

STD: X

DATE:

SUB: CHEMISTRY

EXPERIMENT – 1

TYPES OF REACTION

OBJECTIVE: -

Performing and observing the following reactions and classify them into:-

- a) Combination Reaction
 - i) Action of water on quick lime
- b) Decomposition Reaction
 - ii) Action of heat on ferrous sulphate crystals.
- C) Displacement Reaction
 - iii) Iron nails kept in Copper Sulphate Solution.
- D) Double Displacement Reaction
 - iv) Reaction between Sodium Sulphate and Barium Chloride Solution

Apparatus Required:-

- 1) Clean test tubes and boiling tube
- 2) 100 cc beakers
- 3) Droppers
- 4) Test Tube holder

Chemicals Required:-

- 1. Quick Lime (Cao)
- 2. Ferrous Sulphate
- 3. Copper Sulphate Solution
- 4. Clean Iron Nails
- 5. Sodium Sulphate Solution
- 6. Barium Chloride Solution
- 7. Distilled Water
- 8. Litmus Paper (Blue / Red)

Procedure for combination Reaction

Take 100 CC beaker and place about 5g of quick lime in it.

Fill a dropper with water and pour about 5 cc of it in the beaker.

b) Observations:

1. When water comes in contact with quick lime, it starts crumbling producing crackling sound.
2. The beaker on touching is found to be very hot.

c) Conclusions:

1. The reaction is exothermic in nature.
2. As two reactants combined to form a single product, the reaction is combination reaction.

Diagram: Refer; Text Page No:-6

2

a) Procedure for Decomposition Reaction

- i) Take about 2 g of Ferrous Sulphate, crystals in a dry clean boiling tube
- ii) Introduce the boiling tube into the Bunsen flame.

b) Observation

1. When boiling tube is strongly heated, the crystals crumble to form white powdery mass.
2. The white mass changing into reddish – brown colour.
3. When the gas is gently wafted towards the nose, it smells like burning sulphur

Conclusion:-

1. When the boiling tube (FeSO_4) is strongly heated, it decomposes into ferric oxide, sulphur dioxide and sulphur trioxide.

Diagram:- Refer Text book Page No:- 8

a) Procedure for Displacement Reaction

1. Pour about 50cc of Copper sulphate solution in 100cc beaker
2. Place iron nail in it and leave it undisturbed $\frac{1}{2}$ an hour.
3. Take out iron nail and do observation

b) Observations:-

1. Surface of iron nail is covered with Brick – Red deposit
2. Blue colour copper sulphate solution becomes fade

c) Conclusion:-

1. Surface of iron nail is covered with Brick –Red deposit
2. Blue colour copper sulphate solution becomes fade

4) a) Procedure for Double Displacement Reaction:-

1. Fill 1/3 of a test tube with sodium sulphate solution.
2. Fill a dropper with barium chloride solution and add it on a test tube

b) Observation:-

The mixture becomes white in colour

C) Conclusion:-

1. The white precipitate is barium sulphate
2. Ions of two different solutions exchange to form new salts. So, it is double – displacement reaction