

Test Paper : II

Test Subject : PHYSICAL SCIENCE

Test Subject Code : K-2515

Test Booklet Serial No. : _____

OMR Sheet No. : _____

Roll No.

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(Figures as per admission card)

Name & Signature of Invigilator/s

Signature : _____

Name : _____

Paper : II

Subject : PHYSICAL SCIENCE

Time : 1 Hour 15 Minutes

Maximum Marks : 100

Number of Pages in this Booklet : 8

Number of Questions in this Booklet : 50

ಅಭ್ಯರ್ಥಿಗಳಿಗೆ ಸೂಚನೆಗಳು

1. ಈ ಪುಟದ ಮೇಲ್ಭಾಗದಲ್ಲಿ ಒದಗಿಸಿದ ಸ್ಥಳದಲ್ಲಿ ನಿಮ್ಮ ರೋಲ್ ನಂಬರನ್ನು ಬರೆಯಿರಿ.
2. ಈ ಪತ್ರಿಕೆಯು ಬಹು ಆಯ್ಕೆ ವಿಧದ ಐವತ್ತು ಪ್ರಶ್ನೆಗಳನ್ನು ಒಳಗೊಂಡಿದೆ.
3. ಪರೀಕ್ಷೆಯ ಪ್ರಾರಂಭದಲ್ಲಿ ಪ್ರಶ್ನೆಪುಸ್ತಕವನ್ನು ನಿಮಗೇ ನೀಡಲಾಗುವುದು. ಮೊದಲ 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪುಸ್ತಕವನ್ನು ತೆರೆಯಲು ಮತ್ತು ಕೆಳಗಿನಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಪರೀಕ್ಷಿಸಲು ಕೋರಲಾಗಿದೆ.
(i) ಪ್ರಶ್ನೆ ಪುಸ್ತಕಕ್ಕೆ ಪ್ರವೇಶವನ್ನು ಪಡೆಯಲು, ಈ ಹೊದಿಕೆ ಪುಟದ ಅಂಚಿನ ಮೇಲಿರುವ ಪೇಪರ್ ಸೀಲನ್ನು ಹರಿಯಿರಿ. ಸ್ವಿಚ್ ಸೀಲ್ ಇಲ್ಲದ ಅಥವಾ ತೆರದ ಪುಸ್ತಕವನ್ನು ಸ್ವೀಕರಿಸಬೇಡಿ.
(ii) ಪುಸ್ತಕಿಯಲ್ಲಿನ ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ ಮತ್ತು ಪುಟಗಳ ಸಂಖ್ಯೆಯನ್ನು ಮುಖಪುಟದ ಮೇಲೆ ಮುದ್ರಿಸಿದ ಮಾಹಿತಿಯೊಂದಿಗೆ ತಾಳಿ ನೋಡಿರಿ. ಪುಟಗಳು/ಪ್ರಶ್ನೆಗಳು ಕಾಣೆಯಾದ, ಅಥವಾ ದ್ವಿಪ್ರತಿ ಅಥವಾ ಅನುಕ್ರಮವಾಗಿಲ್ಲದ ಅಥವಾ ಇತರ ಯಾವುದೇ ವ್ಯತ್ಯಾಸದ ದೋಷಪೂರಿತ ಪುಸ್ತಕಿಯನ್ನು ಕೂಡಲೇ 5 ನಿಮಿಷದ ಅವಧಿ ಒಳಗೆ, ಸಂವೀಕ್ಷಕರಿಂದ ಸರಿ ಇರುವ ಪುಸ್ತಕಿಗೆ ಬದಲಾಯಿಸಿಕೊಳ್ಳಬೇಕು. ಆ ಬಳಿಕ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಬದಲಾಯಿಸಲಾಗುವುದಿಲ್ಲ. ಯಾವುದೇ ಹೆಚ್ಚು ಸಮಯವನ್ನೂ ಕೊಡಲಾಗುವುದಿಲ್ಲ.
4. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ (A), (B), (C) ಮತ್ತು (D) ಎಂದು ಗುರುತಿಸಿದ ನಾಲ್ಕು ಪರ್ಯಾಯ ಉತ್ತರಗಳಿವೆ. ನೀವು ಪ್ರಶ್ನೆಯ ಎದುರು ಸರಿಯಾದ ಉತ್ತರದ ಮೇಲೆ, ಕೆಳಗೆ ಕಾಣಿಸಿದಂತೆ ಅಂಡಾಕೃತಿಯನ್ನು ಕವಚಿಸಬೇಕು.
ಉದಾಹರಣೆ :

