INDIAN SCHOOL MUSCAT

QUESTION BANK

CLASS 10

METALS AND NON-METALS

I. 1 mark Questions.

1.. Name two elements that are stored in kerosene.

2. What will happen when a strip of copper is kept immersed in a solution of silver nitrate?

3. State any two ways to prevent the rusting of iron.

4. What type of oxides are formed when non-metals combine with oxygen?

5.Write the chemical equation to represent the reaction taking place when copper oxide is heated in a stream of hydrogen.

6. Write the electronic configuration of Sulphur atom and sulphide ion.

II. 2 Mark Questions.

1. What is the nature of the oxide SO_2 and Na_2O? What happens when they are dissolved in water?

Write the chemical equation?

2. Explain why, metals usually do not liberate hydrogen gas with dilute nitric acid. Give examples of two
metals which however liberate H_2 gas.

3. Why does aluminium not react with water under ordinary conditions?

4. The reaction of a metal X with Fe2O3 is highly exothermic and is used to join broken railway tracks. Identify metal X. Write the chemical equation of its reaction with Fe_2O_3.

5. Metal sulphides occurs mainly in rocks and the metal halides occur mostly in seas and lakes. What could be the reason for this difference in behavior?

6. Pratyush took sulphur powder on a spatula and heated it. He collected the gas evolved by inverting a test-tube over it.

(i) What will be the action of gas an (a) dry litmus paper? (b) Moist litmus paper?

(ii) Write a balanced chemical equation for the reaction taking place.

7. Which gas is produced when diluted hydrochloric acid is added to a reactive metal? Write the chemical reaction. When iron reacts with dilute H_2SO_4.

8. Why do ionic compounds have high melting points?

9. Give reasons

(i) Platinum, gold and silver are used to make jewellery.

(ii) Aluminium is a highly reactive metal, still it is used to make utensil for cooking.

10. (i) What is corrosion of metals? Name one metal which does not corrode and one which corrodes on being kept in atmosphere. (ii) How will you show that the rusting of iron needs oxygen and moisture at the same time?

11. Differentiate between metal and non-metal on the basis of their chemical properties.

12. Why copper is used to make hot water tanks and not steel (an alloy of iron).

13. What is an alloy? Name the constituents of 22-carat gold. Why is 24-carat gold converted to 22-carat gold?

14. Why are metals good conductors of electricity?

15. Give reasons for the following: (a) Zinc oxide is considered as amphoteric oxide. (b) Non-metals in general do not displace hydrogen from dilute acids.

16.Show the formation of MgO by the transfer of electrons and name the ions present in this compound.

17. Name a metal i) which does not react with cold or hot water but reacts with steam.

ii) it does not react with any physical state of water.

18. What type of chemical bond is formed between

i) potassium and bromine ii) carbon and bromine.

19. Write the electron-dot structure for NaCl and Cl_2

20. Explain with equation what happens when Cu_2O and Cu_2S is heated?

III.3 Mark Questions

1. Explain why: (i)iron sheets are coated with zinc. (ii)we apply paint on iron articles. (iii)the galvanized iron article is protected against rusting even if the zinc layer is broken.

2. What is the nature of the oxide SO_2 and Na_2O ? What happens when they are dissolved in water? Write the chemical equation?

3. Explain why salt does not conduct electricity in solid state but is a good conductor in molten state.

4. Write the equation for the reaction of

(a) Iron with steam

(b) Calcium with water

(c) Potassium with water

5. Define the following terms:

(a) Minerals

(b) Ores

(c) Gangue

IV. 5 mark Questions

1.i)How is aluminium metal extracted ? explain with the help of an equation.

ii) Name the electrode at which aluminium metal is produced.

iii) Name the gas produced during the extraction of aluminium.

2. (i) What is an ‘activity series of metals’? Arrange the metals Zn, Mg, Al, Cu and Fe in a decreasing order of reactivity.

(ii) What would you observe when you put (a) Some zinc pieces into blue copper sulphate solution?

(b) Some copper pieces into green ferrous sulphate solution? (c) Name a metal which combines with hydrogen gas. Name the compound formed.

3.i)Give the formulae of the chlorides of the elements X and Y having atomic numbers of 3 & 6 respectively.

ii)Will the properties of the two chlorides be similar or different.Explain.

4.a)Compare the properties of Ionic and covalent compounds.

b)Give an example for:

i) a molecule of double covalent bond

ii) a compound containing an ionic bond