Sig. of Supdt.....

KT-XI-18-I

Chemistry (Part – I)

Fresh/Reappear

Roll No.....

Fic. No.....

Code-22

Fic. No.....

Time allowed: 3 Hrs **Chemistry (Part – I)** **Marks: 85**

Fresh / Reappear

Note: There are three sections of the paper, A, B & C. Attempt Section – A on the same paper and return it to the Superintendent within the given time. No marks will be awarded for cutting, erasing or over writing. Mobile phone etc. are not allowed in the examination hall.

Time: 20 Mins **Section "A"** **Marks: 18**

Q.1 Write the correct option i.e. A, B, C or D in the empty box provided opposite each part.

i. Stalamometer method is used for measuring of .....of a liquid. — A
A. Surface tension B. Viscosity B. Vapour pressure D. All of them

ii. Which one of the following molecules has zero dipole moment? — D
A. NH_3 B. NF_3 C. H_2O D. BF_3

iii. Number of molecules N_2 in $1dm^3$ of its volume at S.T.P? — D
A. 6.022×10^{23} B. 2.68×10^{23} C. 6.022×10^{22} D. 2.68×10^{22}

iv. The sum of all energies of all the molecules / atoms of a substance is called its ..... — D
A. Specific heat B. Heat capacity C. Latent heat D. Internal energy

v. Two electrons in the same orbital cannot have the same spin was first postulated by ..... — B
A. Dalton B. Pauli C. Hunds D. Crookes

vi. The total pressure of mixture of different gases is result of the total .....per unit area. — D
A. Temperature B. Volume C. No. of moles D. No. of collision

vii. pH of 0.15 M NaOH solution is ..... — C
A. 1.5 B. 0.8 C. 13.2 D. 12.5

viii. If the heat of solution is .....the solubility of a substance decreases with increase in temperature — B
A. Positive B. Negative C. Zero D. All of these

ix. Which one of the following has no effect on the equilibrium composition of a reaction? — D
A. Amount of reactants B. Temperature C. Pressure D. Catalyst

x. Rate of reaction depends on ..... — A
A. Concentration B. Temperature C. Catalyst D. All A, B & C

xi. In SI system, the unit of heat capacity is ..... — B
A. Nm^{-2} B. JK^{-1} C. Joules D. $KJ.mol^{-1}$

xii. The rate of diffusion of H_2 compared with He is ..... — B
A. 0.5 times B. 1.4 times C. 2 times D. 4 times

xiii. Freezing point of solution as compared to the solvent ..... — B
A. Higher B. Lower C. Variable D. Remain the same

xiv. A cubic crystal has .....centre of symmetry. — B
A. 0 B. 1 C. 2 D. 3

xv. A cathode has the reduction potential .....than the anode. — A
A. Less B. More C. Equal D. Always zero

xvi. Salt of weak base and strong acid has a pH approximately..... — B
A. 6 B. 7 C. 8 D. 9

xvii. With increase of temperature, the vapour pressure of a liquid ..... — C
A. Decreases B. Increases C. Does not change D. Both A & B

xviii. K_P is less than K_C when the difference of the mole of products and reactants is .....
A. Zero B. Positive C. Negative D. One

Time: 2:40 Hours

KT-XI-18-I.

Chemistry (Part-I)

Fresh/Reappear

Section "B"

Marks: 40

Q.2 Attempt any TEN parts. Each part carries equal marks.

i. Discuss the factors affecting vapour pressure.

ii. Explain standard enthalpy changed and heat capacity.

iii. How will you differentiate between a continuous and line spectrum?

iv. What is axis of symmetry? Describe with a simple diagram.

v. Explain the chemistry of corrosion of iron.

vi. Explain the phenomena of osmosis and the pressure exerted in this process.

vii. With the help of K_c, how will you predicate the direction of reaction?

viii. What will be the volume in 60gram of NH_3 at S.T.P?

ix. Write note on Hund's rule.

x. Describe Joule Thomson effect.

xi. Explain the relationship between reactant concentration and the rate of reaction.

xii. All the four bonds in CH_4 are equal. Explain with reasons.

xiii. Write note on salt hydrolysis.

Section "C"

Marks: 27

Note: Answer any THREE questions. All question carries equal marks.

Q.3 a. Write note on plasma, the fourth state of matter.

b. Explain factors affecting boiling point.

Q.4 a. Explain hybridization with reference to sp^3 and sp modes of hybridization.

b. Determine the pH of 0.25 M NaOH solution.

Q.5 a. Write note on depression in freezing point of solution.

b. Explain lattice energy by giving an example.

Q.6 Write short note on the following

a. Dry cell

b. Law of mass action