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Subject :- Thermal Physics
Title :- Law Of Equality And Increase Or Loss

Abstract:-

In this research I have given Law of Equality and 2nd law of Law of Increase or Loss. I have given Equation of Law of Equality and 2nd law of Law of Increase or Loss.

Introduction:-

We know that the zeroth law is an important rule in thermodynamics. According to this law,"If two thermodynamic systems are each in thermal equilibrium with a third, then they are in thermal equilibrium with each other". This rule is practically true. The rule of my Law of equality and Law of Increase or loss is also related to this Law and it fully explains it.

Research Methodology (Process):-

Law of Increase or Loss

I have already discussed the first law of law of Increase or loss in my research "Temperature Differential Force".

Law of Increase or Loss can be divided into two parts:

1. Law of Increase and loss in heat¹⁹
2. Law of Increase and loss in temperature

1. Law of Increase and loss in heat:-

When systems with different temperatures are kept in touch with each other then, after the transfer of heat, increase or loss in the heating of any system is equal to the difference of average of initial heat of all systems and the initial heat of that system.

I.e.

$$\Delta Q_N = [(Q_1+Q_2+Q_3+\dots)/n] - Q_N$$

$$\Delta Q_N = Q_A - Q_N \quad \dots\dots[(Q_1+Q_2+Q_3+\dots)/n = Q_A]$$

Where N is the system whose heat has increased or lossed, Q_A is the average heat of the all system and Q_N is the initial heat of the system.

If ΔQ_N is negative then the heat of the system will be in loss and If ΔQ_N is positive then the system heat will increase.

Just like that

2. Law of Increase and loss in Temperature:-

When systems with different temperatures are kept in touch with each other then, after the transfer of heat, the increase or loss of temperature of any system is equal to the difference of the average of initial temperature of all systems and the initial temperature of that system. I.e.

$$\Delta T_N = [(T_1+T_2+T_3+\dots)/n] - T_N$$

$$\Delta T_N = T_A - T_N \quad \dots\dots[(T_1+T_2+T_3+\dots)/n = T_A]$$

Where N is the system whose Temperature has increased or lossed, T_A is the average of initial heat of all systems. and T_N is the initial temperature of the system.

If ΔT_N is negative then the Temperature of the system will be in loss and If ΔT_N is positive then the system Temperature will increase.

Law of equality

Law of equality can be divided into two parts:

1. Law of equality in heat
2. Law of equality in temperature

1. Law of equality in heat:-

When systems with different temperatures are kept in touch with each other then, after the transfer of heat, the heat of any system is equal to the average of initial heat of all systems. I.e.

$$Q_N = [(Q_1+Q_2+Q_3+\dots)/n]$$

$$Q_N = Q_A \quad \dots\dots[(Q_1+Q_2+Q_3+\dots)/n = Q_A]$$

Where Q_N is the heat of the that body after heat transfer, Q_A is the average of initial heat of all systems. Here N is any system and $N = 1, 2, 3, \dots, n$.

2. Law of equality in temperature:-

When systems with different temperatures are kept in touch with each other then, after the transfer of heat, the temperature of any system is equal to the average of initial temperature of all systems. I.e.

$$T_N = [(T_1+T_2+T_3+\dots)/n]$$

$$T_N = T_A \quad \dots\dots[(T_1+T_2+T_3+\dots)/n = T_A]$$

Where T_N is the temperature of the that body after heat transfer, T_A is the average of initial heat of all systems. Here N is any system and $N = 1, 2, 3, \dots, n$.

Condition:- Not all systems will absorb heat from the external environment nor will they emit heat in external environment.

Conclusion:-

1. In this research I have given Law of Equality and 2nd law of Law of Increase or Loss. I have given Equation of Law of Equality and 2nd law of Law of Increase or Loss.

2. We can fully explain zeroth law from Law of equality and Increase or loss.

Reference:-¹⁹ This Law is copied from Research paper "Temperature Differential Force" of RIST- Research Institute Of Science And Technology.