

2. When the moment of inertia tensor I operates on angular velocity vector \vec{W} , the resulting angular momentum vector L is given by

(a) $L = I\vec{W}$

(b) $L = I^2\vec{W}$

(c) $L = \frac{I}{W}$

(d) $L = \frac{\vec{W}}{I}$

3. The Maxwell-Boltzmann distribution law is applicable to

(a) identical and indistinguishable particles

(b) identical and distinguishable particles

(c) unidentical and distinguishable particles

(d) unidentical and indistinguishable particles.

4. Bose-Einstein condensation is described as a

(a) condensation in phase space

(b) condensation in Hilbert space

(c) condensation in configuration space

(d) condensation in momentum space.

5. The relativistic relation for the variation of mass with velocity is

(a) $m = \frac{m_0}{\sqrt{1+V^2/C^2}}$

(b) $m = \frac{m_0}{\sqrt{1-V^2/C^2}}$

(c) $m = \frac{m_0}{\sqrt{1+V^2/2C^2}}$

(d) $m = \frac{m_0}{\sqrt{1-V^2/2C^2}}$

Fill up the blanks :

6. Poisson brackets are invariant with respect to canonical transformations.

7. The configuration of the rigid body would be completely specified by 3N-6 degrees of freedom.

8. According to the principle of equipartition of energy, the average energy associated with each degree of freedom is $\frac{1}{2}kT$.

9. The minimum amount of energy necessary to remove an electron from the metal is known as work function (of the metal).

10. The time is no more a scalar invariant and changes under _____.