in the O.M.R. Sheet at the specified place.
8. Candidate should return the original O.M.R. Answer Sheet and the university copy to the Room Supervisor after the examination.
9. Candidate can carry the question booklet and the candidate copy of the O.M.R. Sheet.
10. The calculator, pager and mobile phone are not allowed inside the examination hall.
11. **If a candidate is found committing malpractice, such a candidate shall not be considered for admission to the course and action against such candidate will be taken as per rules.**

INSTRUCTIONS TO FILL UP THE O.M.R. SHEET

1. There is only one most appropriate/correct answer for each question.
2. For each question, only one circle must be darkened with BLUE or BLACK ball point pen only. Do not try to alter it.
3. Circle should be darkened completely so that the alphabet inside it is not visible.
4. Do not make any stray marks on O.M.R. Sheet.

ಗಮನಿಸಿ : ಸೂಚನೆಗಳ ಕನ್ನಡ ಆವೃತ್ತಿಯು ಈ ಪುಸ್ತಕದ ಹಿಂಭಾಗದಲ್ಲಿ ಮುದ್ರಿಸಲ್ಪಟ್ಟಿದೆ.

PART - A

I. This part shall contains 50 multiple choice/objective type questions, each question carrying one mark. **[50 × 1 = 50]**

1) If S denotes a closed surface enclosing a sphere of radius a and $\hat{n}$ denotes the unit normal vector to the surface, the value of the surface integral $\iint_S \vec{a}.\hat{n}\, dS$ is

(A) zero

(B) $\frac{4}{3}\pi a^3$

(C) $\frac{8}{3}\pi a^3$

(D) $4\pi a^3$

2) The equation $x^5 - 4x^2 + 2 = 0$ has

(A) no real roots

(B) at least one real root

(C) at least three real roots

(D) 5 real roots

3) Given a 2 × 2 matrix A, trace of which is T and determinant D, the eigenvalues are given by,

(A) $\frac{T \pm D}{2}$

(B) $\pm\frac{\sqrt{T^2 + D}}{2}$

(C) $\frac{T \pm \sqrt{T^2 - 4D}}{2}$

(D) $\frac{T}{2} \pm \sqrt{T^2 \pm 4D}$

4) The Fourier transform of $e^{-|x|}$ is

(A) $\frac{2}{1+k^2}$

(B) $\frac{2}{k^2}$

(C) $e^{-|k|}$

(D) $e^{-k^2/2}$

5) S_{ij} and A_{ij} represent a symmetric and an antisymmetric real-valued tensor respectively in three dimensions. The number of independent components of S_{ij} and A_{ij} are,

(A) 6 and 5 respectively

(B) 10 and 6 respectively

(C) 6 and 3 respectively

(D) 12 and 6 respectively

6) For a particle moving in a central force field

(A) Particle motion is confined to a plane

(B) The kinetic energy is a constant of motion

(C) The potential energy is velocity dependent

(D) Total linear momentum is a constant

7) If a generalized co-ordinate has dimension of momentum, the generalized velocity will have the dimension of

(A) Velocity (B) Force

(C) Acceleration (D) Angular momentum

8) The Lagrangian of a particle of mass m moving in a plane is given by $L=\frac{1}{2}\left[m(v_x^2+v_y^2)+\alpha(xv_y-yv_x)\right]$, where v_x, v_y are the components of velocity and α is a constant. The canonical momenta of the particle are given by,

(A) $p_x = mv_x$, $p_y = mv_y$

(B) $p_x = mv_x + \alpha y$, $p_y = mv_y + \alpha x$

(C) $p_x = mv_x - \alpha y$, $p_y = mv_y + \alpha x$

(D) $p_x = mv_x - \alpha y$, $p_y = mv_y - \alpha x$

9) If p and q are the position and momentum variables, which one of the following is not a canonical transformation?

