Quiz A Ch 19

1. In aqueous solution, HF is a weak acid while HCl is a strong acid. This difference can be attributed to
   a. smaller mass of HF
   b. electron configuration of HF
   c. larger mass of HF
   d. hydrogen bonding in HF
   e. none of these
2. H_2O has a much higher boiling point than H_2S. Explain this difference.
3. Write the formula for borax.
4. Write the formula for hydrazine.
5. List two commercial uses of chlorine.
6. Write the equation for the reaction of Al with a strong acid.
7. Write the electron configurations for the two ions of gallium.
8. What important compound is obtained from calcium carbide?
9. What is the main commercial use of lead?
10. Define and give an example of an allotrope.

Quiz B

1. Bauxite is a mineral source of which important metal?
2. Which element is a photoconductor?
3. What is the main Group 4A element found in quartz?
4. Write the reaction for ionization of hydrazine in aqueous solution.
5. Which of the noble gases will react with fluorine?
   a. none will react
   b. xenon
   c. all will react
   d. sodium
   e. argon
6. Would you expect F_2 or Br_2 to be a better oxidizing agent?
7. Write the equation for the reaction of $MnO_2(s)$ with HCl(aq).
8. Which element tends to form electron-deficient compounds?
9. Which of the following elements, O, Se or Po, is the most nonmetallic?

Quiz C

Fill in the blank

1. Two minerals which are sources of boron are _____ and _____.
2. Boric acid can be prepared by treating borax with _____.
3. Boron chloride reacts with water to form _____.
4. Covalent hydrides are usually _____ in water.
5. A _____ is an ionic form of carbon.
6. _____ is used in the Ostwald process to make nitric acid.

Short Answer

7. List some of the commercial uses of the halogens.
8. Contrast the covalent hydrides of carbon with those of silicon.
9. Define an interhalogen
10. What is an inert pair and which elements are likely to contain an inert pair?

Self Test

1. What is the primary characteristic of a p-block element?
2. Which of the noble gases form compounds?
3. Write an equation to represent the preparation of pure boron by the reduction of $BCl_3(g)$ with hydrogen gas.
4. Write an equation for the reaction of bauxite with NaOH.
5. Write the outer shell electron configuration of the Group 5A elements and describe the properties moving down the group.
6. Write chemical equations to show the preparation of the elemental forms of the halogens.
7. Describe the Ostwald process for the preparation of nitric acid.
8. Write an equation for the Haber process for the commercial production of ammonia. What is the major commercial use of ammonia?
9. Explain why HF has a normal boiling point intermediate between those of NH_3 and H_2O and why HF is a significantly weaker acid than HCl.
10. List the known oxidation numbers of nitrogen and give a compound or ion that exemplifies each.