

CHEMISTRY

1. Name the process involved in the following ;

- a) Mixing of two gases.
- b) Removal of oxygen from compounds.
- c) Salt and water react to form an acidic or a basic solution.

(3)

2. Write equations for the following:

- a) Decomposition of Calcium carbonate.
- b) Mixing silver nitrate solution and dilute HCl.
- c) Dissociation of nitrogen tetroxide.

(3)

3. Name the fundamental particles of an atom? Give the symbol and charge of each particle?

(3)

4. Define the following terms:

1. Mass number 2. Dobereiners law of triads 3. Decomposition reaction

4. Photochemical reaction.

(6)

5. State Boyles law? Give its mathematical expression and its significance?

(3)

6. 800cm^3 of a gas is collected at 650mm pressure. At what pressure would the Volume of the gas reduce by 40% of its original volume, temperature remaining Constant?

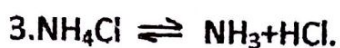
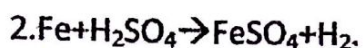
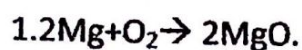
(2)

7. Correct the following statements:

- 1. Standard temperature is 273°C .
- 2. Boiling point of water is 273K.
- 3. If pressure of a gas is doubled volume decreases by one-fourth.
- 4. Acetylene decomposes into C and H_2 by absorbing light energy.
- 5. Catalyst used to accelerate a reaction is called negative catalyst.

6. Potassium nitrate on heating gives NO_2 gas. (6)

8. Name the type of following reactions;



9. Name the elements of period 2? Which is the biggest element among them and which is the least metallic? (3)

10. Define Groups and Periods? Which is the longest period? Name the typical elements? (4)

11. Write the formula of

1. Sulphate of Aluminium. 2. Nitrate of Barium. 3. Copper(I) chloride. (3)

SECTION II

QUESTION II

1. Write the conditions needed for the following reactions;

a. Combination of hydrogen & chlorine gas.

b. Getting sodium & chlorine from NaCl.

c. Adding Oxalic acid to sodium carbonate. (3)

2. Calculate the percentage of carbon in CON_2H_4 . [C=12, H=1, O=16, N=14] (2)

3. Calculate Empirical formula mass of glucose. Molecular formula of Glucose is $\text{C}_6\text{H}_{12}\text{O}_6$? [C=12, H=1, O=16] (2)

4. What are polar covalent compounds? Draw orbit structural diagram of Ammonia? [Z of N=7, H=1] (2)

5. Write balanced equation.

Magnesium Nitride + water \rightarrow Magnesium hydroxide + Ammonia. (1)

QUESTION III

1. What happens during a chemical reaction?
2. What do you observe when Zinc is added to sulphuric acid?
3. Define a reversible reaction? Write equation for passing steam over red hot Iron ?
4. Explain octet rule for the formation of NaCl [Z of Na=11, Cl=17]
5. Calculate the final volume of a gas X if the original pressure of the gas at S.T.P is doubled and its temperature is made three times ?
6. Define Charles law? Derive its equation ?

QUESTION IV

1. Write Gas equation? Why standard values for pressure and temperature is chosen?
2. A sample of CO_2 occupies 30cm^3 at 15°C and 740mm pressure. Find its Volume at S.T.P?
3. Why do atoms combine?
4. What is neutralisation? Write an example?
5. Draw electron dot diagram of MgCl_2 [Z of Mg=12, Cl=17]

QUESTION V

1. Write any two characteristics of halogens?
2. Name first three alkaline earth metals? Give the colour of the flame imparted by those elements?
3. What does position of an element in the periodic table reveal?
4. Write one drawback of Rutherford's model of the atom?
5. Write balanced equation for the hydrolysis of potassium phosphate?
6. Why isotopes of an element have similar chemical properties?