(A) $Q = \alpha q$ and $P=\frac{1}{\alpha}p$, for $\alpha \neq 0$

(B) $Q = \alpha q + \beta p$ and $P = \beta q + \alpha p$, for α, β real and $\alpha^2 + \beta^2 = 1$

(C) $Q = q$ and $P = p$

(D) $Q = p$ and $P = -q$

10) The Poisson bracket $\{x, zp_x - xp_z\}$ is given by

(A) 0 (B) p_x

(C) p_z (D) z

11) The electric field in a source-free region is given by $\vec{E} = x\hat{i} + by\hat{j}$. The value of b is,

(A) -1 (B) 0

(C) 1 (D) 0.1

12) Four positive charges q are placed at the corners of a square of sides L. If one of the charges is removed, the magnitude of the electric field at the centre of the square is proportional to

(A) $6q/L^2$ (B) q/L^2

(C) $3q/L^2$ (D) $2q/L^2$

13) An electric dipole of moment $\vec{d}$ is located in a region of constant electric field $\vec{E}$ at an angle α to the field. The work required to rotate the dipole by 180° about an axis perpendicular to $\vec{\mu}$ is,

(A) dE cos α (B) dE

(C) 2dE cos α (D) dE sin α

14) If in the interior of a unit sphere we have $\vec{\nabla}.\vec{J}$ = a positive constant where $\vec{J}$ is the current density, we may conclude that

(A) According to Gauss' theorem, the charge contained in the unit sphere is constant in time

(B) According to Gauss' theorem, charge is flowing into the unit sphere

(C) According to the continuity equation, the charge density within the unit sphere must necessarily be uniform

(D) According to the continuity equation, the charge density within the unit sphere diminishes with time

15) A parallel plate capacitor has plates of area A and separation d. It is charged to a potential difference V and the charging battery is then disconnected. The plates are now pulled apart until their separation is 2d. The ratio of the final stored energy to the initial energy stored by the capacitor is,

(A) 2 (B) 3

(C) 1 (D) 0.5

16) The wave function $\Psi(\vec{r})$ of a particle moving in a 2 dimensional space has physical dimensions of

(A) $L^{3/2}$ (B) $L^{-3/2}$

(C) L^{-1} (D) L

17) x and p are two operators which satisfy the commutation relation $[x, p] = i$. Then the commutator [X, P] of the operators $X = x \cos \phi + p \sin \phi$ and $p = -x \sin \phi + p \cos \phi$ is equal to,

(A) 1 (B) -1

(C) i (D) $-i$

18) A harmonic oscillator is in the energy eigenstate $|n\rangle$. A time independent perturbation $\lambda(a^\dagger a)^2$ acts on the particle, where λ is a constant; a and $a^\dagger$ are lowering and raising operators respectively. Then the first order energy shift is given by,

(A) λn (B) λn^2

(C) $\lambda^2 n$ (D) $(\lambda n)^2$

19) A spin $\frac{1}{2}$ particle is prepared in the eigenstate of S_z with eigenvalue $\hbar/2$. The expectation values of S_x, S^2_x are given respectively by.

(A) $0, \hbar^2/4,$ (B) $-\hbar/2, -\hbar^2/4$

(C) $\hbar/2, \hbar^2/4$ (D) $\hbar, \hbar^2$

20) The Dirac Hamiltonian $H = c\vec{\alpha}.\vec{p} + \beta mc^2$ commutes with

(A) $\vec{r}$ (B) $\vec{p}$

(C) $\vec{r} \times \vec{p}$ (D) $\vec{\alpha}$

21) The equation of state of a gas with internal energy U is given by $PV = \frac{1}{3}U$. Then, the corresponding equation for an adiabatic process is

(A) $PV^{2/3}$ = constant (B) $PV^{1/3}$ = constant

(C) $PV^{4/3}$ = constant (D) $PV^{3/5}$ = constant

22) A sealed and thermally insulated container of total volume V is divided into two equal and impermeable wall. The left half of the container is initially occupied by n moles of gas at temperature T. Which of the following given the change in entropy of the system when the wall is suddenly removed and the gas expands to fill the entire volume?

