

METALS AND NON-METALS

1. A metal M of moderate reactivity is present as its sulphide X. On heating in air, X converts into its oxide Y and a gas evolves. On heating Y and X together, the metal M is produced. X and Y respectively are 2017
- (1) X = cuprous sulphide, Y = cuprous oxide
 - (2) X = cupric sulphide, Y = cupric oxide
 - (3) X = sodium sulphide, Y = sodium oxide
 - (4) X = calcium sulphide, Y = calcium oxide
2. An element X reacts with dilute H_2SO_4 as well as with NaOH to produce salt and $\text{H}_2(\text{g})$. Hence, It may be concluded that: 2016
- (I) X is an electropositive element.
 - (II) oxide of X is basic in nature.
 - (III) oxide of X is acidic in nature.
 - (IV) X is an electronegative element.
- (1) I, II, III (2) IV, I, III (3) III, IV, I (4) II, III, IV
3. An element X has electronic configuration 2, 8, 1 and another element Y has electronic configuration 2, 8, 7. They form a compound Z. The property that is not exhibited by Z is
- (1) It has high melting point
 - (2) It is a good conductor of electricity in its pure solid state.
 - (3) It breaks into pieces when beaten with hammer.
 - (4) It is soluble in water
4. A metal occurs in nature as its ore X which on heating in air converts to Y. Y reacts with unreacted X to give the metal. The metal is 2015
- (1) Hg (2) Cu (3) Zn (4) Fe
5. Metals like sodium, potassium, calcium and magnesium are extracted by electrolysis of their chlorides in molten state. These metals are not extracted by reducing of their oxides with carbon because 2014
- (a) reduction with carbon is very expensive
 - (b) carbon readily makes alloy with these metals
 - (c) carbon has less affinity for oxygen than these metals
 - (d) carbon is weaker reducing agent than these metals
- (1) a and b (2) b and c (3) c and d (4) d and a

6. Which of the following is true about the two statements? 2013
Statement I : Reactivity of aluminium decreases when it is dipped in nitric acid
Statement II A protective layer of aluminium nitrate is formed when aluminium is dipped in nitric acid.
(1) I is correct but II is incorrect
(2) I is incorrect but II is correct.
(3) Both the statements are correct and II is also the correct explanation of I
(4) Both the statements are correct but II is not correct explanation of I
7. A silvery white metal X reacts with water at room temperature to produce a water soluble compound Y and a colourless gas Z. The reaction is highly exothermic and the Z catches fire immediately during the reaction. The solution of Y in water on reacting with stoichiometric amount of dilute solution of hydrochloric acid gives a solution of pH = 7.0. The compounds X, Y and Z respectively are:
(1) Al, Al(OH)₃ and H₂ (2) Ag, AgOH and H₂
(3) K, KCl and H₂ (4) Na, NaOH and H₂
8. An element X (atomic number 12) reacts with another element Y (atomic number 17) to form a compound Z. Which of the following statements are true regarding this compound?
I. Molecular formula of Z is XY₂
II. It is soluble in water
III. X and Y are joined by sharing of electrons
IV. It would conduct electricity in the molten state.
(1) (II) and (III) (2) (I) and (III)
(3) (I), (III) and (IV) (4) (II) and (IV)

ANSWER KEYS

1.1

2.1

3.2

4.1,2

5.3

6.2