**Karan Arora** **R.L. Chemistry Classes M: 99968-68554**

**Max Time : 1 hr** **Class = 11th Chemistry Test**  **Max Marks : 25**

**STRUCTURE OF ATOMS**

**[Quantum Numbers , Groups , Ionization Enthalpy]**

1. Explain Heisenberg uncertainty principle. [ 1 ]
2. Compare the size of : [ 2 ]

(a) Mg and Mg 2+ (b) O and O2 –  (c) Al and Al3+ (d) K and Cs

1. A golf ball has a mass of 40 g and a speed of 45 m/sec. If speed can be measured within accuracy of 2 %, calculate the uncertainty in position. [ 2 ]
2. An electron has a speed of 500 m/s with an uncertainty of 0.02 %. What is the uncertainty in locating its position? [ 2 ]
3. Calculate the uncertainty in the position of a dust particle with mass equal to 1 mg if the uncertainty in its velocity is 5.5 x 10 – 20 m/s. [ 2 ]
4. Using s , p , d , and f notations, describe the orbitals with the following quantum numbers : [ 2 ]

(a) n = 2 , l = 1 (b) n = 4 , l = 0 (c) n = 5 , l = 3 (d) n = 3 , l = 2

1. Write down the quantum numbers n , l and m for the following orbitals : [ 2 ]

(a) (b) (d)

1. What atoms are indicated by the following electronic configurations ? [ 2 ]

(a) 1s2 2s2 2p1 (b) [Ar] 4s2 3d1

1. Give the electronic configuration of the following ions : [ 2 ]

(a) Cu2+ (b) Cr3+ (c) Fe3+  (d) S2 –

1. Give the electronic configurations of the elements : 19K , 25Mn , 20Ca. [ 2 ]
2. Write all the elements of group 2 , 4 , 16. [ 3 ]
3. Define Ionization enthalpy. Write factor affecting Ionization enthalpy. [ 3 ]