(A) $2n\text{Rln } 2$ (B) $n\text{Rln } 2$

(C) $-n\text{Rln } 2$ (D) $-2n\text{Rln } 2$

23) The number of ways in which 5 identical bosons can be distributed in 4 states is,

(A) $\frac{8!}{5!3!}$ (B) $\frac{9!}{5!4!}$

(C) $\frac{9!}{4!4!}$ (D) $\frac{8!}{4!4!}$

24) For an energy state E of a photon gas, the density of states is proportional to

(A) $\sqrt{E}$ (B) E

(C) $E^{3/2}$ (D) E^2

25) A one dimensional random walker takes steps to left or right with equal probability. The probability that the random walker starting from origin is back to origin after N even number of steps is

(A) $\frac{N!}{\frac{N}{2}!\frac{N}{2}!2^N}$ (B) $\frac{(2N)!}{\frac{N}{2}!\frac{N}{2}!2^N}$

(C) $\frac{(2N)!}{2^N}$ (D) $\frac{N!}{2^N}$

26) The electronic configuration of the ground state of the Na atom is $^2S_{1/2}$. This implies that

(A) S = 2, L= 0, J = 2 (B) S = 0, L= 1/2, J = 1/2

(C) S = 1/2, L= 0, J = 1/2 (D) S = 0, L= 2, J = 2

27) Under the LS coupling scheme, the possible spectral terms $^{2S+1}L_J$ for the electronic configuration $2s^1 3s^1$ are

(A) $^2S_{1/2}$, $^2P_{3/2}$, $^2P_{1/2}$
(B) $^1S_0$, $^3S_1$
(C) $^1S_0$, $^1S_1$, $^3S_0$, $^3S_1$
(D) $^3S_0$, $^3S_1$

28) The sodium doublet lines are due to transitions from $^2P_{3/2}$ and $^2P_{1/2}$ levels to $^2S_{1/2}$ level. On application of a weak magnetic field, the total number of allowed transitions becomes

(A) 4
(B) 6
(C) 8
(D) 10

29) The matrix A is given by $A = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$. Then the diagonalized form of exp A is given by

(A) $\begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$
(B) $\begin{pmatrix} e & 0 \\ 0 & e \end{pmatrix}$
(C) $\begin{pmatrix} e & 0 \\ 0 & 1 \end{pmatrix}$
(D) $\begin{pmatrix} e & 0 \\ 0 & e^{-1} \end{pmatrix}$

30) You are shown a spectrum consisting of a series of equally spaced lines. This could be

(A) the rotational spectrum of CO
(B) the vibrational spectrum of N_2
(C) the NMR spectrum of CH_4
(D) the Mossbauer spectrum of Fe_3 SO_4

31) Lorentz transformations assume

(A) Space is relative but time is absolute
(B) Space is absolute but time is relative
(C) Space and time are both relative
(D) Space and time are both absolute

32) A cube has a side l_0 when measured by a observer in a frame S. Volume of the cube measured by another observer in a frame of reference S', which moves with a relativistic velocity v parallel to one of the edges of the cube is given by

(A) l_0^3

(B) $l_0^3\left(1-\frac{v^2}{c^2}\right)^{-3/2}$

(C) $l_0^3\left(1-\frac{v^2}{c^2}\right)^{1/2}$

(D) $l_0^3\left(1-\frac{v^2}{c^2}\right)^{3}$

33) Let us set c = 1 as a system of units. Identify which of the following is a Lorentz transformation?

(A) $x' = 4x, y' = y, z' = z, t' = 0.25t$

(B) $x' = x - 0.5t, y' = y, z' = z, t' = t + x$

(C) $x' = 1.25x - 0.75t, y' = y, z' = z, t' = 0.75t - 1.25x$

(D) $x' = 1.25x - 0.75t, y' = y, z' = z, t' = 1.25t - 0.75x$

34) The speed of a particle whose kinetic energy is equal to its rest mass energy is given by (c is the speed of light in vacuum)

(A) $c/3$

(B) $\sqrt{2}c/3$

(C) $c/2$

(D) $\frac{\sqrt{3}}{2}c$

35) The total energy of a particle is twice its rest mass. The momentum is given by,

(A) $\sqrt{2mc}$

(B) mc

(C) $\sqrt{3}mc$

(D) $2mc$

36) It is given that the ${}^{16}_{8}\mathrm{O}$ nucleus has volume V. Express the volume of the nucleus ${}^{128}_{54}\mathrm{Xe}$ in terms of V.

