

Nama : Mella Ambar Wati

NPM : 1813023082

Kelas : B

3-1. Diketahui : $W_0 = 100\% = 1$

% ekstraksi = 99,9%

$W_A = W_0 - \% \text{ ekstraksi}$

$= 100\% - 99,9\% = 0,1\%$

$= 0,001$

$V_a = 50 \text{ ml}$

$V_e = 50 \text{ ml}$

$n = 5$

Ditanya K_D ?

Penyelesaian :

$$W_A = W_0 \left(\frac{V_A}{V_A + K_D V_e} \right)^n$$

$$1 = (0,001 + 1) 25,0$$

$$1 = 0,0025,0 + 25,0$$

$$25,0 = 0,0025,0$$

$$K_D = 0,0025$$



$$0,001 = 1 \left(\frac{50 \text{ ml}}{50 \text{ ml} + K_D 50 \text{ ml}} \right)^5$$

$$0,001 = 1 \left(\frac{50 \text{ ml}}{50 \text{ ml} (1 + K_D)} \right)^n$$

$$0,001 = 1 \left(\frac{1}{1 + K_D} \right)^5$$

$$\left(0,001 = \left(\frac{1}{1 + K_D} \right)^5 \right)^{1/5}$$

$$0,25 = \frac{1}{1 + K_D} \Rightarrow 0,25 (1 + K_D) = 1$$

$$0,25 + 0,25 K_D = 1$$

$$0,25 K_D = 0,75$$

$$K_D = 3$$

