

Quiz 5 Homework

Name the following ionic compounds:

- 1) NH_4Cl _____
- 2) $\text{Fe}(\text{NO}_3)_3$ _____
- 3) $\text{Be}(\text{HCO}_3)_2$ _____
- 4) $\text{Mn}_2(\text{SO}_3)_3$ _____
- 5) $\text{Al}(\text{CN})_3$ _____

Write the formulas for the following compounds:

- 6) vanadium (V) sulfide _____
- 7) chromium (III) hydroxide _____
- 8) lithium iodide _____
- 9) lead (II) nitride _____
- 10) silver bromide _____

For each of the following questions, determine whether the compound is ionic or covalent and name it appropriately.

- 11) Na_2CO_3 _____
- 12) FeSO_4 _____
- 13) SiO_2 _____
- 14) CO _____
- 15) P_4 _____

For each of the following questions, determine whether the compound is ionic or covalent and write the appropriate formula for it.

- 16) dinitrogen trioxide _____

17) nitrogen _____

18) methane _____

19) lithium acetate _____

20) phosphorus trifluoride _____

21) vanadium (V) oxide _____

22) aluminum hydroxide _____

23) zinc sulfide _____

24) silicon tetrafluoride _____

25) silver phosphate _____

Draw the Lewis structures for the following compounds:

26) PBr_3

27) N_2H_2

28) CH_3OH

29) NO_2^{-1}

30) C_2H_4

31) How many valence electrons does gallium have?

32) How many electrons should phosphorus gain in order to achieve a noble-gas electron configuration?

33) How many valence electrons are transferred from the nitrogen atom to *each* potassium in the formation of the compound potassium nitride?

34) What is the net charge of the ionic compound calcium fluoride?

35) Ionic compounds are normally found in what state at room temperature?

36) How many electrons are shared between two atoms in a double covalent bond?

37) How many unshared pairs of electrons are there in hydrogen iodide?

38) Which of the following elements occurs naturally as a diatomic molecule with three covalent bonds? H, N, O, F, Cl

39) When one atom contributes both bonding electrons in a single covalent bond, the bond is called a(n)...

40) Which of the following pairs of elements can be joined by a covalent bond?

- a. P, Cl
- b. Na, Cl
- c. Ca, F
- d. Mg, O

41) What causes dipole-dipole interactions?

42) Why is hydrogen bonding only possible with hydrogen?

Which sets Elements are most likely described by questions 44-48? Use a periodic table for these problems

43) These elements have a charge of +2 when forming ionic compounds.

44) These elements are almost entirely unreactive. _____

45) These elements are radioactive. _____

46) These elements are all diatomic. _____

47) These elements are found in group 1 of the periodic table. _____

For problems below, describe the oxidation state of each element when it forms ionic compounds:

48) oxygen _____

49) potassium _____

50) gallium _____

51) nitrogen _____

For problems below, determine the number of valence electrons each element has:

52) sulfur _____

53) helium _____

54) carbon _____

55) hydrogen _____

56) Which of the following is least strong?

polar covalent bond

ionic bond

hydrogen bond

dipole-dipole force

Write the chemical formula or name for each of the following. Pay attention to the polyatomic ions.

57) NH_4Cl

58) HClO_2

59) BeSO_4

60) $(\text{NH}_4)_3\text{N}$

61) NH_4NO_3

62) $\text{Zn}(\text{ClO}_3)_2$

63) barium nitrate

64) ammonium sulfate

65) aluminum hydroxide

66) cesium cyanide

67) calcium acetate