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

**Classification of Elements – 2**

1. The atomic number of the element unnilennium is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 109 | b) 102 | c) 108 | d) 119 |

1. The group number , number of valence electrons and valency of an element with atomic number 15, respectively are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 16 , 5 & 2 | b) 15 , 5 & 3 | c) 16 , 6 & 3 | d) 15 , 6 & 2 |

1. The element with Z = 120 (not yet discovered) will be a/an :

|  |  |
| --- | --- |
| a) Inner – transition metal | b) Alkaline earth metal |
| c) Alkali metal | d) Transition metal |

1. Which of the following has the maximum number of unpaired electrons :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Mg2+ | b) Ti3+ | c) V3+ | d) Fe2+ |

1. The ionic radii of K+ , Na+, Al3+ and Mg2+ are in the order :

|  |  |
| --- | --- |
| a) Na+ < K+ < Mg2+ < Al3+ | b) Al3+ < Mg2+ < K+ < Na+ |
| c) Al3+ < Mg2+ < Na+ < K+ | d) K+ < Al3+ < Mg2+ < Na+ |

1. The correct order of electron gain enthalpy is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) O > S > Se > Te | b) Te > Se > S > O | c) S > O > Se > Te | d) S > Se > Te > O |

1. The process that is NOT endothermic in nature :

|  |  |
| --- | --- |
| a) Ar (g) + Ar –  (g) | b) H (g) + H –  (g) |
| c) O – (g) + O 2–  (g) | d) Na (g) Na +  (g) + |

1. The correct order of the atomic radii of C , Cs , Al and S is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) C < S < Al < Cs | b) S < C < Cs < Al | c) S < C < Al < Cs | d) C < S < Cs < Al |

1. The ionic radii (in ) of N3 – , O2 – and F – are respectively :

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1.71 , 1.40 & 1.36 | b) 1.71 , 1.36 & 1.40 | c) 1.36 , 1.40 & 1.71 | d) 1.36 , 1.71 & 1.40 |

1. Which one of the following is the smallest in size:

|  |  |  |  |
| --- | --- | --- | --- |
| a) N3 – | b) O2 – | c) F – | d) Na+ |

1. The first ionization potential 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. The element with the highest first ionization potential is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Boron | b) Carbon | c) Nitrogen | d) Oxygen |

1. The correct order of second ionization potential of carbon , nitrogen , oxygen and fluorine is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) C > N > O > F | b) O > N > F > C | c) O > F > N > C | d) F > O > N > C |

1. Screening effect is not observed in

|  |  |  |  |
| --- | --- | --- | --- |
| a) He+ | b) Li2+ | c) Be3+ | d) in all the three |

1. Which of the following configuration represents atoms of the element having the highest second ionization potential ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1s2 2s2 2p4 | b) 1s2 2s2 2p6 | c) 1s2 2s2 2p6 3s1 | d) 1s2 2s2 2p6 3s2 |

1. Valence electron in the element A are 3 and that in element B are 6. Most probable compound formed from A to B is

|  |  |  |  |
| --- | --- | --- | --- |
| a) A2B | b) AB2 | c) A6B3 | d) A2B3 |

1. In crystals of which of the following ionic compounds, would you except the maximum distance between centres of cations and anions.

|  |  |  |  |
| --- | --- | --- | --- |
| a) CsF | b) Csl | c) Lil | d) LiF |

1. Which of the following has highest value of ionic radius ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Li+ | b) B3+ | c) O2- | d) F – |

1. Which of the following species has the highest electron affinity ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) F – | b) O | c) O – | d) Na+ |

1. The first H­1) and the second (H2) ionization enthalpies (KJ mol-1) of a few elements designated by Roman numerals are shown below:

Elements H1 H2

I 2372 3251

II 520 7300

III 900 1760

IV 1680 3380

Which of the above elements is likely to be: (a) a reactive metal (b) a reactive non – metal

(c) a noble gas (d) a metal that forms a stable binary halide of the formula AX2 (X = halogen).

1. Explain ionization energy and write 3 factors on which it depends. [ 3 ]
2. Identify group and period of following elements : [ 2 ]

(a) Xe (b) Uup

**Answers**

**Classification of Elements – 2 [CLASS = 11th ]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1. a | 1. b | 1. b | 1. d | 1. c | 1. d | 1. b |
| 1. a | 1. a | 1. d | 1. a | 1. c | 1. c | 1. d |
| 1. c | 1. d | 1. b | 1. c | 1. b |  |  |

1. (a) II (b) IV (c) I (d) III
2. Maximum amount of energy required to remove an electron from an isolated gaseous atom is known as Ionization energy.

Factors :

1. Ionization energy effective nuclear charge
2. Ionization energy
3. Ionization energy Penetration effect
4. Ionization energy
5. (a) Xe : Group no. = 18 , Period no. = 5 (b) Uup : Group no. = 15 , Period no. = 7