**Karan Arora**  **R.L. Institute M: 9416974837**

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

**Topic : Hybridization , E.C. , Periodic Classification**

1. Multiple choice questions : [ 1 X 9 = 9 ]
2. Among the elements from atomic number 1 to 36, the number of elements which have an unpaired electrons in the s-shell is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 4 | b) 7 | c) 6 | d) 9 |

1. The element with atomic number 117 if discovered would be placed in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) noble gas family | b) Alkali family | c) Alkaline earth family | d) Halogen family |

1. The size of following species increase in the order:

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mg2+ < Na+ < F – < Al | b) F – < Al < Na+ < Mg2+ | c) Al < Mg2+ < F –  < Na+ | d) Na+ < Al < F –  < Mg2+ |

1. Which of the following transitions involved maximum amount of energy?

|  |  |  |  |
| --- | --- | --- | --- |
| a) M – (g) M (g) | b) M (g) M – (g) | c) M+ (g) M2+ (g) | d) M2+ (g) M3+ (g) |

1. Electron affinity is positive, when:

|  |  |
| --- | --- |
| a) O changes into O – | b) O – changes into O 2 – |
| c) O change into O+ | d) Electron affinity is always negative. |

1. Which of the following represent most electropositive element:

|  |  |  |  |
| --- | --- | --- | --- |
| a) [He] 2s1 | b) [He] 2s2 | c) [Xe] 6s1 | d) [Xe] 6s2 |

1. The first ionization enthalpies of Na , Mg , Al and Si are in the order :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Na < Mg > Al < Si | b) Na > Mg > Al > Si | c) Na < Mg < Al < Si | d) Na > Mg > Al < Si |

1. Which of the following is the correct order of size of the given species:

|  |  |  |  |
| --- | --- | --- | --- |
| a) I > I – > I+ | b) I+ > I – > I | c) I > I+ > I – | d) I – > I > I+ |

1. The size of isoelectronic species : F – , Ne and Na+ is affected by :

|  |  |
| --- | --- |
| a) Nuclear charge (Z) | b) valence principle quantum number (n) |
| c) electron-electron interaction in outer orbital | d) None of the factor because size remain same. |

1. Which of the following species has the largest and smallest size? Mg , Mg2+, Al , Al3+. [ 1 ]
2. Calculate the energy required to convert all the atoms of magnesium-to-magnesium ions present in 24 mg vapors? First and second ionization enthalpies of Mg are 737.76 and 1450.73 KJ/mol respectively. [ 2 ]
3. What are the atomic number of the elements whose outermost electrons are represented by : [ 2 ]

(a) 3s1 (b) 2p3 (c) 3d6

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

(a) [He] 2s1 (b) [Ne] 3s2 3p3 (c) [Ar] 4s2 3d1

1. Find magnetic moment of the following : (a) Fe3+ (b) Cu2+. [ 2 ]
2. The amount of energy released when one million atoms od iodine are completely converted into I – ions in the vapor state according to the equation : I (g) + e –  I – (g) is 4.9 x 10 – 13 J. Calculate the electron affinity of iodine in: (i) KJ/mol (ii) eV per atom. [ 2 ]
3. Using periodic table, predict the formulas of the compounds which might be formed by the following pairs of elements : (a) Silicon and Bromine (b) Aluminium and Sulphur [ 2 ]
4. Define Electronegativity. Write factors that affects electronegativity. [ 3 ]