Chemical Bonding, Metals, Non-metals and Metalloids

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Practice Problems with Solution

Question 1: Which among the following is not a chemical change?

A: Burning of coal
B: Digestion of food
C: Freezing of water
D: Rusting of iron

Question 2: A chemical bond formed by the sharing of electron pairs is called _____

A: ionic bond
B: metallic bond
C: covalent bond
D: hydrogen bond

Question 3: Which of the following is a compound?

A: Nitrogen
B: Oxygen
C: Carbon dioxide
D: Hydrogen

Question 4: Among the following, which is not a coinage metal?

A: Copper
B: Silver
C: Zinc
D: Gold

Question 5: The only metal which exits in liquid state at room temperature?

A: Tin
B: Mercury
C: Chromium
D: Molybdenum

Question 6: The most electro negative element in the periodic table is _____
A: Oxygen
B: Nitrogen
C: Flourine
D: Chlorine

Question 7: The alloy used for manufacturing aircrafts is _____
A: Alnico
B: Bronze
C: Duralumin
D: Stainless Steel

Question 8: The Seventeenth Group elements in the periodic table are also known as _____
A: Alkali Metals
B: Halogens
C: Alkaline Earth Metals
D: Noble Gases

Question 9: Which is a metalloid among the following elements?
A: Zinc
B: Germanium
C: Sodium
D: Copper

Question 10: Which is the most abundant metal in the Earth's crust?
A: Iron
B: Copper
C: Calcium
D: Aluminium

Answers and Solutions

1:- C
Solution: A chemical change is one in which the substance undergoing change is transformed into a new substance and in which the process is not reversible.

2:- C
Solution: When two atoms share electron pairs, the chemical bond formed between them is known as Covalent bond.

3:- C
Solution: A compound is formed by the combination of two or more elements. Carbon dioxide is formed by the combination of carbon and oxygen.

4:- C
Solution: Metals used for minting coins are called coinage metals. Copper, Silver and Gold are used for making coins and hence they are coinage metals.

5:- B
Solution: Mercury exists in liquid state at room temperature due to its low melting point. The melting point of Mercury is -38.9 degree celsius.

6:- C
Solution: The most electronegative element in the periodic table is Flourine. Electro-negativity is the ability of an atom to attract the shared pair of electrons in a covalent bonded molecule. Electro-negativity is expressed in Pauling Scale and the maximum value is for Flourine which is 4.

7:- C
Solution: Duralumin is an alloy of aluminium, copper, magnesium and manganese. Duralumin is a hard but light weight alloy of aluminium and hence it is suitable for manufacturing aircrafts.

8:- B
Solution: The elements in the periodic table that have seven electrons in their valence shell are called Seventeenth Group elements. Since seventeenth group elements form salts [eg: sodium chloride] , they are also known as halogens. [Halogens mean “salt forming” in Greek].

9:- B
Solution: A metalloid is an element that has properties intermediate between those of metals and non-metals. Metalloids are also known as semi-metals. There are only seven metalloids in the periodic table and they are Boron, Silicon, Germanium, Arsenic, Antimony, Telurium and Polonium.

10:- D
Solution: The most abundant metal in the Earth's crust is Aluminium [8 percentage] followed by Iron [5 percentage] and Calcium [3.6 percentage].

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