(A) 5 V

(B) 8 V

(C) 2 V

(D) 16 V

37) According to the shell model, the ground state of $^{15}_{8}O$ is

(A) $\frac{3}{2}^{+}$ (B) $\frac{1}{2}^{+}$

(C) $\frac{3}{2}^{-}$ (D) $\frac{1}{2}^{-}$

38) ^{10}Be nucleus in its first excited state has spin-parity 2^+. It gets de-excited to the ground state, which has spin-parity 0^+ by γ-decay. The dominant multipole value carried by the γ-ray is

(A) E2 (B) M2

(C) E1 (D) E4

39) Let $|p\rangle, |n\rangle$ denote the proton and neutron states. Which of the following two-nucleon state has isospin I = 0 and $I_3 = 0$?

(A) $\frac{1}{\sqrt{2}}(|n,n\rangle - |p,p\rangle)$ (B) $\frac{1}{\sqrt{2}}(|n,n\rangle + |p,p\rangle)$

(C) $\frac{1}{\sqrt{2}}(|n,p\rangle - |p,n\rangle)$ (D) $\frac{1}{\sqrt{2}}(|n,p\rangle + |p,n\rangle)$

40) Which of the following elementary particle process occurs in nature?

(A) $e^+ + e^- \rightarrow \gamma$ (B) $K^+ \rightarrow \pi^+ + \pi^- + \pi^+$

(C) $\pi^- \rightarrow \mu^- + \nu_\mu$ (D) $\mu^- \rightarrow e^- + \bar{\nu}_e$

41) Density of states of free electrons in a solid moving with an energy 0.1 eV is given by $2.15 \times 10^{21} eV^{-1} cm^{-3}$. The density of states (in $eV^{-1} cm^{-3}$) for electrons moving with an energy of 0.4 eV will be

(A) 1.07×10^{21} (B) 1.52×10^{21}

(C) 3.04×10^{21} (D) 4.30×10^{21}

42) Consider a lattice made of ping-pong balls in contact with one another. If the lattice has simple cubic structure then the volume fraction occupied by balls is

(A) π (B) $\pi/2$

(C) $\pi/3$ (D) $\pi/6$

43) For a NaCl crystal, the cell-edge $a = 0.563$ nm. The smallest angle at which Bragg reflection can occur correspons to a set of planes whose indices are

(A) 1,0,0
(B) 1,1,0
(C) 1,1,1
(D) 1,2,0

44) The probability that a state which is 0.2eV above the Fermi energy in a metal atom at 700K is

(A) 96.2%
(B) 62.3%
(C) 3.5%
(D) 37.7%

45) In a p-type silicon sample the how concentration is given by 2.25×10^{15} cm^{-3}. If the intrinsic carrier concentration of the sample is 1.5×10^{10} cm^{-3}, the electron concentration is

(A) 1.5×10^{2} cm^{-5}
(B) 10^{5} cm^{-3}
(C) 10^{10} cm^{-3}
(D) 2.25×10^{5} cm^{-3}

46) In an n-p-n transistor, the leakage current consists of

(A) electrons moving from the base to the emitter
(B) electrons moving from the emitter to the base
(C) electrons moving from the collector to the base
(D) electrons moving from the base to the collector

47) In an op-amp, when the input signal drives the output at a rate of voltage change greater than the slew rate, then the resulting signal

(A) enhanced
(B) is clipped
(C) is unaffected
(D) remains the same, but with 90° phase difference

48) The inverting input terminal of an operational amplifier (op-amp) is shorted with the output terminal apart from being grounded. A voltage signal v is applied to the non-inverting input terminal of the op-amp. Under this configuration, the op-amp functions as

(A) An open loop inverter
(B) A voltage to current converter
(C) A voltage follower
(D) An oscillator

49) The high input impedance of field effect transistor (FET) amplifier is due to

(A) The pinch-off voltage

(B) Its very low gate current

(C) The source and drain being far apart

(D) The geometry of the FET

50) Percentage resolution of a 5 bit data converter is

(A) 20% (B) 12.5%

(C) 25% (D) 0.20%

PART - B

II. This part shall contains Five questions, each question carrying ten marks. **[5 × 10 = 50]**

1. Explain Neumann series method of solving integral equations. Solve $u(x)=1+\lambda\int_0^1 u(y)dy$ using the Neumann series approach.

