

Worksheet (2013 – 14)
Chemistry - XI

Date:

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) $3 \times 6.02 \times 10^{23}$ (c) $6 \times 6.02 \times 10^{23}$
(b) $5 \times 6.02 \times 10^{23}$ (d) $7 \times 6.02 \times 10^{23}$
- 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) $V \propto T$ (b) $V \propto 1/T$ (c) $P \propto T$ (d) $P \propto 1/T$
- 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) Transutronics
 (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 NH_3 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 CH_4 , $\text{CH}_2 = \text{CH}_2$ and $\text{CH} \equiv \text{CH}$ 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.