INDIAN INSTITUTE of TECHNOLOGY PATNA

Department of Mechanical Engineering

ME546: Multiphase Flow and Heat Transfer

Quiz 02 **Last date of submission: 6th of February, 2017**

Instructions

1. Make a neat report (soft copy) and email to sudheer@iitp.ac.in.
2. Rename your report in the following format ME546_Spring_2017_Q2_Rollnumber.
3. Maintain consistency in the format: A4, Times New Roman, 12pt, 1 inch border (all sides), appropriate headings/sections.
4. Identify all the assumptions.
5. Properly present the correlations that are being used in the report and the range in which they are being used.
6. Present all your graph(s) with good resolution in the report. Axis labels, legends, and figure title are must. All legends should be of readable size and consistent with the report font and size (Times New Roman, > 10 pt).
7. List all the variables along with units (Nomenclature).
8. Bibliography is must for every correlation and the values/properties considered in this report. Bibliography should only contain scientific literature (**text books or journal papers**).

Problem statement

Determine the concentration of dissolved air in water at different temperature conditions. Plot in a single graph Solubility vs Temperature:

1. Nitrogen in water considering a constant H value
2. Oxygen in water considering a constant H value
3. Nitrogen in water considering H varying with temperature
4. Oxygen in water considering H varying with temperature

Write a small comment on the observations that see in the plot (H represents Henry's constant.)

End