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**Max Time : 1 hr** **Class = 10th Science Test**  **Max Marks : 20**

**CHEMICAL REACTIONS & EQUATIONS CODE : A**

1. Write a balanced chemical equation with state symbols for the following reactions : [ 1 ]

a) Hydrogen gas combines with nitrogen to form ammonia

1. Respiration is a ………………….. change. [ 1 ]
2. The reaction which involve absorption of heat are called …………………………. Reactions. [ 1 ]
3. The magnetic oxide of iron has the formula ……………….. . [ 1 ]
4. Which of the following observation/s can be used to determine whether a chemical reaction has taken place? [ 1 ]

|  |  |
| --- | --- |
| a) Change in colour | b) Change in temperature |
| c) Evolution of a gas | d) any one of the three |

1. Which of the following does not represent the balanced chemical reaction correctly ? [ 1 ]

a) Na (s) H2O (l) → NaOH (aq) + H2 (g)

b) BaCl2 (aq) + Na2SO4 (aq) → BaSO4 (aq) + 2 NaCl (aq)

c) H2 (g) + Cl2 (g) → 2 HCl (g)

d) CaO (s) + H2O (l) → Ca(OH)2 (aq)

1. When crystals of ferrous sulphate are heated, they decompose to form [ 1 ]

|  |  |
| --- | --- |
| a) FeO (s) and SO2 (g) | b) FeO (s) and SO3 (g) |
| c) Fe2O3 (s) , SO2 (g) and SO3 (s) | d) Fe2O3 (s) , SO2 (g) and SO3 (g) |

1. Potassium chlorate (KClO3) on heating forms potassium chloride and oxygen. Write a balanced equation for this reaction. [ 1 ]
2. Why is photosynthesis considered an endothermic reaction ? [ 1 ]
3. What is an oxidation reaction? Give an example of oxidation reaction. Is oxidation an exothermic or an endothermic reaction ? [ 2 ]
4. A solution of a substance ‘X’ is used for white washing [ 2 ]
5. Name the substance ‘X’ and write its formula.
6. Write the reaction of the substance ‘X’ named in (i) above with water.
7. Why is respiration considered as an exothermic reaction? Explain. [ 2 ]
8. Why are decomposition reactions called the opposite of combination reactions ? Write equations for these reactions. [ 2 ]
9. Balance the following chemical equation : [ 3 ]

|  |  |  |
| --- | --- | --- |
| a) Al + HCl → AlCl3 + H2 | b) Br2 + I – → Br –  + I2 | c) NaCl + AgNO3 → AgCl + NaNO3 |

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**CHEMICAL REACTIONS & EQUATIONS CODE : B**

1. Write a balanced chemical equation with state symbols for the following reactions : [ 1 ]

a) Potassium metal reacts with water to give potassium hydroxide and hydrogen gas.

1. Lead nitrate on heating leaves behind yellow lead oxide. This type of reaction is called ……………………… [ 1 ]
2. When AgBr is kept in sunlight for long time, the residue left behind is that of …………………….. .

[ 1 ]

1. A reaction between an acid and a base is called ………………………… reaction. [ 1 ]
2. When crystals of lead nitrate are heated, they decompose to form [ 1 ]

|  |  |
| --- | --- |
| a) Pb (s) and NO2 (g) | b) PbO (s) , NO2 (g) and O2 (g) |
| c) Pb (s) , NO2 (g) and O2 (g) | d) PbO (s) , NO (g) and NO2 (g) |

1. On electrolytic decomposition of water, the ratio of H2 and O2 gases collected is [ 1 ]

|  |  |
| --- | --- |
| a) 1 : 1 | b) 1 : 2 |
| c) 2 : 1 | d) depends on amount of H2O taken |

1. Calcium oxide reacts vigorously with water to produced slaked lime [ 1 ]

Cao (s) + H2O (l) → Ca(OH)2 (aq)

This reaction can be classified as

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| (i) Combination reaction | | | (ii) Exothermic reaction | | |
| (iii) Endothermic reaction | | | (iv) Oxidation reaction | | |
| a) (i) & (iii) | b) (iii) & (iv) | c) (i) , (iii) & (iv) | | d) (i) & (ii) |

1. Why is hydrogen peroxide kept in coloured bottles ? [ 1 ]
2. Name the oxidising and reducing agent in the following reactions : [ 1 ]

2 H2S + SO2 → 2 H2O + 3 S ↓

1. Identify the substance oxidised, substance reduced, oxidising agent and reducing agent : [ 2 ]

MnO2 + 4 HCl → MnCl2 + 2 H2O + Cl2

1. Why does the colour of copper sulphate solution change when an iron nail is dipped in it ? [ 2 ]
2. What does one mean by exothermic and endothermic reactions? Give examples. [ 2 ]
3. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light or electricity. [ 2 ]
4. Balance the following chemical equation : [ 3 ]

|  |  |  |
| --- | --- | --- |
| a) SO2 + H2S → H2O + S | b) Fe + H+ → Fe2+ + H2 | c) NaOH + H2SO4 → Na2SO4 + H2O |