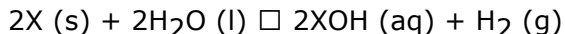


1. Consider the balanced reaction below:



The species 'X' would be which of the following?

1. a halogen
  2. an alkaline earth metal
  3. an alkali metal
  4. a chalcogen
2. Which of the following **is not** true of alkaline earth metals?
1. React with halogens to form salts
  2. Tend to form a +2 charge
  3. Somewhat reactive toward water
  4. Gain electrons to achieve noble gas configuration
  5. Have 2 electrons in their highest energy shell
3. Which member of the Boron family is a deadly poison
1. Aluminum (Al)
  2. Boron (B)
  3. Gallium (Ga)
  4. Indium (In)
  5. Thallium (Tl)
4. The Nitrogen group contains (1/2) non-metal(s), (1/2) metalloid(s) and (1/2) metal(s). Do not consider the synthetic superheavy element Ununpentium (Uup) in arriving at your answer.
1. 2, 1, 2
  2. 1, 2, 2
  3. 2, 2, 1
  4. 1, 1, 1
  5. 2, 2, 2
5. Which member of the carbon family is most abundant in Earth's crust?
1. Silicon (Si)
  2. Carbon (C)
  3. Germanium (Ge)
  4. Tin (Sn)
  5. Lead (Pb)
6. Which of the following statements **is not** true of the oxygen family?
1. Are good reducing agents
  2. They often have an oxidation number of -2
  3. Contains elements crucial to life
  4. Are also called chalcogens
7. Alumina ( $Al_2O_3$ ) is produced in which of the following processes?
1. Hall process
  2. *Contact* process
  3. Bayer process
  4. Klaus process
8. Which of the following gemstones is/are derived from aluminum oxides?
- I. Diamond
  - II. Sapphire
  - III. Ruby
1. I
  2. II
  3. III
  4. I and II
  5. I and III
  6. II and III
  7. none