A	B	C	D
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(C) ಸರಿಯಾದ ಉತ್ತರವಾಗಿದ್ದಾಗ.
5. ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ರಲ್ಲಿ ಕೊಟ್ಟಿರುವ OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ, ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ I ಮತ್ತು ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆ II ರಲ್ಲಿ ಇರುವ ಪ್ರಶ್ನೆಗಳಿಗೆ ನಿಮ್ಮ ಉತ್ತರಗಳನ್ನು ಸೂಚಿಸತಕ್ಕದ್ದು. OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಅಂಡಾಕೃತಿಯಲ್ಲದ ಬೇರೆ ಯಾವುದೇ ಸ್ಥಳದಲ್ಲಿ ಉತ್ತರವನ್ನು ಗುರುತಿಸಿದರೆ, ಅದರ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುವುದಿಲ್ಲ.
6. OMR ಉತ್ತರ ಹಾಳೆಯಲ್ಲಿ ಕೊಟ್ಟ ಸೂಚನೆಗಳನ್ನು ಜಾಗರೂಕತೆಯಿಂದ ಓದಿರಿ.
7. ಎಲ್ಲಾ ಕರಡು ಕೆಲಸವನ್ನು ಪುಸ್ತಕಿಯ ಕೊನೆಯಲ್ಲಿ ಮಾಡತಕ್ಕದ್ದು.
8. ನಿಮ್ಮ ಗುರುತನ್ನು ಬಹಿರಂಗಪಡಿಸಬಹುದಾದ ನಿಮ್ಮ ಹೆಸರು ಅಥವಾ ಯಾವುದೇ ಚಿಹ್ನೆಯನ್ನು ಸಂಗತವಾದ ಸ್ಥಳ ಹೊರತು ಪಡಿಸಿ, OMR ಉತ್ತರ ಹಾಳೆಯ ಯಾವುದೇ ಭಾಗದಲ್ಲಿ ಬರೆದರೆ, ನೀವು ಅನರ್ಹತೆಗೆ ಬಾಧ್ಯರಾಗಿರುತ್ತೀರಿ.
9. ಪರೀಕ್ಷೆಯು ಮುಗಿದನಂತರ, ಕಡ್ಡಾಯವಾಗಿ OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ಸಂವೀಕ್ಷಕರಿಗೆ ನೀವು ಹಿಂತಿರುಗಿಸಬೇಕು ಮತ್ತು ಪರೀಕ್ಷಾ ಕೋಶದ ಹೊರಗೆ OMR ನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ಕೊಂಡೊಯ್ಯಕೂಡದು.
10. ಪರೀಕ್ಷೆಯ ನಂತರ, ಪರೀಕ್ಷಾ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಯನ್ನು ಮತ್ತು ನಕಲು OMR ಉತ್ತರ ಹಾಳೆಯನ್ನು ನಿಮ್ಮೊಂದಿಗೆ ತೆಗೆದುಕೊಂಡು ಹೋಗಬಹುದು.
11. ನೀಲಿ/ಕಪ್ಪು ಬಾಲ್ ಪಾಯಿಂಟ್ ಪೆನ್ ಮಾತ್ರವೇ ಉಪಯೋಗಿಸಿರಿ.
12. ಕ್ಯಾಲ್ಕುಲೇಟರ್ ಅಥವಾ ಲಾಗ್ ಟೇಬಲ್ ಇತ್ಯಾದಿ ಉಪಯೋಗವನ್ನು ನಿಷೇಧಿಸಲಾಗಿದೆ.
13. ಸರಿ ಅಲ್ಲದ ಉತ್ತರಗಳಿಗೆ ಋಣ ಅಂಕ ಇರುವುದಿಲ್ಲ.
14. ಕನ್ನಡ ಮತ್ತು ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳ ಪ್ರಶ್ನೆ ಪತ್ರಿಕೆಗಳಲ್ಲಿ ಯಾವುದೇ ರೀತಿಯ ವ್ಯತ್ಯಾಸಗಳ ಕಂಡುಬಂದಲ್ಲಿ, ಇಂಗ್ಲೀಷ್ ಆವೃತ್ತಿಗಳಲ್ಲಿರುವುದೇ ಅಂತಿಮವೆಂದು ಪರಿಗಣಿಸಬೇಕು.

