

## KUNCI JAWABAN SOAL TES FORMATIF SIKLUS 1

1. Dik : Volume NaCl = 50 ml

$$[\text{NaCl}] = 5 \text{ M}$$

Ditanya : Massa Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> terlarut =.....?

Jawab :

$$M = \frac{\text{mol}}{V}$$

$$5M = \frac{\text{mol}}{0,05}$$

$$\text{Mol} = 0,25 \text{ mol}$$

$$\text{NaCl terlarut} = 0,25 \times 36,5$$

$$= 9,125 \text{ gram}$$

2. Dik : % massa NH<sub>3</sub> = 25 %

$$\rho = 0,9 \text{ kg/L}$$

$$\text{Mm NH}_3 = 17 \text{ gr/mol}$$

Ditanya : a.  $M_{\text{NH}_3} = \dots \dots ?$

b.  $V_{\text{NH}_3}$  yang diperlukan untuk membuat 500 mL larutan NH<sub>3</sub> 2M ?

Jawab : a. Dalam 100 % larutan NH<sub>3</sub> ada 0,9 kg/L

$$\text{Massa 1L larutan NH}_3 = 0,9 \text{ kg}$$

$$= 900 \text{ gram}$$

$$\begin{aligned} \text{Massa NH}_3 25\% &= \frac{25}{100} \times 900 \text{ gram} \\ &= 225 \text{ gram} \end{aligned}$$

$$\begin{aligned} \text{mol NH}_3 &= \frac{225 \text{ gram}}{17 \text{ gr/mol}} \end{aligned}$$

$$= 13,23 \text{ mol}$$

$$\begin{aligned} M \text{ NH}_3 &= \frac{13,23 \text{ mol}}{1L} \end{aligned}$$

$$= 13,23 \text{ M}$$

$$\text{b. } V_1 \times M_1 = V_2 \times M_2$$

$$V_1 \times 13,23 M = 500 \text{ mL} \times 2M$$

$$\begin{aligned} V_1 &= \frac{500 \text{ mL} \times 2M}{13,23M} \\ &= 75,58 \text{ mL} \end{aligned}$$

3. Diket  $V_1 = 10 \text{ ml}$

$$M_1 = 5 \text{ M}$$

$$M_2 = 0,2 \text{ M}$$

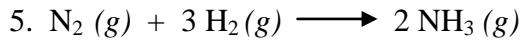
Ditanya  $V_2 = \dots \text{?}$

$$\text{Jawab: } V_1 \times M_1 = V_2 \times M_2$$

$$10 \times 5 \text{ M} = V_2 \times 0,2 \text{ M}$$

$$\begin{aligned} V_1 &= \frac{50 \text{ M}}{0,2 \text{ M}} \\ &= 250 \text{ mL} \end{aligned}$$

4. Laju reaksi adalah laju berkurangnya konsentrasi pereaksi atau bertambahnya konsentrasi zat hasil reaksi setiap satu satuan waktu (detik)



❖ Ungkapan laju reaksi diatas untuk masing-masing pereaksi :

$$v_{N_2} = \frac{-\Delta[N_2]}{\Delta t}$$

$$v_{H_2} = \frac{-\Delta[H_2]}{\Delta t}$$

$$v_{NH_3} = \frac{\Delta[NH_3]}{\Delta t}$$

❖ Hubungan antara  $v N_2$  dengan  $v H_2$  maupun  $v NH_3$  :

$$v = \frac{-\Delta[N_2]}{\Delta t} = -\frac{1}{3} \frac{\Delta[H_2]}{\Delta t} = \frac{1}{2} \frac{\Delta[NH_3]}{\Delta t}$$