2. Obtain the multipole expansion of electrostatic potential and explain the significance of each term in the expansion.

3. What is an ideal Bose gas? Explain. Arrive at Planck's law of radiation using Bose-Einstein statistics.

4. Using the commutation relations of angular momentum operators derive the spectrum of the operator J^2, J_z. Show that angular momentum can have half integer values.

5. Outline the band structure of semiconductors and obtain an expression for carrier concentration in intrinsic semiconductors.

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಜೊತೆಗೆ 50 ಪ್ರಶ್ನೆಗಳನ್ನು ಹೊಂದಿರುವ ಮೊಹರು ಮಾಡಿದ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ನಿಮಗೆ ನೀಡಲಾಗಿದೆ.
2. ಕೊಟ್ಟಿರುವ ಪ್ರಶ್ನೆ ಪುಸ್ತಕವು, ನೀವು ಪರೀಕ್ಷೆಗೆ ಆಯ್ಕೆ ಮಾಡಿಕೊಂಡಿರುವ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ್ದೇ ಎಂಬುದನ್ನು ಪರಿಶೀಲಿಸಿರಿ.
3. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯ ಮೊಹರನ್ನು ಜಾಗ್ರತೆಯಿಂದ ತೆರೆಯಿರಿ ಮತ್ತು ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯಿಂದ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯನ್ನು ಹೊರಗೆ ತೆಗೆದು, ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಸಾಮಾನ್ಯ ಮಾಹಿತಿಯನ್ನು ತುಂಬಿರಿ. ಕೊಟ್ಟಿರುವ ಸೂಚನೆಯಂತೆ ನೀವು ನಮೂನೆಯಲ್ಲಿನ ವಿವರಗಳನ್ನು ತುಂಬಲು ವಿಫಲರಾದರೆ, ನಿಮ್ಮ ಉತ್ತರ ಹಾಳೆಯ ಮೌಲ್ಯಮಾಪನ ಸಮಯದಲ್ಲಿ ಉಂಟಾಗುವ ಪರಿಣಾಮಗಳಿಗೆ ವೈಯಕ್ತಿಕವಾಗಿ ನೀವೇ ಜವಾಬ್ದಾರರಾಗಿರುತ್ತೀರಿ.
4. ಪರೀಕ್ಷೆಯ ಸಮಯದಲ್ಲಿ:
   a) ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯನ್ನು ಜಾಗ್ರತೆಯಿಂದ ಓದಿರಿ.
   b) ಪ್ರತಿ ಪ್ರಶ್ನೆಯ ಕೆಳಗೆ ನೀಡಿರುವ ನಾಲ್ಕು ಲಭ್ಯ ಆಯ್ಕೆಗಳಲ್ಲಿ ಅತ್ಯಂತ ಸರಿಯಾದ/ ಸೂಕ್ತವಾದ ಉತ್ತರವನ್ನು ನಿರ್ಧರಿಸಿ.
   c) ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಸಂಬಂಧಿಸಿದ ಪ್ರಶ್ನೆಯ ವೃತ್ತಾಕಾರವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬಿರಿ. ಉದಾಹರಣೆಗೆ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8ಕ್ಕೆ "C" ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದರೆ, ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಬಳಸಿ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯ ಕ್ರಮ ಸಂಖ್ಯೆ 8ರ ಮುಂದೆ ಈ ಕೆಳಗಿನಂತೆ ತುಂಬಿರಿ:

