

CHM 1001 General Chemistry

Assignment Answers

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Part 1: Multiple-choice questions

Question No.	Answers
1	E
2	B
3	C
4	B D
5	B A
6	C
7	D
8	B E
9	B C
10	D
11	C
12	E
13	D
14	B
15	D
16	A
17	A
18	C
19	C
20	E
Grades	

Part 2: Short answer questions (You can add pages if needed)

$$1. m_1 C_1 \Delta T_1 = m_2 C_2 \Delta T_2$$

$$250 \cdot 4,184 \cdot (78 - 76,9) = m \cdot (0,129) \cdot (76,9 - 2,30)$$

$$m = \frac{1150,6}{9,6234} \text{ gr}$$

$$= 119,56 \text{ gr}$$

2.2, to keep $[H^+]$ stable (i.e. resist the change of pH)

b, salt ~~will~~ will dissociate to ions (the ~~the~~ counteracting the strong base)

c. $F^-_{(aq)} + H_3O^+_{(aq)} \rightleftharpoons HF_{(aq)} + H_2O_{(l)}$ (the addition of F^- with acids will increase $[HF]$ and therefore there's a slight decrease on pH)

d. $HF_{(aq)} + OH^-_{(aq)} \rightleftharpoons F^-_{(aq)} + H_2O_{(l)}$ (the addition of HF with bases will increase $[F^-]$ and therefore there's a slight increase on pH)

3. STP:

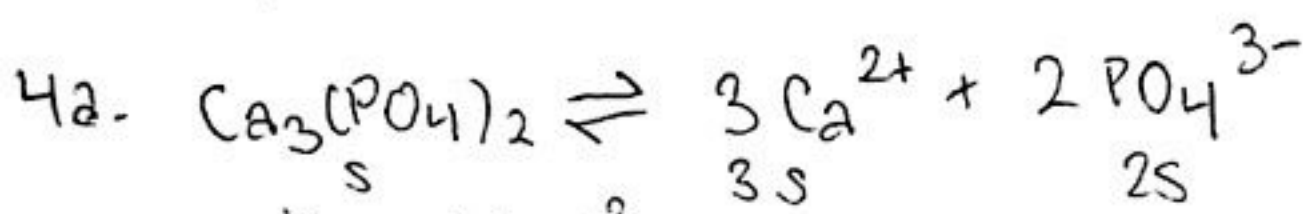
$$\hookrightarrow T = 273^\circ \text{K}$$

$$\hookrightarrow P = 1 \text{ atm}$$

standard state:

$$\hookrightarrow T = \text{mostly } 298^\circ \text{K}$$

$$\hookrightarrow P = 1 \text{ atm}$$



$$K_{sp} = (3s)^3 (2s)^2$$

$$2.0 \times 10^{-33} = 108 s^5$$

$$s = 1.13 \times 10^{-7} \text{ M}$$

$$b. s \times M_m = \frac{1.13 \times 10^{-7}}{1} \cdot 100 \cdot \frac{10^{-3}}{1} \cdot 310 \text{ g/100g solvent}$$

$$= 3.503 \times 10^{-6} \text{ g/100g solvent}$$

$$5. K = e^{-\frac{\Delta G}{RT}}$$

$$= e^{-\frac{(-166.27 + 50.75) \cdot 1000 \text{ J/mol}}{9.314 \cdot 298}}$$

$$= 1.78 \cdot 10^{26}$$