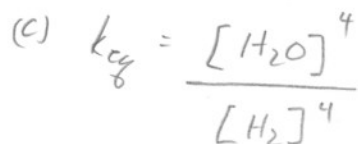
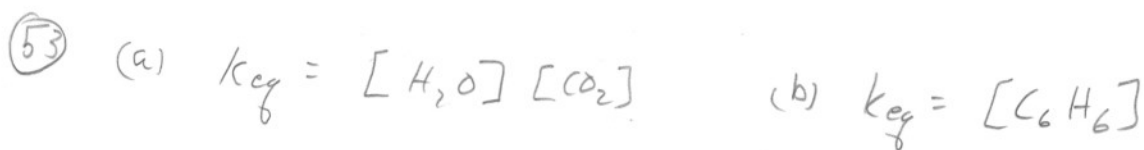
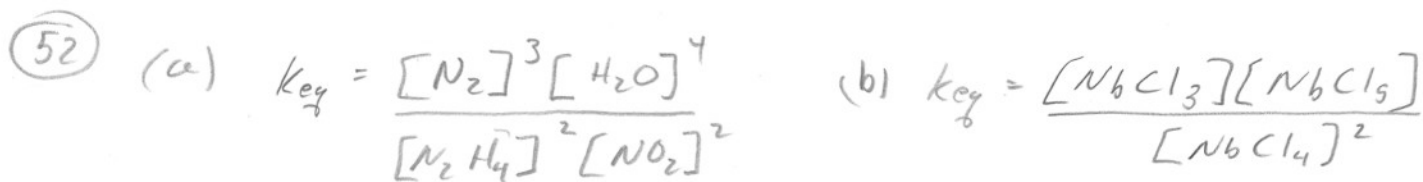


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(54) $H = 1.0 \text{ g/mol}$
 $O = 16 \text{ g/mol}$

$H_2O = 18 \text{ g/mol}$

so 1 g is $\frac{1}{18} = 0.056 \text{ mol}$

concentration is $\frac{\text{mol}}{\text{L}}$ so ... $\frac{0.056 \text{ mol}}{0.001 \text{ L}} = \underline{56 \text{ mol/L}}$

(55) $k_{eq} = \frac{[SO_2]^2 [O_2]}{[SO_3]^2}$
 $= \frac{(0.00560 \text{ mol/L})^2 (0.00210 \text{ mol/L})}{(0.0160 \text{ mol/L})^2}$
 $= 2.57 \times 10^{-4}$

$$\textcircled{56} \quad k_{eq} = \frac{[C]}{[A][B]^2} \quad k_{eq} = 3.63$$

Reaction 1

$$k_{eq} = \frac{(.7)}{(.5)(.621)^2} = 3.63$$

this is at equilibrium

Reaction 2

$$k_{eq} = \frac{(.25)}{(.25)(.525)^2} = 3.63$$

this is at equilibrium.

$$\begin{aligned} \textcircled{57} \quad k_{eq} &= [NH_3][HCl] \\ &= (0.066 \text{ mol/L})(0.066 \text{ mol/L}) \\ &= \underline{4.36 \times 10^{-3}} \end{aligned}$$

$\textcircled{58}$ molar concentration is $\frac{\text{mol}}{\text{L}}$

$$\text{Volume: } (5.25 \text{ cm})^3 = 144.7 \text{ cm}^3 = 0.1447 \text{ L}$$

$$\text{moles: } \frac{1076.6 \text{ g}}{55 \text{ g/mol}} = 19.57 \text{ mol}$$

So...

$$\text{molar concentration} = \frac{19.57 \text{ mol}}{0.1447 \text{ L}} = \underline{135 \text{ mol/L}}$$