Answer Sheets for CHE654 Homework Set #5
(100 Points)

Note: For all problems, submit a copy of your process flow diagram and a copy of your input summary of the process.

36. *Extracting Compound Y via an Evaporator and a Stripper Using Compound X* (25 points)

Answer the following questions:

Required heat transfer area of the evaporator = _____ ft^2

Concentration of Compound *Y* in the liquor stream from the evaporator = _____ mol%

Concentration of Compound *Y* in the outlet liquid stream of the stripper = _____ mol%

39. *Property Requirements and PCES, II* (25 points)

(a) Required parameters:

_____

_____

_____

_____

(b) Values of estimated parameters:

MW = _____; T_C = _____ K; P_C = _____ N/m^2

Z_C = _____; CPIG at 300 K = _____ J/kmol-K

DHFORM = _____ J/kmol; DGFORM = _____ J/kmol

OMEGA = _____; DHVLB = _____ J/kmol

VB = _____ m^3/kmol

(c) H_V^{IG} = _____ Btu/lbmol

H_L = _____ Btu/lbmol

(d) Tdew at 1 atm = _____ °C

Tdew at 50 atm = _____ °C

41. ***Recovering Acetone from a Wastewater Stream*** (25 points)

Answer the following questions:

D:F molar ratio in Column 1 = _____

Purity of acetone product stream = _____ mole%

42. ***Extractive Distillation, II*** (25 points)

Answer the following questions:

Mole % purity of butene in the distillate of the extractive column = _____

Mole % purity of butadiene in the distillate of the solvent recovery column = _____