

Final review study guide

[Business](#)



Quiz 1- 4, 5, 12 Quiz 3- 14, 16, 18 14. What is the electron configuration for aluminum? $1s^2 2s^2 2p^6 3s^2 3p^1$ 16. The number of electron levels in a magnesium atom is 3, because magnesium is in period number 3. 18.

What is the abbreviated electron configuration for nickel (atomic number 28)? $[\text{Ar}]4s^2 3d^8$ Quiz 5- 4, 14, 18 5. The ion of aluminum is Answer: Al^{3+} .

14. How many valence electrons are in the electron-dot structure of H_2O ? Answer: The number of valence electrons in H_2O is $= (2 \times 1) + (1 \times 6) = 8$ electrons. 18. The shape of the carbon tetrachloride molecule is Answer: tetrahedral Quiz 6- 1, 3, 18 1.

What coefficient is placed in front of O_2 to complete the balancing of the following equation? $\text{C}_5\text{H}_8 + ? \text{O}_2 \rightarrow 5\text{CO}_2 + 4\text{H}_2\text{O}$ Answer: 7 3. What is oxidized and what is reduced in the following reaction? $2\text{Al}(\text{s}) + 3\text{Br}_2(\text{g}) \rightarrow 2\text{AlBr}_3(\text{s})$. Answer: Al (goes from oxidation state 0 to +3) is oxidized and Br_2 (goes from oxidation state 0 to -1) is reduced. 18. How many grams of CO_2 are produced from 125 g of O_2 and excess CH_4 ? $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$ Answer: 85. 9 g of CO_2 Quiz 8- 10, 15, 19 8.

When solutions of KCl and $\text{Pb}(\text{NO}_3)_2$ are mixed, a precipitate forms. Which of the following is the balanced equation for the double replacement reaction that occurs? $2\text{KCl}(\text{aq}) + \text{Pb}(\text{NO}_3)_2(\text{aq}) \rightarrow 2\text{KNO}_3(\text{aq}) + \text{PbCl}_2(\text{s})$ 15. What is the molarity of a solution that contains 17 g of NH_3 in 0. 50 L of solution? 2. 0 M 19. What volume of 0.

10 M NaOH can be prepared from 250. mL of 0. 30 M NaOH ? 0. 75 L Quiz 9- 3, 9, 12 3. For the following equilibrium reaction, which cause and effect are correctly matched? $\text{CO}(\text{g}) + 2\text{H}_2(\text{g}) \rightleftharpoons \text{CH}_3\text{OH}(\text{g}) + \text{heat}$ remove H_2 , shift left 9.

Which of the following equilibrium constants indicates the reaction that gives the smallest amount of product? $K_c = 5 \times 10^{-10}$ 12.

The reaction for the decomposition of PCl_5 to chlorine and PCl_3 is shown below. $\text{PCl}_5(\text{g}) \rightleftharpoons \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$ If the equilibrium concentrations are $[\text{PCl}_5] = 1.0 \text{ M}$, $[\text{PCl}_3] = 0.10 \text{ M}$, $[\text{Cl}_2] = 0.10 \text{ M}$, what is the value of the equilibrium constant? 1.0×10^{-2} Quiz 10- 4, 7, 15 4.

The conjugate base of HClO_3 is Answer: ClO_3^- 7. What is the pH of a solution with $[\text{H}_3\text{O}^+] = 1 \times 10^{-9} \text{ M}$? Answer: 9. 25. 0 mL of 0.212 M NaOH is neutralized by 13.

6 mL of an HCl solution. The molarity of the NaOH solution is Answer: Quiz 7- 5, 9, 17 5. The temperature of a 500. mL sample of gas increases from 150. K to 350. K.

What is the final volume of the sample of gas, if the pressure in the container is kept constant? 1170 mL 9. A gas sample contains 4.0 g of CH_4 and 2.0 g of He. What is the volume of the sample at STP? 17 L 17.

At STP, what is the volume of 4.50 moles of nitrogen gas? 101 L Quiz 4- 9, 15, 16 9. When aluminum-27 is bombarded with a neutron, a gamma ray is emitted. What radioactive isotope is produced? aluminum-28 15. The half-life of bromine-74 is 25 min.

How much of a 4.0 mg sample is still active after 75 min? 0.50 mg 16. In the sun, nuclei of hydrogen combine to form a larger nucleus and release a great amount of energy. The process is known as fusion.