

UNIVERSITI MALAYSIA PAHANG
PROCESS CHEMISTRY AND PHARMA ENGINEERING
ASSIGNMENT 1



NAME : _____

MATRIC NO : _____

1. Two methanol-water mixtures are contained in separate flasks. The first mixture contains 40.0 wt% methanol, and the second contains 70.0 wt % methanol. If 200 g of the first mixture is combined with 150 g of the second, determine the mass and composition of the product.

(10 marks)

2. One thousand kilograms per hour of a mixture of benzene (B) and toluene (T) containing 50 % benzene by mass is separated by distillation into two fractions. The mass flow rate of benzene in the top stream is 450 kg B/h and that of toluene in the bottom stream is 475 kg T/h. The operation is at steady state. Write balances on benzene and toluene to calculate the unknown component flow rates in the output streams.

(5 marks)