



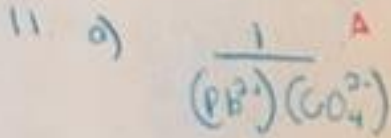
Unit 4 Version 2 SCH4U Answer Key

Section 1

1 A 2 E 3 C 4 A 5 D 6 D 7 B 8 C 9 D 10 C TOK

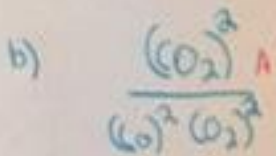
Section 2

1.



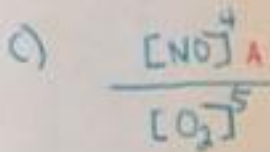
11.

Right ^A

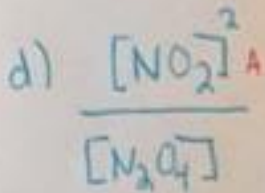


Right ^A

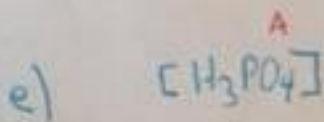
TOK



Left ^A



Left ^A



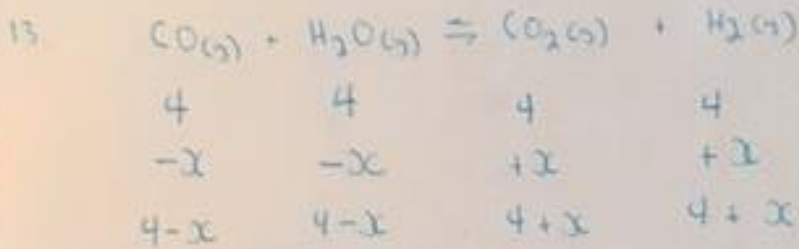
Right ^A



Section 3

$$12 \quad \frac{[\text{SO}_2\text{Cl}_2]^A}{[\text{SO}_2][\text{Cl}_2]} = \frac{1.20^A}{(1.78)(0.90)} = \frac{1.20}{1.60} = 0.75^A$$

3T



AT

$$K = \frac{[\text{CO}][\text{H}_2]}{[\text{CO}_2][\text{H}_2\text{O}]}$$

$$4.2 = \frac{(4+x)(4+x)}{(4-x)(4-x)}, \text{ AT}$$

$$\sqrt{4.2} = \frac{(4+x)}{(4-x)}$$

$$4+x = \sqrt{4.2} \times (4-x)$$

$$4+x = (2.050)(4-x)$$

$$4+x = 8.2 - 2.050x$$

$$3.050x = 4.2$$

$$x = \frac{4.2}{3.050}$$

$$x = 1.377 \text{ AT}$$

$$[\text{H}_2] = 4 + x = 4 + 1.377 = 5.377 \text{ mol/L}$$

m.2



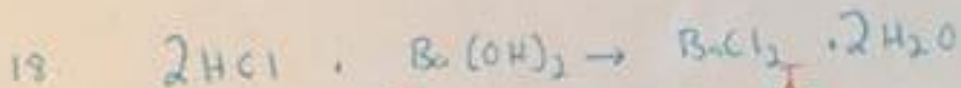
$$14. [H^+] = 10^{-pH} = 10^{-5.30} = 4.79 \times 10^{-6} \text{ mol/L} \quad \checkmark \checkmark$$

$$15. pH = 14 - pOH = 14 - 8.50 = 5.50 \quad \checkmark \checkmark$$

$$16. pH = -\log[H^+] = -\log(0.045) = 1.35 \quad \checkmark \checkmark$$

$$pOH = 14 - 1.35 = 12.65$$

$$17. 0.2 \frac{\text{mol}}{\text{L}} \times 0.05 \text{ L} \times \frac{1}{1} \times \frac{1}{0.02 \text{ L}} = \frac{0.01 \text{ mol}}{0.02 \text{ L}} = 0.5 \text{ mol/L}$$



$$0.1 \frac{\text{mol}}{\text{L}} \times 0.01552 \text{ L} \times \frac{1 \text{ Ba(OH)}_2}{2 \text{ HCl}} \times \frac{1}{0.025 \text{ L}} = \frac{0.001552 \text{ mol}}{0.05 \text{ L}}$$

$$= 0.031 \text{ mol/L} \quad \checkmark \checkmark$$

Section 4

19. a) More HbO_2 separates into Hb and O_2 . Not as much O_2 is carried to the tissues, the climber feels fatigued. Equilibrium shifts right.

b) More Hb causes equation to shift left, producing more HbO_2 , more oxygen is carried to tissues.

3A2C

20. a) A strong acid against a strong base would be most efficient because proportionally they would contribute the same amount of ~~hydroxide~~ dissociated acid and base to the reaction.

b) titration, pH meter

3A2C