

- ix) Buffer index can be defined as the ratio of the increment of strong base/acid to the (1M)
- a) change in pH
 - b) change in viscosity
 - c) change in osmotic pressure
 - d) none of the above
- x) Toxicity is measured on the basis of properties (1M)
- a) pharmacological
 - b) pharmaceutical
 - c) Rheological
 - d) Colligative
- xi) Dissolution is affected by..... (1M)
- a) surface area
 - b) viscosity
 - c) temperature
 - d) all of the above
- xii) Addition of alcohol In to the hydrophilic colloid leads to (1M)
- a) crystallization
 - b) hydration
 - c) precipitation
 - d) stabilisation
- xiii) Solubility of gases increases with decrease in (1M)
- a) Mass
 - b) Volume
 - c) Temperature
 - d) Pressure
- xiv) Solubility depends upon (1M)
- a) Temperature
 - b) Solute
 - c) Solvent
 - d) All of them
- xv) Number of grams of compound needed to saturate 100g of water is defined for (1M)
- a) Solubility
 - b) Volatility
 - c) Polarity
 - d) All of them
- xvi) Thermodynamically system is stable when surface free energy is (1M)
- a) Maximum
 - b) Minimum
 - c) Varies
 - d) Hundred
- xvii) $\text{pH} + \text{pOH} = ?$ (1M)
- a) 10
 - b) 7
 - c) 14
 - d) 7.2
- xviii) Fick's law is used for study of _____. (1M)
- a) Dissolution rate
 - b) Disintegration rate
 - c) Dissociation rate
 - d) Diffusion rate

- xix) The pressure of a fixed amount of gas at a constant temperature is inversely proportional to the volume of the gas is called as (1M)
- a) Boyle's Law
 - b) Charles law
 - c) Gay lusacs law
 - d) Avogadros law
- xx) An Aerosol is (1M)
- a) A Suspension of fine particles or droplets
 - b) A Pure gas filled in container
 - c) A Liquid filled in container
 - d) A mixture of two immiscible liquids only filled in container

PART -II

2. a) Write about different types of complexes. (5M)
- b) Explain any one method of complex analysis. (5M)
3. a) Derive an expression for Langmuir adsorption Isotherm. (5M)
- b) Discuss any one method for determination of Surface Tension. (5M)
4. a) Define Solubility and list out the factors influencing solubility of gases in liquids. (5M)
- b) State and discuss about distribution law and write its limitations. (5M)

PART -III

- 5 Discuss the various methods of expressing concentration in solubility of drugs. (5M)
- 6 Explain buffer capacity and give its pharmaceutical significance. (5M)
- 7 What are ideal and real solutions using Raoult's law and discuss its limitations. (5M)
- 8 Discuss Protein binding of drugs with suitable examples. (5M)
- 9 Define and describe the concept of HLB system along with its limitations. (5M)
- 10 Explain polymorphism and its significance in pharmaceutical formulations with Suitable examples. (5M)
- 11 Describe any one method to adjust the tonicity of solutions. (5M)
- 12 Write a note on refractive index and dissociation constant and discuss their applications. (5M)
- 13 Write about diffusion principles in biological systems. (5M)