   ಪ್ರಶ್ನೆ ಸಂಖ್ಯೆ 8. Ⓐ Ⓑ ● Ⓓ (ಉದಾಹರಣೆ ಮಾತ್ರ) (ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರ ಉಪಯೋಗಿಸಿ)
5. ಉತ್ತರದ ಪೂರ್ವಸಿದ್ಧತೆಯ ಬರವಣಿಗೆಯನ್ನು (ಚಿತ್ತು ಕೆಲಸ) ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯಲ್ಲಿ ಒದಗಿಸಿದ ಖಾಲಿ ಜಾಗದಲ್ಲಿ ಮಾತ್ರವೇ ಮಾಡಬೇಕು (ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಮಾಡಬಾರದು).
6. ಒಂದು ನಿರ್ದಿಷ್ಟ ಪ್ರಶ್ನೆಗೆ ಒಂದಕ್ಕಿಂತ ಹೆಚ್ಚು ವೃತ್ತಾಕಾರವನ್ನು ಗುರುತಿಸಲಾಗಿದ್ದರೆ, ಅಂತಹ ಉತ್ತರವನ್ನು ತಪ್ಪು ಎಂದು ಪರಿಗಣಿಸಲಾಗುತ್ತದೆ ಮತ್ತು ಯಾವುದೇ ಅಂಕವನ್ನು ನೀಡಲಾಗುವುದಿಲ್ಲ. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿನ ಉದಾಹರಣೆ ನೋಡಿ.
7. ಅಭ್ಯರ್ಥಿ ಮತ್ತು ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರು ನಿರ್ದಿಷ್ಟಪಡಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯ ಮೇಲೆ ಸಹಿ ಮಾಡಬೇಕು.
8. ಅಭ್ಯರ್ಥಿಯು ಪರೀಕ್ಷೆಯ ನಂತರ ಕೊಠಡಿ ಮೇಲ್ವಿಚಾರಕರಿಗೆ ಮೂಲ ಓ.ಎಂ.ಆರ್. ಉತ್ತರ ಹಾಳೆ ಮತ್ತು ವಿಶ್ವವಿದ್ಯಾನಿಲಯದ ಪ್ರತಿಯನ್ನು ಹಿಂದಿರುಗಿಸಬೇಕು.
9. ಅಭ್ಯರ್ಥಿಯು ಪ್ರಶ್ನೆ ಪುಸ್ತಕವನ್ನು ಮತ್ತು ಓ.ಎಂ.ಆರ್. ಅಭ್ಯರ್ಥಿಯ ಪ್ರತಿಯನ್ನು ತಮ್ಮ ಜೊತೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
10. ಕ್ಯಾಲ್ಕುಲೇಟರ್, ಪೇಜರ್ ಮತ್ತು ಮೊಬೈಲ್ ಫೋನ್‌ಗಳನ್ನು ಪರೀಕ್ಷಾ ಕೊಠಡಿಯ ಒಳಗೆ ಅನುಮತಿಸಲಾಗುವುದಿಲ್ಲ.
11. **ಅಭ್ಯರ್ಥಿಯು ದುಷ್ಕೃತ್ಯದಲ್ಲಿ ತೊಡಗಿರುವುದು ಕಂಡುಬಂದರೆ, ಅಂತಹ ಅಭ್ಯರ್ಥಿಯನ್ನು ಕೋರ್ಸ್‌ಗೆ ಪರಿಗಣಿಸಲಾಗುವುದಿಲ್ಲ ಮತ್ತು ನಿಯಮಗಳ ಪ್ರಕಾರ ಇಂತಹ ಅಭ್ಯರ್ಥಿಯ ವಿರುದ್ಧ ಕ್ರಮ ಕೈಗೊಳ್ಳಲಾಗುವುದು.**

ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯನ್ನು ತುಂಬಲು ಸೂಚನೆಗಳು

1. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೆ ಒಂದೇ ಒಂದು ಅತ್ಯಂತ ಸೂಕ್ತವಾದ/ಸರಿಯಾದ ಉತ್ತರವಿರುತ್ತದೆ.
2. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ವೃತ್ತವನ್ನು ಮಾತ್ರ ನೀಲಿ ಅಥವಾ ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಮಾತ್ರ ತುಂಬತಕ್ಕದ್ದು. ಉತ್ತರವನ್ನು ಮಾರ್ಪಡಿಸಲು ಪ್ರಯತ್ನಿಸಬೇಡಿ.
3. ವೃತ್ತದೊಳಗಿರುವ ಅಕ್ಷರವು ಕಾಣದಿರುವಂತೆ ವೃತ್ತವನ್ನು ಸಂಪೂರ್ಣವಾಗಿ ತುಂಬುವುದು.
4. ಓ.ಎಂ.ಆರ್. ಹಾಳೆಯಲ್ಲಿ ಯಾವುದೇ ಅನಾವಶ್ಯಕ ಗುರುತುಗಳನ್ನು ಮಾಡಬೇಡಿ.

Note : English version of the instructions is printed on the front cover of this booklet.