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sub- physics.

std- s.y B.sc.

Topic-

THERMODYNAMICS.

Introduction-

The first **law of thermodynamics** refers to the conservation of different types of energy: Energy cannot be created or destroyed but is just transformed from one form into another. ... Internal energy is a state function, so its change in going between two states is the same, independently of the path the system has taken

What is Thermodynamics?

Thermodynamics in physics is a branch that deals with heat, work and temperature, and their relation to energy, radiation and physical properties of matter

Distinction Between Mechanics and Thermodynamics-

The distinction between mechanics and thermodynamics is worth noting. In mechanics, we solely concentrate on the motion of particles or bodies under the action of forces and torques.

Thermodynamics, on the other hand, is not concerned with the motion of the system as a whole. It is only concerned with the internal macroscopic state of the body.

Different Branches of Thermodynamics

Thermodynamics is classified into the following four branches:

Classical Thermodynamics

Statistical Thermodynamics

Chemical Thermodynamics

Equilibrium Thermodynamics

1)Classical Thermodynamics

In classical thermodynamics, the behaviour of matter is analyzed with a macroscopic approach. Units such as temperature and pressure are taken into consideration which helps the individuals to calculate other properties and to predict the characteristics of the matter that is undergoing the process.

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2)Statistical Thermodynamics

In statistical thermodynamics, every molecule is under the spotlight i.e. the properties of each and every molecule and ways in which they interact are taken into consideration to characterize the behaviour of a group of molecules

3)Chemical Thermodynamics

Chemical thermodynamics is the study of how work and heat relate to each other both in chemical reactions and in changes of states.

Equilibrium Thermodynamics

Equilibrium thermodynamics is the study of transformations of energy and matter as they approach the state of equilibrium

System

A thermodynamic system is a specific portion of matter with a definite boundary on which our attention is focussed. The system boundary may be real or imaginary, fixed or deformable. There are three types of system as:

Isolated System – An isolated system cannot exchange both energy and mass with its surroundings. The universe is considered an isolated system.

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THANK YOU