

Sig. of Supdt. ....

Roll No. ....

ہال میں موبائل فون لانا بالکل منع ہے

Fig. # .....

Fig. # .....

Time Allowed : 3 Hrs.

**CHEMISTRY**  
 (Part – I)

Total Marks: 85

(Fresh / New Course)

NOTE : There are THREE sections in this paper i.e. Section A, B and C.

Time : 20 Mins.

**Section "A"**

Marks: 18

NOTE : Use this sheet for this section. No mark will be awarded for cutting, erasing or over writing.

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

- i) In face centered cube each point at the corner is shared by ..... unit cells.  (i)  
 (a) 2 (b) 4 (c) 6 (d) 8
- ii) Molar heat of vaporization for water .....  (ii)  
 (a) 6 KJ/mol (b) 4.07 KJ/mol (c) 40.7 KJ (d) None of these
- iii) All of the following substances are crystalline except .....  (iii)  
 (a) Ice (b) Diamond (c) Sucrose (d) Glass
- iv) The minimum energy needed for a reaction to take place is called .....  (iv)  
 (a) K.E. (b) P.E. (c) Internal energy (d) Activation energy
- v) Balmer series of spectral lines appear in the ..... portion of spectrum.  (v)  
 (a) I.R (b) U.V (c) Visible (d) x-rays
- vi)  $K_p$  is less than  $K_c$ , when the difference of the moles of the products and reactants is .....  (vi)  
 (a) Zero (b) Positive (c) Negative (d) None of these
- vii) All of them are state function except .....  (vii)  
 (a) Pressure (b) Entropy (c) Enthalpy (d) None of these
- viii) Salts of weak acids and weak bases may produce Neutral solution of .....  (viii)  
 (a)  $PK_a > PK_b$  (b)  $PK_a < PK_b$  (c)  $PK_a = PK_b$  (d)  $K_a = K_b$
- ix) Shape of the orbital depends on the value of the ..... quantum number.  (ix)  
 (a) Principle (b) Azimuthal (c) Magnetic (d) Spin
- x) Solubility of a solute in solvent depends upon .....  (x)  
 (a) Nature of solute (b) Temperature (c) Pressure (d) All of these
- xi) SI unit of coefficient of viscosity is .....  (xi)  
 (a)  $Kgm^{-1}$  (b)  $Kgs^{-1}$  (c)  $Kgm^{-1}S^{-1}$  (d)  $Kgms^{-2}$
- xii)  $K_p$  is more than  $K_c$  when the difference of the moles of the products and reactants is .....  (xii)  
 (a) Zero (b) One (c) Negative (d) Positive
- xiii) The methods, which are not employed for measuring surface tension of liquids are .....  (xiii)  
 (a) Torsion methods (b) Capillary method  
 (c) Ostwald method (d) Drop method
- xiv) What will be the wave number of a radiation with  $2 \times 10^9$  nm .....  (xiv)  
 (a)  $0.5 \times 10^9 nm^{-1}$  (b)  $2 \times 10^9 nm^{-1}$  (c)  $5 nm^{-1}$  (d)  $0.5 \times 10^9 nm$
- xv) In which of the following values of  $K_c$ , the reaction goes to completion in the forward direction .....  (xv)  
 .....  
 (a)  $10^2$  (b)  $10^{30}$  (c)  $10^{20}$  (d) 1
- xvi) A cubic crystal has ..... centre of symmetry.  (xvi)  
 (a) One (b) Two (c) Three (d) Six
- xvii) Depression of freezing point is ..... property.  (xvii)  
 (a) Additive (b) Constitutive (c) Extensive (d) Colligative
- xviii) How many orbitals are allowed for principle quantum numbers  $n = 3$ ?  (xviii)  
 (a) 9 (b) 8 (c) 6 (d) 4

MRD-XI-16(A) 216  
CHEMISTRY  
(Part - I)  
(Fresh / New Course)  
Section - B & C

Total Marks : 67

Time Allowed : 2:40 Hrs.

Section - B

Marks : 40

**Q. 2 Answer any Ten parts. Each part carries equal marks.**

- (i) Explain properties of colloids.
- (ii) What do you mean by state of a system? What are state functions?
- (iii) Explain the geometry of CO and CO<sub>2</sub> molecule with the help of dipole moment.
- (iv) Explain why water droplet is spherical.
- (v) Write note on properties of x-rays.
- (vi) Write note on standard hydrogen electrode.
- (vii) Explain structure of water and ammonia on the basis of VSEPR theory.
- (viii) What is [H<sup>+</sup>] and [OH<sup>-</sup>] ions concentration of a solution which has pH = 4.78.
- (ix) What do you know about London dispersion forces.
- (x) Discuss the relation between K<sub>p</sub> and K<sub>x</sub>.
- (xi) Describe Lewis acids and bases in detail.
- (xii) Explain collision theory of reaction rate.
- (xiii) Write note on pressure volume work done.

Section - C

Marks : 27

**NOTE :** Attempt any THREE questions. Each question carries equal marks.

- Q. 3 a) Derive non ideal gas expression.  
b) Explain Hydrogen bond and its applications.
- Q. 4 a) Write note on Pauli exclusion principle.  
b) What is axis of symmetry? Describe with the help of simple diagram.
- Q. 5 a) State and explain Hess's law.  
b) Differentiate between ionic, covalent and molecular crystalline solids.
- Q. 6 Write short note on the following.  
a) Value of "R" in SI system.  
b) Bonding and its applications.