Instructions for the Candidates

1. Write your roll number in the space provided on the top of this page.
2. This paper consists of fifty multiple-choice type of questions.
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below :
(i) To have access to the Question Booklet, tear off the paper seal on the edge of the cover page. Do not accept a booklet without sticker seal or open booklet.
(ii) **Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.**
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the oval as indicated below on the correct response against each item.
Example :

A	B	C	D
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where (C) is the correct response.
5. Your responses to the questions are to be indicated in the **OMR Sheet kept inside the Paper I Booklet only**. If you mark at any place other than in the ovals in the Answer Sheet, it will not be evaluated.
6. Read the instructions given in OMR carefully.
7. Rough Work is to be done in the end of this booklet.
8. If you write your name or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, you will render yourself liable to disqualification.
9. You have to return the test OMR Answer Sheet to the invigilators at the end of the examination compulsorily and must NOT carry it with you outside the Examination Hall.
10. You can take away question booklet and carbon copy of OMR Answer Sheet soon after the examination.
11. **Use only Blue/Black Ball point pen.**
12. **Use of any calculator or log table etc., is prohibited.**
13. **There is no negative marks for incorrect answers.**
14. **In case of any discrepancy found in the Kannada translation of a question booklet the question in English version shall be taken as final.**



PHYSICAL SCIENCE
Paper – II

Note : This paper contains **fifty (50)** objective type questions. **Each** question carries **two (2)** marks. **All** questions are **compulsory**.

1. Dimensional formula for Hall coefficient is

- (A) $M^0L^3A^{-1}T^1$ (B) $M^1L^3T^3A^3$
(C) $M^{-2}L^3T^1A^{-1}$ (D) $M^1T^1L^3A^1$

2. If $\vec{A} = 5t^2\hat{i} + t\hat{j} + t^3\hat{k}$

$$\vec{B} = \sin t \hat{i} - \cos t \hat{j} + 6\hat{k}$$

$$\frac{d}{dt}(\vec{A} \cdot \vec{B}) \text{ is}$$

- (A) $(2t^2 - 5) \cos t + 23 t \sin t$
(B) $(9t^2 - 3) \cos t + 18 t \sin t$
(C) $(7t^2 - 2) \cos t + 15 t \sin t$
(D) $(5t^2 - 1) \cos t + 11 t \sin t$

3. Eigen values of the matrix

$$A = \begin{pmatrix} \cos \theta & -\sin \theta \\ \sin \theta & \cos \theta \end{pmatrix} \text{ are}$$

- (A) $e^{\pm i\theta}$ (B) $e^{\pm 2i/\theta}$
(C) $e^{\pm 3i\theta}$ (D) $e^{\pm i\theta/2}$

4. The independent solutions of the

$$\text{following equation } \frac{d^2y}{dx^2} - 3\frac{dy}{dx} + 2y = 0$$

are

- (A) e^{-2x} and e^{-x} (B) e^{2x} and e^x
(C) x and x^2 (D) $\sin x$ and $\cos x$

5. Laplace transform of $\cos(ax)$ is

- (A) $\frac{s}{s^2 + a^2}$ (B) $\frac{s^2 + a^2}{s}$
(C) $\frac{s}{s^2 - a^2}$ (D) $\frac{s}{a^2 - s^2}$

6. In a binomial distribution, values of mean and standard deviation are 9, $\sqrt{6}$ respectively then the values of n and p , respectively are

- (A) 27, $\frac{1}{3}$ (B) 81, $\frac{1}{9}$
(C) 36, $\frac{1}{4}$ (D) 18, $\frac{1}{2}$

7. Which one of the following functions is not analytic, where $z = x + iy$?

- (A) $R_e(z)$ (B) z^{-1}
(C) $\sin z$ (D) $e^{\sin z}$

8. The probability that students get unannounced test during any class is

$\frac{1}{5}$. If a student is absent twice, then the probability that the student misses at least one test is

