

# [Chemistry: study guide](https://assignbuster.com/chemistry-study-guide/)

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\* Question 1 10 out of 10 points | | | According to VSEPR theory, which one of the following molecules should have a bent  shape? Answer| | | | | Selected Answer:|   Cl2O| | | | | \* Question 2 10 out of 10 points | | | According to the VSEPR theory, the molecular shape of SiCl4 isAnswer| | | | | Selected Answer:|   tetrahedral. | | | | | \* Question 3 10 out of 10 points | | | According to the VSEPR theory, the shape of the SO3 molecule isAnswer| | | | | Selected Answer:| trigonal planar. | | | | | \* Question 4 10 out of 10 points | | Balance the following equation using the smallest set of whole numbers, then add together the coefficients. Don't forget to count coefficients of one. \_\_\_ Al + \_\_\_ H2SO4 > \_\_\_ Al2(SO4)3 + \_\_\_ H2 The sum of the coefficients isAnswer| | | | | Selected Answer:|   9. | | | | | \* Question 5 10 out of 10 points | | | Consider the species Cl2+, Cl2, and Cl2?. Which of these species will be paramagnetic? Answer| | | | | Selected Answer:|   Cl2+ and Cl2? | | | | | \* Question 6 10 out of 10 points | | | How many O atoms are there in 51. 4 g CaSO4?

Answer| | | | | Selected Answer:|   9. 09 ? 1023| | | | | \* Question 7 10 out of 10 points | | | How many covalent bonds will a nitrogen atom usually form? Answer| | | | | Selected Answer:|   3| | | | | \* Question 8 10 out of 10 points | | | How many grams of Cl2 can be prepared from the reaction of 16. 0 g of MnO2 and 30. 0 g of HCl according to the following chemical equation? MnO2 + 4HCl > MnCl2 + Cl2 + 2H2OAnswer| | | | | Selected Answer:|   13. 0G| | | | | \* Question 9 10 out of 10 points | | | How many grams of sodium are there in 10. g of sodium sulfate, Na2SO4?

Answer| | | | | Selected Answer:| 3. 2| | | | | \* Question 10 10 out of 10 points | | | In which of the following would the bonding be weakened with the addition of an electron to form the negative molecular ion? Answer| | | | | Selected Answer:|   N2| | | | | \* Question 11 0 out of 10 points | | | In which of these pairs of atoms would the bond have the greatest percent ionic character (i. e. , most polar)? Answer| | | | | Selected Answer:| c-o  s-o f--f| | | | | \* Question 12 10 out of 10 points | | | Indicate the type of hybrid orbitals used by the central atom in PCl3.

Answer| | | | | Selected Answer:|   sp3| | | | | uestion 13 10 out of 10 points | | | The F? S? F bond angles in SF6 areAnswer| | | | | Selected Answer:|   90° and 180°. | | | | | \* Question 14 10 out of 10 points | | | The Lewis dot symbol for the a lead atom isAnswer| | | | | Selected Answer:|   | Not A| | | | \* Question 15 10 out of 10 points | | | The Lewis structure for CS2 is: Answer| | | | | Selected Answer:|   | | | | | \* Question 16 10 out of 10 points | | | The number of pi bonds in the molecule below is Answer| | | | | Selected Answer:|   3| | | | | Question 17 10 out of 10 points | | | The number of resonance structures for the nitrate ion that satisfies the octet rule isAnswer| | | | | Selected Answer:| 3| | | | | Question 18 Question 18 10 out of 10 points | | | The shape of the CS2 molecule is best described asAnswer| | | | | Selected Answer:|   linear. | | | | | | | | \* Question 19 0 out of 10 points | | | What is the formal charge on sulfur in the best Lewis structure for the SCN? (thiocyanate) ion? Answer| | | | | Selected Answer:|   ? 1 +2 -2+1| | | | | \* Question 20 10 out of 10 points | | What type of chemical bond holds the atoms together within a water molecule? Answer| | | | | Selected Answer:|   Polar covalent bond Question 2110 out of 10 points | | | When 22. 0 g NaCl and 21. 0 g H2SO4 are mixed and react according to the equation below, which is the limiting reagent? 2NaCl + H2SO4 > Na2SO4 + 2HClAnswer| | | | | Selected Answer:| | | | | | | | | | \* Question 22 10 out of 10 points | | | Which of the following correctly lists species in order of increasing bond length? Answer| | | | | Selected Answer:|   O2+ ; O2 ; O2? | | | | | \* Question 23 0 out of 10 points | | | Which of these atom is the most electronegative? Answer| | | | | Selected Answer:|   P| | | | | Question 24 10 out of 10 points | | | Which of these compounds is most likely to be ionic? Answer| | | | | Selected Answer:|   KF| | | | | \* Question 25 10 out of 10 points | | | Which of these elements is most likely to exhibit an expanded octet in its compounds? Answer| | | | | Selected Answer:| s| | | | | \* Question 26 0 out of 10 points | | | Which of these ionic solids would have the largest lattice energy? Answer| | | | | Selected Answer:|   CaBr2NaF, NaCl| | | | \* Question 27 10 out of 10 points | | | Which of these pairs of elements would be most likely to form an ionic compound? Answer| | | | | Selected Answer:|   Cl ; Mg| | | | | \* Question 28 10 out of 10 points | | | Which of these substances will display an incomplete octet in its Lewis structure? Answer| | | | | NO| | | | | uestion 29 10 out of 10 points | | | Which response includes all the molecules below that do not follow the octet rule? (1) H2S        (2) BCl3        (3) PH3        (4) SF4Answer| | | | | Selected Answer:|   (2) and (4)| | | | |