

Q18. Which of the following has the highest entropy?

- A. Hydrogen
- B. Diamond
- C. Liquid nitrogen
- D. Mercury
- E. None of the above/ More than one of the above

Answer: A

Explanation:

- Entropy is defined as the **measurement of degree of randomness** or in other words, it is the increase in the disorganization within a system. Entropy is basically the **number of ways a system can be rearranged and have the same energy**.
- A substance in **solid phase has low entropy; in liquid phase, it has medium entropy; in gas phase, it has high entropy**. Hydrogen being gaseous has highest entropy.

Q19. The recoiling of guns is an example of which of the following?

- A. Law of Conservation of Angular Momentum
- B. Law of Conservation of Linear Momentum
- C. Conversion of Kinetic Energy to Potential Energy
- D. Law of Conservation of Energy
- E. None of the above/ More than one of the above

Answer: B

Explanation:

- A gun's recoil, or kickback, is the backward movement a shooter feels when the bullet is discharged. When a gun exerts a force on a bullet as it's launching it forward, the **law of Conservation of Linear Momentum** says the bullet will exert an equal force in the opposite direction of the gun. The law of conservation of momentum states that, when no external forces are acting on a system, then the momentum is conserved. Specifically, **the total momentum of the system before and after any event remains the same**.
- The **law of conservation of angular momentum** states that, when the net external torque acting on a system is zero, its total angular momentum is conserved and hence, does not change.
- The **law of conservation of energy** states that energy can neither be created nor destroyed - only converted from one form of energy to another. This means that a system always has the same amount of energy, unless it's added from the outside. This is also called the **first law of thermodynamics**.

Q20. Air is said to be saturated when

- A. Its pressure is minimum
- B. It contains the maximum content of water vapour
- C. Its thickness is maximum
- D. It blows over the barren land
- E. None of the above/ More than one of the above

Answer: B

Explanation:

- Air is said to be saturated when the amount of **water vapour in the air is the maximum possible at an existing temperature and pressure**. Air is said to be saturated at 100 percent relative humidity when it contains the maximum amount of moisture possible at that specific temperature.
- Excess moisture leads to the formation of saturated air as brought about by the **conversion of moisture into dew**.