- (A) $\frac{2}{3}$ (B) $\frac{4}{5}$
(C) $\frac{7}{25}$ (D) $\frac{9}{25}$



9. If the forces acting on a particle are conservative, then which of the following quantities is conserved ?
- (A) Total energy
(B) Linear momentum
(C) Angular momentum
(D) Both linear and angular momentum
10. For circular and parabolic orbits in an attractive $\frac{1}{r}$ potential having the same angular momentum, perihelion distance of parabola is
- (A) Double the radius of circle
(B) Equal to the radius of circle
(C) Half the radius of circle
(D) Thrice the radius of circle
11. Lagrangian for a compound pendulum is
- (A) $\frac{1}{2}I\dot{\theta}^2 - mgl \cos \theta$
(B) $\frac{1}{2}I\dot{\theta}^2 + mgl \cos \theta$
(C) $\frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2) + \frac{1}{2}I\dot{\theta}^2 - mgl \cos \theta$
(D) $\frac{1}{2}m(\dot{r}^2 + r^2\dot{\theta}^2) + \frac{1}{2}I\dot{\theta}^2 + mgl \cos \theta$
12. Hamilton's canonical equations of motion are
- (A) $\dot{q}_i = \frac{\partial H}{\partial p_i}$ and $\dot{p}_i = \frac{\partial H}{\partial q_i}$
(B) $\dot{q}_i = \frac{\partial H}{\partial p_i}$ and $\dot{p}_i = -\frac{\partial H}{\partial q_i}$
(C) $q_i = \frac{\partial H}{\partial p_i}$ and $p_i = \frac{\partial H}{\partial q_i}$
(D) $q_i = \frac{\partial H}{\partial p_i}$ and $p_i = -\frac{\partial H}{\partial q_i}$
13. When the body is constrained so as to rotate only about a fixed axis, then moment of inertia is
- (A) Zero (B) Variable
(C) Constant (D) Non-zero
14. The rest mass of an electron is m_0 . When it moves with the velocity of $0.6 C$ then its mass is
- (A) m_0 (B) $\left(\frac{5}{4}\right)m_0$
(C) $\left(\frac{4}{5}\right)m_0$ (D) $2m_0$
15. A cylinder rolling without slipping down a rough inclined plane of angle θ is an example of
- (A) Scleronomic, conservative system only
(B) Scleronomic, holonomic, conservative system only
(C) Conservative system only
(D) Scleronomic system only



16. $\nabla^2 V = -4\pi\rho$ represents

- (A) Maxwell's equation
- (B) Laplace's equation
- (C) Poisson's equation
- (D) Hermite's equation

17. A point charge q is at a distance d from a conducting plane, the energy required to move the charge to infinitely away from the plane is

- (A) $\frac{-q^2}{4d}$
- (B) $\frac{-q^2}{4d^2}$
- (C) $\frac{-q}{d}$
- (D) $-qd$

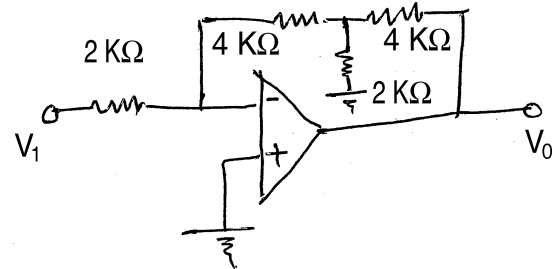
18. The Poynting theorem is a law of conservation of

- (A) Energy
- (B) Momentum
- (C) Orbital angular momentum
- (D) Spin angular momentum

19. A uniform current I is flowing along the surface of a hollow conducting cylinder of radius 'a' parallel to its axis. The magnetic induction inside the cylinder is

- (A) $\frac{\mu_0 I}{2\pi a}$
- (B) $\frac{I}{a}$
- (C) zero
- (D) $\frac{I}{\pi a^2}$

20. The gain of the op-amp circuit given below is



- (A) -8
- (B) -16
- (C) +8
- (D) +2

21. A 4-bit ripple counter consists of flip-flop such that each has a propagation delay from clock to Q output of 12 ns. For the counter to recycle from 1111 to 0000, it will take a total time of

