**Assignment 1**

Sub-Food Thermodynamics(FPE121)

Problem 1. Explain entropy microscopically and statistically.

Problem 2. Differentiate between internal energy and enthalpy with suitable examples.

Problem 3. Which is higher Cp or Cv? why?

Problem 4. Make mathematical modelling for parameters of air viz. dry bulb temperature, wet bulb temperature and relative humidity using psychometric chart,

Problem 5. All spontaneous process are irreversible. Explain.

Problem 6. Give your opinion about inequality of clausius.

Problem 7. Give your views on “thermodynamics can explain gravity”.

Problem 8. Gather data for thermodynamic properties of food material and arrange in easy accessible way.

Problem 9. Derive a relation to estimate the difference between the two specific heats Cp and Cv of a substance and show that it is always positive. Use Maxwell relation.

Problem 10. Suppose the three variables x,y,z are related as f(x,y,z)=0, show that the cyclic relation among the three variables can be written as

Problem 11. Define the jacobian of x and y with respect to a and b.

**Note. For Problems 10 and 11 you can take help from Dr. Nitin Patel Sir. And find application for these problem in thermodynamic relations.**