IF WE OPEN BOTH HOT AND COLD TAP AT THE SAME TIME WHICH LIQUID WILL EITHER LOOSE OR GAIN THE TEMPERATURE

Aakash Athale[1], Ninad Patil[2], Monica Bazzad[3]
[1,2]Student, Department of mechanical engineering, MVSIT Sonipat
[3]Project Guide, Department of mechanical engineering, MVSIT Sonipat
MAHAVIR SWAMI INSTITUTE OF TECHNOLOGY, SONIPAT HARYANA-131030

ABSTRACT: In this research paper we will study about one of the question never answer that "if we open both hot and cold water tap at same time then which water will change its temperature either cold water will get warm or hot water will be cooled. With the help of some references with can conclude the answer of the above question. In this research paper we will try to find out the answer of above question from different definitions and theories of various scientist in 'physics' and 'chemistry' .This research will help to clarify the doubts of the observation that may not be performed physically at once. All the supportive theories and logics will be used to propose a general research conducted on the basis of observation. The current situation is that we are assuming an ideal condition to get the concurrent result. From equilibrium to concept of heat transfer and heat dissipation in both ideal condition and real condition.

KEYWORDS- equilibrium, heat dissipation, ideal condition.

I. INTRODUCTION

The research will be conducted on the basis of both the view, we will first consider the question and then realise the condition applicable on it to find the sufficient result. So the question is "IF WE OPEN BOTH HOT AND COLD TAP AT THE SAME TIME IN SAME VESSAL, THE EITHER HOT WATER WILL GET WILL GET COLD OR COLD WATER WILL GGAIN THE HEAT OF HOT WATER"

If we consider it from the physics point of view the we will find out the condition will studied with the help of equilibrium in ideal condition which is defined as "In thermodynamics and chemical engineering, the vapour–liquid equilibrium (VLE) describes the distribution of a chemical species between the vapour phase and a liquid phase. ... The equilibrium vapour pressure of a liquid is in general strongly dependent on temperature. So let us study this as the system is in ideal condition that it will not going to lose any energy to the system so as to attain the equilibrium the hot and cold solution will act as the different products to form a new product with the a balanced temperature to be equal to the summation of the both hot and cold water

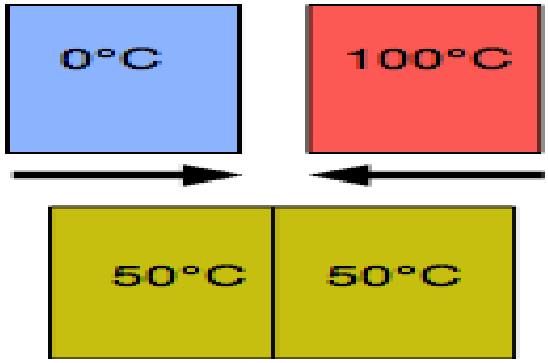

figure.1

Hence the final solution will be of a temperature that will balance the equation. But in actual condition the system will take some heat energy from the hot water and also provide some energy to cold water due to which some temperature will be loosed in the system and hence we will get an estimated temperature which depends upon the temperature of system too.

II. FROM THE POINT OF VIEW OF HEAT DISSIPATION

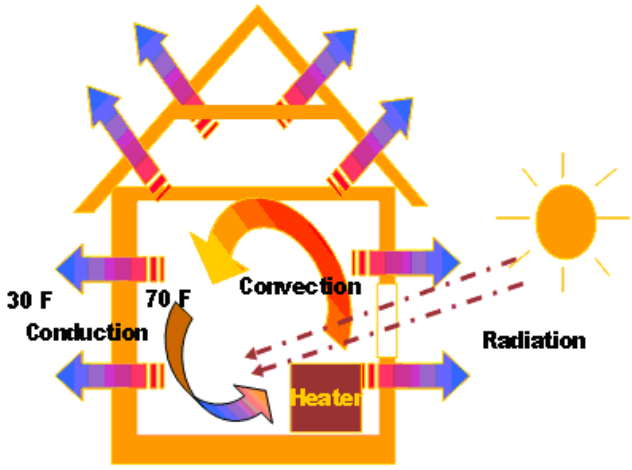

Figure.2

The system is an open system. Now hot water will lose its temperature in surroundings and the cold water will also absorb some heat from the surroundings other than their respective temperature.

FROM THE POINT OF VIEW OF CHEMICAL REACTION

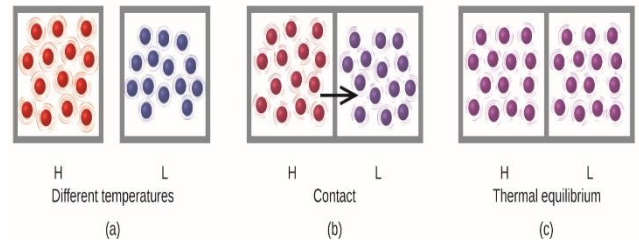

Figure.3

The different temperature of two liquid will counter each other to attain a stable condition to end the reaction towards the different temperature. Hence the temperature will around the mean of two temperature.

FROM THE HELP OF FLOW OF ENERGY

The energy always flow from the region of high concentration to low concentration. Hence the cold water will gain heat energy from hot water to make the system stable.

III. RESULT

The result of the reseach was clear the both the liquids will exchange the heat energy to make the system stable.

IV. CONCLUSION

Above research helps us to get the answer of question raised from a basic observaion and hence we found the answer theoratically, which can be further tested by two different immisible liquids with the help of pottasium disolvement in it.

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