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**“Cultivating excellence in every student”  
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**Work sheet**

**Chapter-1**

***Chemical Reactions and Equation***

*“Facts are not science — as the dictionary is not literature.”* Martin H. Fischer

Balancing of chemical equations:

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|  | An aqueous solution of metal nitrate ‘P’ reacts with sodium bromide solution to form yellow precipitate ‘Q’ which is used in photography. ‘Q’ on exposure to sunlight undergoes decomposition to form metal present along with a reddish brown gas. Identify ‘P’ and ‘Q’ write the balanced chemical equation for the chemical reaction. |
|  | Write chemical equations for the reactions taking place when  a. Iron reacts with steam  b. Magnesium reacts with dil. HCl  c. Copper is heated in air |
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|  | What happens when an aqueous solution of sodium sulphate reacts with an aqueous solution of barium chloride? State the physical conditions of reactants in which the reaction between them will not take place. Write the balanced chemical equation for the reaction. |
|  | Translate the following statements into chemical equations and then balance them:  a. Hydrogen gas combines with nitrogen to form ammonia.  b. Hydrogen sulphide gas burns in air to give water and sulphur dioxide.  c. Barium chloride reacts with aluminium sulphate to give aluminium chloride and a precipitate of barium sulphate. State the two types in which this reaction can be classified.  d. Potassium reacts with water to give potassium hydroxide and hydrogen gas. |
|  | Write balanced equation for the reaction between Mg and hydrochloric acid. |
|  | Translate the following statement into chemical equation and then balance it. “A metal in the form of ribbon burns with a dazzling white flame and changes into white powder.”+ |
|  | Write balanced chemical equations for the following reactions:  a. Silver bromide on exposure to sunlight decomposes into silver and bromine.  b. Sodium metal reacts with water to form sodium hydroxide and hydrogen gas. |
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|  | Write a balanced chemical equation for the reaction between sodium chloride and silver nitrate indicating the physical state of the reactants and the products. |
|  | Write a balanced chemical equation to represent the following reaction: carbon monoxide reacts with hydrogen gas at 340 atm to form methyl alcohol. |
|  | Write the balanced equation for the following chemical reactions:  (i) Hydrogen + Chlorine → Hydrogen Chloride  (ii) Barium Chloride + Aluminium Sulphate → Barium Sulphate + Aluminium Chlorie  (iii) Sodium + Water → Sodium Hydrogen + Hydrogen |
|  | Write balanced chemical equation with state symbols for the following reaction:  (i) Solution of barium chloride and sodium sulphate in water react to give insoluble barium sulphate and the solution of sodium chloride.  (ii) Sodium hydroxide solution (in water) reacts with hydrochloric aid solution (in water) to produce sodium chloride solution and water. |
|  | White the balanced reactions for the following  (i) Potassium Bromide (aq) + Barium iodide (aq) → Potassium iodide (aq) + Barium Bromide(aq)  (ii) Zinc carbonate (s) →Zinc oxide (s) + carbon dioxide (g)  (iii) Hydrogen (g) + chlorine (g) →Hydrogen chloride |
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