QUIZ: CHEMICAL REACTIONS & CHEMICAL EQUATIONS-II

- Two compounds X and Y combine together to form a compound Z. The solution of Z in water turns milky on passing carbon dioxide through it. The chemical equation involved for the conversion of X + Y → Z is
 - (a) $Ca(OH)_2 \longrightarrow CaO + H_2O$ (b) $CaO + H_2O \longrightarrow Ca(OH)_2$ (c) $MgO + H_2O \longrightarrow Mg(OH)_2$ (d) $Ba(OH)_2 \longrightarrow BaO + H_2O$
- 2. Which substance is formed on the wall when it is white washed?
 - (a) Calcium sulphate
 - (b) Barium carbonate
 - (c) Barium sulphate
 - (d) Calcium carbonate
- **3.** In a garden, Aruma observed that the maali (Gardener) collected the leaves which had fallen from the trees and plants and put them in a pit along with the cow dung lying around. Then he covered this waste with the mud.

Aruma asked the maali the reason of dumping the waste into the pit. Maali told her that it is to convert the waste into fertilizer. Which of the following reaction would take place in the pit?

- (a) Displacement
- (b) Double displacement
- (c) Combination
- (d) Decomposition

Consider the following information to answer questions 4 & 5.

4. Ram heated a white substance <u>'X'</u> in a test tube. A colorless gas <u>'Y'</u> was evolved. On passing the gas <u>'Y'</u> through a colorless solution turned it milky.

Identify \underline{X} and \underline{Y}

| Options | Х | Y |
|---------|-----------------------------------|-----------------|
| (a) | FeSO ₄ | SO_2 |
| (b) | NaCl | Cl ₂ |
| (c) | CaCO ₃ | CO_2 |
| (d) | Pb(NO ₃) ₂ | NO ₂ |

5. Identify the types of reactions in the changes

- (i) $X \longrightarrow Y$ and
- (ii) Y (lime water) → milkyness

| | (i) | (ii) |
|-----|---------------|---------------|
| (a) | Combination | Displacement |
| (b) | Displacement | Decomposition |
| (c) | Combination | Decomposition |
| (d) | Decomposition | Displacement |

Answers:

1. (b)

2. (d)

Explanation:

The raw material 'Quick lime' is used for white washing. On adding it to water, calcium hydroxide, also known as slaked lime is formed. When it is applied on a wall, it reacts with carbon dioxide of the atmosphere and forms a layer of calcium carbonate according to the reaction

 $Ca(OH)_2 + CO_2 \longrightarrow CaCO_3 + H_2O$

3. (d)

Explanation: Inside the ground, the reaction takes place in absence of oxygen. The large and complex organic molecules get converted into simpler molecules.

4. (c)

Explanation: On heating x, calcium carbonate a white solid, carbon dioxide gas y, is formed. This gas react with lime water, a colorless solution due to the formation of calcium carbonate.

 $\begin{array}{ccc} Ca(OH)_2(aq) + CO_2(g) & \longrightarrow & CaCO_3 & () + H_2O(l) \\ lime water & & Milky \end{array}$

5. (d)

Explanation:

Types of reaction, In step (i) i.e. X-Y (CaCO₃ \longrightarrow CO₂ + H₂O) It is a decomposition of calcium carbonate to carbon dioxide and water. Step (ii) i.e. Y (lime water) \longrightarrow milky Ca(OH)₂+ CO₂ \longrightarrow CaCO₃+ H₂O It is a displacement reaction in which OH is displaced by CO₂.