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COLLEGE OF ENGINEERING

DEPARTMENT OF CHEMICAL AND PETROLEUM ENGINEERING B.ENG. CHEMICAL ENGINEERING PROGRAMME

Computer Applications in Chemical Engineering II (CHE 471) Assignment III

*Given Date: 17/10/2018
Submission Date: 22/10/2018*

PROBLEM STATEMENT

A mixture containing 40 wt% ethanol and 60 wt% n-heptane flowing at a rate of 100 g/min enters an extraction column through its 7th stage at a temperature and a pressure of 298 K and 1 bar, respectively. The solvent for the extraction, which is water, is passed into the column at 50 g/min through the 3rd stage of the column at the same temperature and pressure as those of the mixture. If the total number of stages of the column is 9, with the aid of ChemCAD, model and simulate the system. Estimate the compositions (mole percent, weight percent and volume percent) of the extract and the raffinate streams. Comment on the results obtained.