CLASS XI
CHEMISTRY CBT
NOVEMBER 2023
QP AND ANALYTICS

Q NO	CHAPTER	QUESTION	OPTIONS PROVIDED	CORRECT OPTION	EXPLAINATION	% ATTEMPTED CORRECTLY
01	EQUILIBRIUM	When NH4Cl is added to NH4OH solution the dissociation of ammonium hydroxide is reduced. It is due to:	A. Common Ion Effect B. Hydrolysis C. Oxidation D. Reduction	A	Suppression of Ionization of Weak Electrolyte by Adding Strong Electrolyte	52.60 %
02		For the reversible reaction $N_2(g) + 3H_2(g) \leftrightharpoons 2NH_3 + Heat$ The equilibrium shifts in forward direction	A. By increasing the concentration of Ammonia B. By decreasing the Pressure C. By decreasing the concentration Nitrogen and Hydrogen D. By increasing the Pressure and decreasing the Temperature	D	As the molecules of Product side is less so by increasing Pressure and the reaction is exothermic than by decreasing the Temperature	63.50 %
03		Which of the following aqueous solutions will have highest pH?	A. NaCl B. CH_3COONa C. Na_2CO_3 D. Acetic Acid	C	The Hydrolysis product is strong Base and Weak Acid	51.90 %
04		Assertion : When Qc=Kc, reaction is at equilibrium. Reason : At equilibrium, ΔG is 0.	Assertion and Reason both are true but Reason is not the correct explanation of Assertion.			35.90 %

CLASS XI
CHEMISTRY CBT
NOVEMBER 2023
QP AND ANALYTICS

05		**Assertion:** If a volume is kept constant and an inert gas such as argon is added which does not take part in the reaction, the equilibrium remains undisturbed. **Reason:** It is because the addition of an inert gas at constant volume does not change the partial pressure or the molar concentrations of the substance involved in the reaction.	**Assertion and Reason both are true but Reason is the correct explanation of Assertion.**			**57.40 %**
06	**EQUILLIBRIUM**	**Assertion:** Buffer system of carbonic acid and sodium bicarbonate is used for the precipitation of hydroxides of third group elements. **Reason:** It maintains the pH to a constant value, about 7.4.	**Assertion is False but Reason is True**			**45.30 %**
07		**Assertion:** Addition of silver ions to a mixture of aqueous sodium chloride and sodium bromide solution will first precipitate AgBr rather than AgCl. **Reason:** Ksp of AgCl > Ksp of AgBr.	**Assertion and Reason both are true but Reason is the correct explanation of Assertion.**			**09.10 %**
08		In a reversible chemical reaction at equilibrium, if the concentration of any one of the reactants is doubled, then the equilibrium constant will	**A. DOUBLED** **B. HALVED** **C. REMAIN SAME** **D. One Fourth**	**C**	Explanation: Equilibrium constant is independent of the concentration of reactants.	**38.50 %**
09		Among the following the weakest Bronsted base is	**A.** Flouride Ion **B.** Chloride Ion **C.** Bromide Ion **D.** Iodide Ion	**D**	Explanation: According to this theory, an acid is a proton donor and a base is a proton acceptor. Every strong Bronsted acid has a weak conjugate base and every strong base has a weak conjugate acid. The acidity increases in halogen group atoms, HF < HCl < HBr < HI. So, HI is highly acidic and their conjugate bases decrease in order $F^- > Cl^- > Br^- > I^-$.	**67.30 %**
10		Consider the nitration of benzene using mixed conc. H_2SO_4 and HNO_3. If a large amount of $KHSO_4$ is added to the mixture, the rate of nitration will be	**A. Slower** **B. Unchanged** **C. Doubled** **D. Faster**	**A**	Explanation: If a large amount of $KHSO_4$ is added then conc. of HSO_4^- ions increases and the reaction will be shifted in backward direction hence, the rate of nitration will be slower.	**64.90 %**