Statistical mechanics

Statistical concept : The classical theory is based on Newtonian mechanics ,when it is failed to explain the behaviour of electrons , radiation and photoelectric emission etc .

Quantum ideas were introduced to deal with the problem , today classical and quantum mechanics are in highly developed stage

yet they have a few draw backs , for instance as the number of bodies and systems increases both the approaches become complicated .

We can even say , the two body problems has not been solved perfectly even today in quantum mechanics .

Similarly , however perfect , the classical laws , if we apply them to a bulk of molecules of a gas enclosed in a chamber ,

we would apply only solve about 10^{23} equations of motion , which as it is not feasible .

Statistical mechanics

It deals with average properties of macroscopic bodies without bothering about their microscopic properties .

Statistical mechanics have been developed to study large systems. Larger the system better will be the result.

As a macro method is applied as a tool in many branch of physical science, where it has successfully explained properties such as energy distribution of simple gas particles , specific heat ,conductivity and dielectric constant etc.

It also explains the more complicated phenomena like condensation and electronic properties of metals.