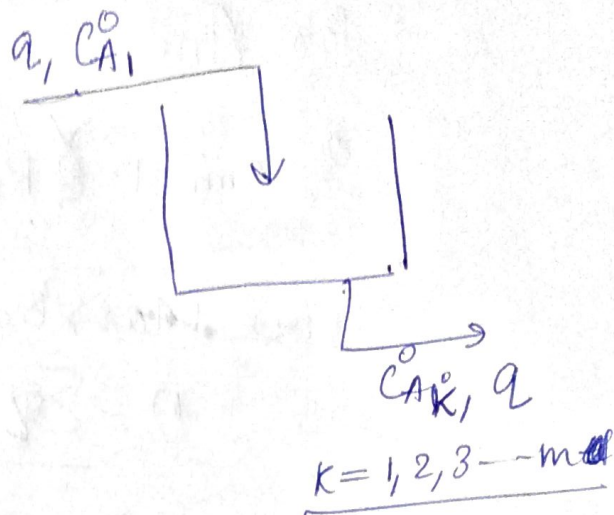
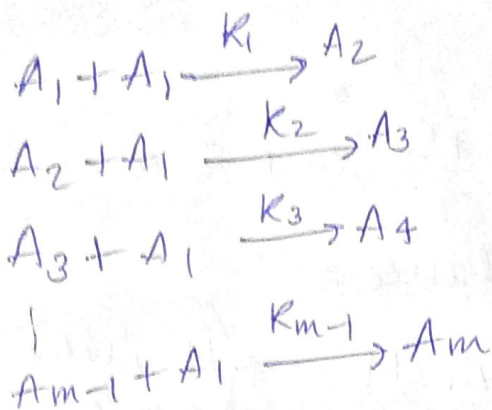


Q)6



given

$$r_i = \frac{k}{i} V \quad (i = 1 \text{ to } m-1)$$

Mass balance on  $A_1$

$$q C_{A1}^0 - q C_{A1} + (-r_1 C_{A1}^2) - q C_{A1} (-r_2 C_{A2} A_1) - q C_{A1} (-r_3 C_{A3} A_1) - \dots = 0$$

$$q C_{A1} + q C_{A1} (r_1 C_{A1}^2 + r_2 C_{A2} A_1 + r_3 C_{A3} A_1 + \dots + r_{m-1} C_{A_{m-1}} A_1) = 0$$

for  $A_2$

$$q (r_1 C_{A1}^2 - r_2 C_{A1} C_{A2}) = 0$$

for  $A_3$

$$q (r_2 C_{A2} C_{A1} - r_3 C_{A3} A_1) = 0$$

So Generalise equation for  $m = 2$  to  $m-1$

$$q (r_{m-1} C_{A_{m-1}} C_{A1} - r_m C_{A_m} C_{A1}) = 0$$

for  $m = 1$