- (A) 12 ns
- (B) 24 ns
- (C) 48 ns
- (D) 36 ns

22. An electromagnetic wave is to pass through an interface separating two media having dielectric constants $\epsilon_1 = \epsilon_2$ respectively. If $\epsilon_1 = 4\epsilon_2$, the wave will be totally reflected if angle of incidence is

- (A) 0°
- (B) 30°
- (C) 45°
- (D) 60°

23. In the case of fields of arbitrary moving charges, the magnetic field vectors is such that

- (A) $\vec{B} = \frac{\hat{n} \times \vec{E}}{C^2}$
- (B) $\vec{B} = \frac{\hat{n} \times \vec{E}}{C}$
- (C) $\vec{B} = \frac{\hat{n} \cdot \vec{E}}{C^2}$
- (D) $\vec{B} = \frac{\hat{n} \cdot \vec{E}}{C}$

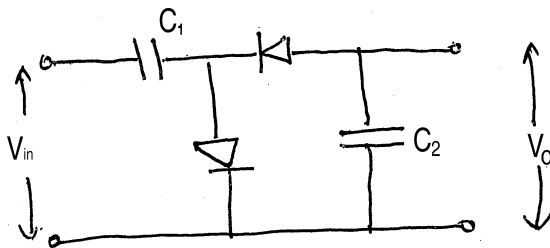


24. An electromagnetic wave in free space has a wavelength of 0.20 m. When this wave enters in a perfect dielectric ($\mu_r = 1$) its velocity becomes 2.0×10^8 m/s. Its wavelength in the dielectric will be
(A) 3 m (B) 0.03 m
(C) 0.3 m (D) 3.3 m
25. An electron has a speed of 500 m/s within the accuracy of 0.001%. The uncertainty in the position of electron is
(A) 0.23 m (B) 0.0023 m
(C) 0.023 m (D) 2.3 m
26. The expectation value of potential energy of a linear harmonic oscillator is
(A) $\frac{1}{2}\left(n + \frac{1}{2}\right)\hbar\omega$ (B) $\frac{1}{2}\left(n - \frac{1}{2}\right)\hbar\omega$
(C) $\frac{1}{2}(n-1)\hbar\omega$ (D) $\frac{1}{2}(n+1)\hbar\omega$
27. Which of the following states has eigen function for hydrogen atom as
$$\Psi_{210} = \frac{1}{\sqrt{32\pi}}\left(\frac{1}{a_0}\right)^{3/2} \exp\left(\frac{-r}{2a_0}\right) \cos\theta$$

(A) 2p state (B) 2s state
(C) 1s state (D) 3s state
28. The electron of hydrogen atom is in ground state. The $\langle r \rangle$ is
(A) $\frac{3}{4}a_0$ (B) $\frac{3}{8}a_0$
(C) $\frac{3}{2}a_0$ (D) $\frac{2}{3}a_0$
29. The value of $\sigma^2 = \sigma_x^2 + \sigma_y^2 + \sigma_z^2$ is equal to
(A) \hbar^2 (B) $\frac{\hbar^2}{4}$
(C) $\frac{3}{4}\hbar^2$ (D) $\frac{1}{2}\hbar^2$
30. A system has two energy levels of energy 0 and $100 K_B$ with degeneracy of 2 and 3 respectively. The partition function at a temperature of 100 K is
(A) 2.104
(B) 0.104
(C) 3.104
(D) 7.104
31. In a grand canonical ensemble a system A of fixed volume is in contact with a large reservoir B, then
(A) A can exchange energy only with B
(B) A can exchange particles with B only
(C) A can neither exchange particles nor energy with B
(D) A can exchange both particles and energy with B
32. In the variation principle, if a wave function ψ of an eigen state differs from the ground state wavefunction ψ_0 by ϵ , then its energy E differs from ground state energy E_0 by
(A) ϵ (B) ϵ^2
(C) $\sqrt{\epsilon}$ (D) ϵ^3



