

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:
 - H₂
 - NH₃
 - Sn²⁺
 - Mg
 - Al³⁺
- 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.	