

DON BOSCO SCHOOL, KOKAR, RANCHI

CLASS 9

CHEMISTRY

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Chapter 3

WATER

Short answer questions:

Answers:

1. 2:1 by volume
1:8 by mass
2. Lower than 100 degree Celsius
3. 1 Cal
4. Latent heat of freezing
Latent heat of vaporization.

5.

A solution containing the maximum amount of solute that can be dissolved in it at a particular temperature is called a **saturated solution**.

A solution which is capable of dissolving more solute at a given temperature is called an **unsaturated solution**.

6. All substances do not dissolve to the same extent in different solvents.

The solubility is usually expressed in g/100g of solvent. The temperature must be specified in every case.

7. The solubility curve of a solute represents the change in its solubility in a given solvent with temperature.

8. solubility increases with temperature-- KNO_3

Solubility decreases with temperature---lime water.

9. B

a ----v. $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$

b-----iii. $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$

c-----iv. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

d-----vi. $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$

e-----ii. $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$

f-----i. $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$

10. The water molecules associated with a substance in crystal and forming a part of the crystalline structure are together referred to as water of crystallization.

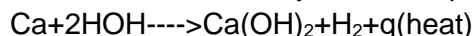
A substance containing water of crystallization is known as a hydrate.

11. Some hygroscopic substances draw so much water from the surroundings that they form a solution such substances are called deliquescent.

Deliquescence is the phenomenon in which a salt gradually absorbs moisture from air and dissolves in it.

12. NaOH

13. The water becomes turbid because of the formation of calcium hydroxide which is less soluble than sodium hydroxide or potassium hydroxide.



16. Iron, steam, the black oxide and hydrogen.

17. CaCl_2 , CaO

18. A dehydrating agent removes the element of water i.e. hydrogen and oxygen atoms in stoichiometric ratio i.e. 2:1, ratio for water from a compound.

19. Conc H_2SO_4

Long answer questions

1. page 34

2. page 35

3. When the reversible reaction takes place in the beginning the forward reaction is fast and the backward reaction is slow as the speed of a reaction always depends upon the masses or concentrations of the reacting substances. As the reactants are consumed the forward reaction becomes slower. Similarly, as the products are formed the backward reaction becomes faster. At one point of time the forward and the backward reactions attain the same speed. There after the reaction does not appear to move in any single direction and the amounts of the reactants and products do not change. We say that an equilibrium has been attained. This is a chemical equilibrium as it has been obtained through a chemical change.

Objective questions.

Answers

1. a. 0 degree Celsius

2. b. 4 degree Celsius

3. a. decreases with temperature

4. a. CaO

5. b. K

Fill in the blanks

1. A solubility curve represents the change in solubility of a solute with temperature.

2. When water is added to anhydrous copper (II) sulphate the colour of the white solid changes to blue.

3. Calcium reacts mildly with cold water in comparison to sodium.

4. When steam is passed over red hot iron the oxide of iron formed has the formula Fe_3O_4 .

5. is efflorescent.

6. For the preparation of CO from HCOOH, a dehydrating agent is required.

True or false

1. FALSE
2. FALSE
3. FALSE
4. FALSE
5. FALSE
6. FALSE
7. TRUE

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