Answer Sheets for CHE 654 Homework Set #2
(100 Points)

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

16. *Simulating Benzene-Toluene Recovery with ASPEN PLUS* (30 points)

i) Fractional conversion of the reaction = _____

ii) Actual reflux ratio of the column = _____

iii) Actual number of stages in the column = _____

iv) Purity of benzene in the column overhead = _____ mole%

v) Flow rate of the cooling water = _____ lbmol/hr

18. *Simulation of Benzene Production Using ASPEN PLUS* (30 points)

Flowrate of benzene procuct stream = _____ lbmol/hr

Purity of benzene in the product stream = _____ mol%

Required area in the heat exchanger = _____ ft^2

19. *Producing Cyclohexane from Benzene-Water Waste* (40 points)

(i) The purity (mole%) of cyclohexane:

Before the treatment unit = _____, After the treatment unit = _____

(ii) The required heat transfer area in the cooler = _____ ft^2

(iii) The temperature of the organic stream

Before entering the cooler = _____ °F, After exiting the cooler = _____ °F