

BEANT COLLEGE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF CHEMICAL ENGINEERING

CHEMICAL PROCESS SIMULATION( BTCH-801)

Assignment No# 1

Topics: Material Balance on CSTR & PFR

Note: Due date of submission: 22<sup>nd</sup> August 2016.

**Problem 1**

Write the component continuity equation describing the CSTR (Figure 1) with

- (a) Simultaneous reaction (first order and isothermal)
- (b) Reversible first order isothermal
- (c) Series reaction in isothermal system

**Problem 2**

Write the component continuity equation for a tubular reactor (Figure 2) with consecutive reaction

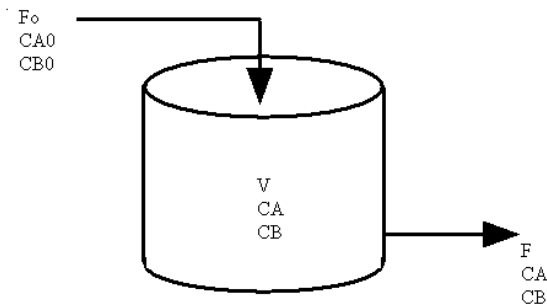


Figure 1

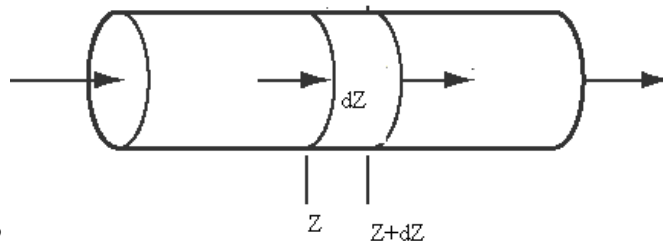


Figure2