**Karan Arora**  **R.L. Institute M: 9416974837**

**Max Time : 1 hr** **IONIC EQUILIBRIUM Max Marks : 25**

**Class = 11th Chemistry**

1. Calculate the pH of a solution obtained by mixing 50 ml of 0.2 M HCl with 49.9 ml of 0.2 M NaOH solution. [ 2 ]
2. A 50 ml solution of pH = 1 is mixed with 50 mL solution of pH = 2. What will be the pH of the mixture? [ 2 ]
3. Calculate the H3O+ ion concentration of a solution having pH = 5.37. [ 2 ]
4. How many grams of NaOH must be dissolved in one litre of the solution to give it a pH value of 13? [ 2 ]
5. Lemon juice has a pH = 2.1. If all the acid in lemon is citric acid ( H Cit. H+ + Cit – 1 ) and Ka for citric acid is 8.4 x 10 – 4 mol/L, what is the concentration of citric acid in lemon juice? [ 2 ]
6. The pH of 0.1 M solution of a organic acid is 3. Calculate the dissociation constant of the acid.

[ 2 ]

1. Which of the following are Lewis acids? H2O , BF3 , H+ , . [ 2 ]
2. The pH of a sample of vinegar is 3.76. Calculate the Concentration of Hydrogen ion in it. [ 2 ]
3. The ionization constant of acetic acid is 1.74 x 10 – 5, Calculate the degree of dissociation of acetic acid in its 0.05 M solution. Calculate the concentration of acetate ions in the solution and its pH.

[ 3 ]

1. It has been found that the pH of a 0.01M solution of an organic acid is 4.15. Calculate the concentration of the anion, the ionization constant of the acid and its pKa. [ 3 ]
2. The species : H2O , , and NH3 can act both as Bronsted acids and bases. For each case give the corresponding conjugate acid and base. [ 3 ]

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