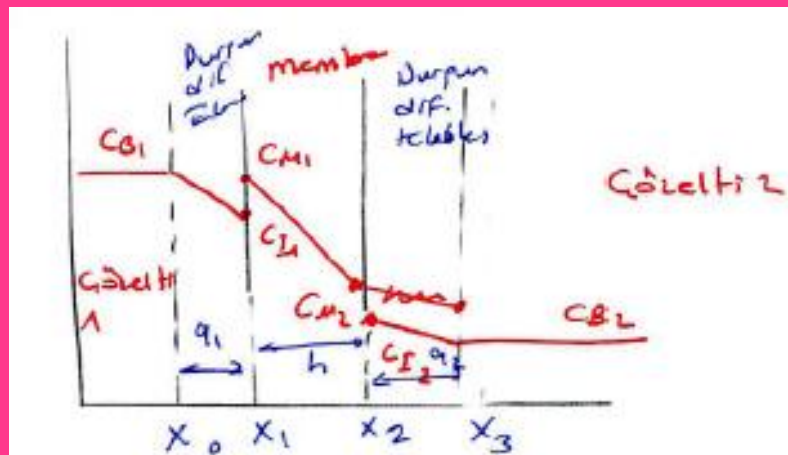


8) Bir Membrandan Pasif Difüzyon-Durgun Difüzyon Tabakası



$$J = -D \frac{dc}{dx} \quad \dots (1)$$

$$\int J dx = - \int D dc \quad \dots (2)$$

1. Durgun difüzyon bölgesinde

$$\underline{x_0 \leq x \leq x_1} \Rightarrow$$

$$J_1(x_1 - x_0) = -D_1(C_{11} - C_{01}) \quad \dots (3a)$$

$$C_{11} = C_{01} - \frac{J_1}{D_1}(x_1 - x_0) \quad \dots (3b)$$

Membranda

$$\underline{x_1 \leq x \leq x_2} \Rightarrow$$

$$J_M(x_2 - x_1) = -D_M(C_{M2} - C_{M1}) \quad \dots (4a)$$

$$C_{M2} = C_{M1} - \frac{J_M}{D_M}(x_2 - x_1) \quad \dots (4b)$$

2. Durgun difüzyon bölgesinde

$$\underline{x_2 \leq x \leq x_3}$$

$$S_2 (x_3 - x_2) = -D_2 (C_{B2} - C_{I2}) \quad \dots (5a)$$

$$C_{B2} = C_{I2} - \frac{S_2}{D_2} (x_3 - x_2) \quad \dots (5b)$$

$$C_{M1} = K_{M1} C_{I1} \quad K_{M1} = \frac{C_{M1}}{C_{I1}} \quad \dots (6)$$

$$C_{M2} = K_{M2} C_{I2} \quad \dots (7)$$

4-b'den

$$C_{M2} = C_{M1} - \frac{J_M}{D_M} (x_2 - x_1) \text{ idé}$$

$$C_{M2} = K_{M1} C_{I1} - \frac{J_M}{D_M} (x_2 - x_1) \quad \dots (8)$$

3-b' den

$$C_{I_1} = C_{B_1} - \frac{J_1}{D_1} (x_1 - x_0) = C_{B_1} - \frac{J_1}{D_1} q_1 \quad \text{--- (9)}$$

8 ve 9- den

$$C_{M_2} = K_{M_1} \left(C_{B_1} - \frac{J_1}{D_1} q_1 \right) - \frac{J_M}{D_M} h \quad \text{--- (10)}$$

5-b' den

$$C_{B_2} = C_{I_2} - \frac{J_2}{D_2} (x_3 - x_2) = C_{I_2} - \frac{J_2}{D_2} q_2 \quad \text{--- (11)}$$

2'nci inden

$$C_{B2} = \frac{C_{M2}}{k_{M2}} - \frac{J_2}{D_2} q_2 \quad \dots (12)$$

(10) ve (12) den

$$C_{B2} = \frac{k_{M1}}{k_{M2}} \left(C_{B1} - \frac{J_1}{D_1} q_1 \right) - \left(\frac{J_{M1}}{k_{M2}} \right) \left(\frac{h}{D_{M1}} \right) - \frac{J_2}{D_2} q_2 \quad \dots f.13)$$

$$R_1' = \frac{q_1}{D_1} \quad , \quad R_2' = \frac{q_2}{D_2} \quad \text{ve} \quad R_M' = \frac{h}{D_{M1}} \quad \text{ise} \quad \dots f.19)$$

$$C_{B2} = \frac{k_{M1}}{k_{M2}} (C_{B1} - R_1' J_1) - \left(\frac{J_{M1}}{k_{M2}} \right) R_M' - J_2 R_2' \quad \dots (20)$$

○ Yatışkın koşul

$$J_1 = J_m = J_2 = J \quad \dots \quad (21)$$

$$C_{B2} = \left(\frac{k_{M1}}{k_{M2}} \right) (C_{B1} - J R_1') - \left(\frac{J}{k_{M2}} \right) k_{M1}' - J R_2' \dots (22)$$

$$J = \frac{k_{M1} C_{B1} - k_{M2} C_{B2}}{(k_{M1} R_1' + k_{M2} R_2') + R_m'} \quad \dots \quad (23)$$