

## 22 • Chemistry of the Main Group Elements

### PRACTICE TEST

- Of the elements N, P, As, Sb, and Bi, which one has the most metallic character?
  - N
  - P
  - As
  - Sb
  - Bi
- Which method is useful in the laboratory preparation of hydrogen?
  - metal + acid
  - carbonate + acid
  - acid + base
  - acid + alcohol
  - all of these
- Oxides of the alkaline earth family form
  - basic solutions
  - acidic solutions
  - gases with water
  - noble gas compounds
  - soluble sulfides
- Oxides of nitrogen are known which have the following positive oxidation numbers.
  - +2, +4
  - +2, +4, +6
  - +1, +3, +5
  - +2, +4, +5
  - +1, +2, +3, +4, +5
- The Ostwald process is useful for the preparation of
  - ammonia from nitrogen and hydrogen
  - sulfur from iron sulfide
  - nitric acid from ammonia
  - oxygen from sand
  - lead from lead sulfide
- Which is NOT attacked by nitric acid?
  - Fe
  - Ti
  - Au
  - Cu
  - Co
- All of the following statements about the main group metals are true EXCEPT:
  - most metal oxides are basic
  - the metals have positive reduction potentials
  - most metals are dense solids at 400K
  - the metals are good heat conductors
  - the metals are good electrical conductors
- All would be expected to function as reducing agents EXCEPT:
  - H<sub>2</sub>
  - NH<sub>3</sub>
  - Sn<sup>2+</sup>
  - Mg
  - Al<sup>3+</sup>
- Tin has the oxidation states of +2 and +4. The expected oxidation states for antimony are
  - +3 and +5
  - +1 and +3
  - +2 and +3
  - +2 and +4
  - +1 and +5
- All of the following are true statements about bases EXCEPT
  - they have a bitter taste
  - they react with salts to form weaker or more volatile acids and a new salt.
  - they have a slippery feeling
  - they change the colors of many indicators
  - they react with acids to form salts and water

Answers:

1.		11.	
2.		12.	
3.		13.	
4.		14.	
5.		15.	