33. "A thermodynamic change takes place in such a way that the entropy either decreases or remains constant". This statement is
 (A) not true
 (B) true universally
 (C) true only for a closed system
 (D) true only for an open system
34. λ -point transition in liquid helium during Bose-Einstein condensation occurs at
 (A) 3.91 K (B) 2.91 K
 (C) 0.291 K (D) 2.19 K
35. An excited nucleus deexcites via transitions among three levels of energy $E_1 > E_2 > E_3$. If the rate for E_1 to E_2 transition is equal to that for E_2 to E_3 transition and corresponding matrix elements are in the ratio 1 : 2, the ratio of density of states is
 (A) 2 : 1 (B) 1 : 2
 (C) 1 : 1 (D) 1 : 4
36. A sinusoidal input voltage V_{in} of frequency ω is fed to the circuit shown in figure, where $C_1 \gg C_2$. If V_m is the peak value of the input voltage, the output voltage V_o is



- (A) $2 V_m$ (B) $2 V_m \sin \omega t$
 (C) $\sqrt{2} V_m$ (D) $\frac{V_m}{2} \sin \omega t$

37. If λ_m for solar radiation is 4753 \AA , then the temperature of the photosphere of sun will be
 (A) 6100 K (B) 6100°C
 (C) 61000 K (D) 61000°C
38. A 16-bit address bus of a microprocessor can support a memory size of
 (A) 131072 (B) 37268
 (C) 65536 (D) 32767
39. A dual slope ADC uses
 (A) Counter (B) Op-Amps
 (C) An integrator (D) Differentiator
40. 'In a thermodynamic system at equilibrium heat can be partially converted into work while the work can be completely converted to heat', this statement represents
 (A) Zeroth law of thermodynamics
 (B) First law of thermodynamics
 (C) Second law of thermodynamics
 (D) Third law of thermodynamics

41. The data given below :

x :	1	2	3	4
y :	1.7	1.8	2.3	3.2

According to method of least squares the desired straight line fit for the data is

- (A) $y = 1 + \frac{x}{2}$ (B) $y = 1 - \frac{x}{2}$
 (C) $y = 1 + \frac{x^2}{2}$ (D) $y = \frac{x^2}{2}$



42. In a gas, the expression for the average speed of a molecule is given by
- (A) $\sqrt{\frac{3KT}{m}}$ (B) $\sqrt{\frac{2KT}{m}}$
- (C) $\sqrt{\frac{8KT}{m}}$ (D) $\sqrt{\frac{3KT}{2m}}$
43. Two ends of a rod are kept at 127°C and 227°C . When 2000 Cal of heat flows in the rod, then the change of entropy is
- (A) 1.0 Cal/K (B) 20 Cal/K
- (C) 6.9 Cal/K (D) 0.7 Cal/K
44. In a classical micro-canonical ensemble for a system of N non-interacting particles the fundamental volume in phase space which is regarded as "equivalent to one state" is
- (A) h^{3N} (B) h^{2N}
- (C) h^N (D) h
45. In an experiment, the acceleration due to gravity g is determined by measuring the time period of a simple pendulum. If there is an error of 1% in the measurement of time period, the error in the value of 'g' is
- (A) 2% (B) 1%
- (C) 0.5% (D) 0.05%
46. A modulus – 12 counter must have
- (A) 12 flip-flops
- (B) 3 flip-flops
- (C) 4 flip-flops
- (D) 5 flip-flops
47. If a 8-bit serial in/serial out shift register is used for a time delay of $24\ \mu\text{s}$, the clock frequency applied to the flip-flop is
- (A) 41.67 KHz
- (B) 333 KHz
- (C) 125 KHz
- (D) 8 MHz
48. A J-K flip-flop with $J = 1$ and $K = 1$ has a 10 KHz clock input. The Q output is
- (A) Constantly high
- (B) Constantly low
- (C) A 10 KHz square wave
- (D) A 5 KHz square wave
49. The gauge transforms of \vec{A} and ϕ satisfy the Lorentz conditions if and only if the gauge functions themselves satisfy
- (A) Wave equation
- (B) Hermite equation
- (C) Legendre equation
- (D) Langerre equation
50. A program accesses ten continuous memory locations. The microprocessor will take less time if the addressing mode and is
- (A) Implicit
- (B) Direct
- (C) Register indirect
- (D) Immediate



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Space for Rough Work