Physics - FSC Part 1 Physics Chapter 11 Short Questions Preparation

Q1. What is the similarity and difference between internal energy and gravitational P.E?

> **Ans 1:** Internal energy is similar to the gravitational P.E.So like the potential energy, it is the change in internal energy and not its absolute value, which is important.
> Internal energy depends upon temperature of the system while gravitational P.E depends on position of the particle.

Q2. Define absolute zero using the Carnot cycle.

> **Ans 1:** The Carnot cycle provides us the basis to define a temperature scale that is independent of material properties, Absolute zero is the lower limit of the thermodynamic temperature scale, a state at which the enthalpy and entropy of a cooled ideal gas reaches its minimum value, taken as zero(0). By international agreement, absolute zero is taken as - 273.15°c.

Q3. What is difference between isothermal and adiabatic process?

> **Ans 1:** Isothermal process: The process in which temperature of the system remains constant is called isothermal process.
> T= constant
> Adiabatic System: The process in which no heat enters or leaves the system is called adiabatic system.

Q4. Give an example of a natural process that involves an increase in entropy .

> **Ans 1:**

Q5. Define Heat Engine.

> **Ans 1:** A device which converts heat energy into mechanical work is called heat engine.

Q6. Define entropy,how it changes with temperature.

> **Ans 1:**

Q7. Define the term internal energy . Discuss in what form it is in an ideal gas.

> **Ans 1:** The sum of all forms of molecular energies such as kinetic and potential energy of a substance is called its internal energy.
> Internal energy of an ideal gas system is generally the translational kinetic energy of gas molecules.

Q8. Write kelvin statement of the second law of thermodynamics.

Ans 1: It is impossible to devise a process which may convert heat, extracted from a single reservoir, entirely into work without leaving any change in the working system.

Q9. State Carnot's theorem.

Ans 1: It states that no heat engine can be more efficient than a carnot engine operating between the same two temperatures.

Q10. What would be the heat lost if internal energy decreased by 10j and 20j of work is done on the system simultaneously

Ans 1: