THE INDIAN HEIGHTS SCHOOL
Worksheet (2013 – 14)
Chemistry - XI

Date:13.9.13 **Name:**

Q.1 Multiple Choice Questions:

i) Which orbital is double dumbbell in shape
(a) S (b) F (c) D (f) P

ii) In which case boiling point of liquid increased?
(a) Intramolecular H-bonding
(b) Intermolecular H-bonding
(c) Dipole moment
(d) Vander wall forces

iii) Kinetic energy of molecule is highly in
(a) Gases (b) Solids (c) Liquids (d) Solutions

iv) Which among the following is an extensive property of the system?
(a) Temperature (c) Refractive Index
(b) Volume (d) Viscosity

v) How many atoms are present in a mole of H_2SO_4
(a) 3 X 6.02 X 10^{23} (c) 6 X 6.02 X 10^{23}
(b) 5 X6.02 X 10^{23} (d) 7 6.02 X 10^{23}

vi) Friction act between liquid layers known as:
(a) Surface Tension (c) Viscosity
(b) Dipole Moment (d) Fluidity

vii) The ratio of the radii of the 1, 2 & 3 Bohr orbits is
(a)1 : 0.5 : 0.33 (c) 1 : 4 : 9
(b)1 : 2 : 3 (d) 1 : 8 : 27

viii) The hybridization of atomic orbital of N - atom in NO_2^+, NO_3^- and NH_4^+ are
(a) Sp^2, sp^3, sp^2
(b) Sp, sp^2, sp^3
(c) Sp^2, sp, sp^3
(d) Sp^2, sp^3, sp

ix) According to Charles law:
(a) V α T (b) V α 1/T (c) P α T (d) P α 1/T

x) Bond order in O_2^{-2} is

(a) 2.5 (b) 2 (c) 2 (d) 1

xi) Elements with atomic number 90 and onwards are called:
(a) Actinoids (c) Transutanics
(b) Lanthonoids (d) Rare earths

xii) The number of nodes in 4d orbital is

(a) 0 (b) 1 (c) 2 (d) 3

xiii) On increasing temperature surface tension
(a) Increased (c) decreased
(b) No effect (d) depends on nature of liquid

xiv) In the modern periodic table elements are arranged in
(a) Increasing order (c) increasing atomic number
(b) Increasing volume (d) alphabetically

xv) Gas law's applicable successfully in

(a) Real gas (c) both ideal and real gas
(b) Ideal gas (d) None of the above

Q.2 Short Answer type questions
i) What is ionization energy?
ii) What is adiabatic process?

iii) What is Modern periodic law?
iv) What is electro negativity?
v) Define the term electro affinity?
vi) What is an extensive and intensive property?
vii) What is De Broglie equation?
viii) Explain the structure of NH3 with the help of VSEPR Theory.
ix) What is Paul's Exclusion law?
x) How can we define term Mole?
xi) What is Dipole Moment?
xii) What is critical temperature?
xiii) What is compressibility factor (Z)?
xiv) What is Gibbs free energy (G)?
xv) What is Heisenberg's principal?

Q.3 Long Answer type questions:
(i) Explain briefly H-bonding. Also explain its types and applications.
(ii) Explain work done in reversible and irreversible manner?
(iii) Derive Vander wall equation for real gases?
(iv) Explain assumptions of kinetic energy theory of gases.
(v) Explain Hybridization and its types in brief?
(vi) What is VBT? Explain structure of CH4. CH2 = CH2 and CH ≡ CH with the help of VBT.
(vii) Explain MOT and its applications in brief?
(viii) Define different types of Quantum numbers in brief?
(ix) Explain the features of Bohr Model and its drawback?
(x) Explain photoelectric effect.