**CLASS :XI**

**SUBJECT :Chemistry**

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| **Sr. No.** | **Knowledge Based** | **Marks** |
| 1. | State law of mass action. | 1 |
| 2. | Give the relation between Kp and Kc | 1 |
| 3. | Give an examples of heterogenous equilibrium. | 1 |
| 4. | State Le-chatelier’s principle. | 1 |
| 5. | What do you mean by buffer solution? | 1 |
| 6. | Give one example of acidic buffer and a basic buffer. | 2 |
| 7. | With the help of examples explain the factors affecting the strength of an acid. | 2 |
| **S. No.** | **Understanding Based** |  |
| 1. | What is the effect of temperature on solubility of gas in liquid? | 1 |
| 2. | Why a catalyst does not affect the magnitude of equilibrium constant? | 1 |
| 3. | Predict the direction of reaction when Qc>Kc | 1 |
| 4. | Why does BF3 act as a lewis acid? | 1 |
| 5. | How does the value of equilibrium constant predict the extent of reaction? | 2 |
| **S. No.** | **Application** |  |
| 1. | NH3 act as Bronsted base as well as Lewis base.Explain | 2 |
| 2. | Arrange the following acid in increasing order of their pKa values:- | 2 |
|  | HCl,HBr,HF and HI |  |
| 3. | Give reasons for the following:-  a)solution of NH4Cl in water shows pH less than 7 b)In qualitative analysis NH4Cl is added before adding NH4OH for testing Fe3+ or Al3+ ions . c)Pure NaCl precipitates out when HCl gas is passed in brine solution. d)H2S is passed inacidic medium to precipitate group II cations. e) All lewis bases are Bronsted bases. | 5 |
| **S.No.** | **Value Based** |  |
| 1. | Amit is very fond of citrus fruits and takes a large amount of lemon juice regulary while Sumit does not take any sour food in his diet but the pH of blood of the both is same.As a student of Chemistry how will you explain this?What value is assocaiated with it? | 3 |
| **S.No.** | **HOTS** |  |
| 1. | When sulphur in the form of S8 is heated at 900K,the initial pressure of 1atm falls by 29% at equilibrium.This is because of conversion of some S8 to S2.Find the value of equilibrium constant for this reaction. | 3 |
| 2. | The pH of 0.1M HCN solution is 5.2.What is the value of its dissociation constant,Ka? | 3 |