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Pilihan Ganda.

1.) $M = \dfrac{n}{V}$

$n\ NaCl = \dfrac{120\ g}{58,5\ mol/gr}$

$n\ NaCl = 2,05\ mol$

$M = \dfrac{2,05\ mol}{0,4\ L} = 5,12\ M$

$M \approx 5,15\ M \quad (e)$

2.) $M_r\ NaOH = A_r\ Na + A_r\ O + A_r\ H$

$= 23 + 16 + 1$

$= 40\ g/mol$

$M = \dfrac{n}{V}$

$0,1 = \dfrac{n}{0,1}$

$n = 0,1\ mol/L \cdot 0,1\ L$

$= 0,01\ mol$

massa $NaOH = n \times m_r$

$= 0,01 \times 40$

$= 0,4\ gr \quad (b)$

3.) e

4.) a

5.) $N_2(g) + 3H_2(g) \rightarrow 2NH_3 \quad \Delta H = -92\ kJ$

$2NH_3(g) \rightarrow N_2(g) + 3H_2(g) \quad \Delta H = +92\ kJ$

$NH_3(g) \rightarrow \frac{1}{2}N_2(g) + \frac{3}{2}H_2(g) \quad \Delta H = +46\ kJ \quad (c)$
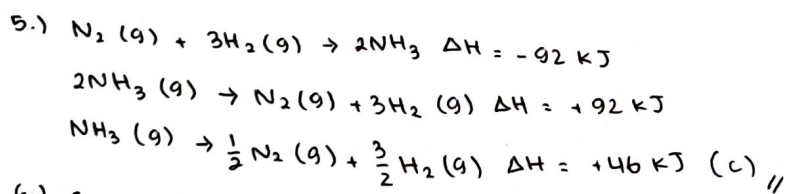
6.) $q = m \times c \times \Delta T$

$q = 500 \times 4,2 \times 276$

$q = 579.600\ J$

$q = 579,6\ kJ \quad (c)$

7.) e

8.) a. $+0,80 - (-0,34) = 1,14\ V$

b. $-1,20 - (-2,34) = 1,14\ V$

c. $+0,80 - (-1,20) = 2\ V$

d. $-1,20 - (-0,34) = -0,86\ V$

(e.) $-0,34 - (-1,20) = 0,86\ V$

9.) e

10.) $V_1 . M_1 = V_2 . M_2$

$500 . 0,05 = x . 5$

$25 = 5x$

$5 = x \quad (a)$

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Essay

1.) a.) orde A

$$\frac{V_4}{V_1} = \frac{k[P][Q]}{k[P][Q]}$$

$$\frac{0,024}{0,096} = \frac{k[0,02]^x[0,20]^y}{k[0,04]^x[0,20]^y}$$

$$\frac{1}{4} = \left(\frac{1}{2}\right)^x$$

$$x = 2$$

orde B

$$\frac{V_3}{V_2} = \frac{k[P][Q]}{k[P][Q]}$$

$$\frac{0,024}{0,048} = \frac{k[0,02]^x[0,2]^y}{k[0,02]^x[0,4]^y}$$

$$\frac{1}{2} = \left(\frac{1}{2}\right)^y$$

$$y = 1$$

orde total

$$x + y = 2 + 1 = 3$$

b.) $v = k[P]^2[Q]$

c.) $v_1 = k[P]^2[Q]$

$$k = \frac{v_1}{[P]^2[Q]}$$

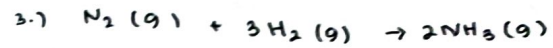$$= \frac{0,096}{[0,04]^2[0,2]}$$

$$= 300 \ m/s$$

2.) $\Delta T_f = \frac{M \ glukosa}{Mr} \times \frac{1000}{Mair} \times K_f$

$$0,18 = \frac{9}{180} \times \frac{1000}{1000} \times 1,86$$

$$0,18 = \frac{0,18 \times 180}{1,86} = 17,42 \ gr$$

3.) $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$

mula 0,5	1,5	-
reaksi 0,25	0,75	0,5
sisa 0,25	0,75	0,5

$$P \ N_2 = \frac{0,25}{1,5} \times 3 = 0,5 \ atm$$

$$P \ 3H_2 = \frac{0,75}{1,5} \times 3 = 1,5 \ atm$$

$$P \ 2NH_3 = \frac{0,5}{1,5} \times 3 = 1 \ atm$$

* $Kp = \frac{(P \ NH_3)^2}{(PN_2 \cdot PH_2)^3}$

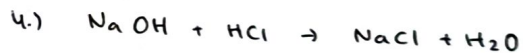$$= \frac{(1)^2}{(0.5 \cdot 1.5)^3} = 0,5926$$

* $Kc = \frac{Kp}{RT^n}$ $n = 2-4 = -2$

$$= \frac{0,5926}{(0,082 \times 400)^2}$$

$$= 0,5926 \times (0,082 \times 400)^2$$

$$= 637,5$$

4.) $NaOH + HCl \rightarrow NaCl + H_2O$

m	20	10	-
r	10	10	10
s	10	-	10
			10

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

$$= \frac{10}{200} = 0,05 \ M$$

$P \ OH = -log[OH^-] \rightarrow [OH^-] = x \cdot M_b$

$$= -log[5 \times 10^{-2}] \qquad = 1.5 \times 10^{-2}$$

$$= 2 - log \ 5 \qquad\qquad = 5 \times 10^{-2}$$

$P H = 14 - (2 - log \ 5)$

$$= 14 - 2 + log \ 5$$

$$= 12 + log \ 5$$

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5.) $w = e \cdot i \cdot t$

$6.35 = \dfrac{6.35}{2} \cdot i \cdot t$

$i \cdot t = \dfrac{2}{10} = 0,2$

$w = e \cdot i \cdot t$

$w = \dfrac{108}{1} \cdot it$

$w = 108 \cdot 0,2$

$w = 21,6$ gram //