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**Max Time : 1 hr** **Class = 11th Chemistry Max Marks : 35**

**Classification of Elements – 1**

1. Consider the isoelectronic species, Na+, Mg2+ , F – and O2- . The correct order of increasing length of their radii is \_\_\_\_\_\_ .

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| --- | --- |
| a) F - < O2- < Mg2+ < Na+ | b) Mg2+ < Na+ < F - < O2- |
| c) O2- < F - < Na+ < Mg2+ | d) O2- < F - < Mg2+ < Na+ |

1. Which of the following is not an actinoids ?

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| --- | --- | --- | --- |
| a) Curium (Z = 96) | b) Californium (Z = 98) | c) Uranium (Z = 92) | d) Terbium (Z = 65) |

1. The order of screening effect of electrons of s, p, d and f orbitals of a given shell of an atom on its outer shell electrons is :

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| --- | --- | --- | --- |
| a) s > p > d > f | b) f > d > p > s | c) p < d < s > f | d) f > p > s > d |

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

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

1. Among halogens, the correct order of amount of energy released in electron gain (electron gain enthalpy) is :

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| --- | --- | --- | --- |
| a) F > Cl > Br > I | b) F > Cl < Br > I | c) F < Cl > Br > I | d) F < Cl < Br < I |

1. The elements in which electrons are progressively filled in 4f- orbital are called

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| --- | --- | --- | --- |
| a) actinoids | b) transition elements | c) Lanthanoids | d) Halogens |

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

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

1. The element with atomic number 113 has recently been discovered. Its electronic configuration is similar to that of

|  |  |  |  |
| --- | --- | --- | --- |
| a) Si | b) Ga | c) Bi | d) At |

1. Point out the wrong statement, in a given period of the periodic table, the s-block elements has, in general, a lower value of

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| --- | --- | --- | --- |
| a) Electronegativity | b) atomic radius | c) Ionization energy | d) Electron affinity |

1. The five successive ionization energies of an element are 800, 2427, 3658, 25024 and 32824 KJ mol-1 respectively. The number of valence electrons is

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| --- | --- | --- | --- |
| a) 3 | b) 5 | c) 4 | d) 2 |

1. Screening effect is not observed in

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

1. In which case effective nuclear charge is minimum ?

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| --- | --- |
| a) Be | b) Be2+ |
| c) Be3+ | d) all have the same effective nuclear charge |

1. Covalent radius of nitrogen is 70 pm. Hence covalent radius of boron is about

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| --- | --- | --- | --- |
| a) 60 pm | b) 110 pm | c) 50 pm | d) 40 pm |

1. The correct order of decreasing first ionization energy is

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| --- | --- | --- | --- |
| a) C > B > Be > Li | b) C > Be > B > Li | c) B > C > Be > Li | d) Be > Li > B > C |

1. The first ionization potential (eV) of Be and B respectively are

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| --- | --- | --- | --- |
| a) 8∙29, 9∙32 | b) 9∙32, 8∙29 | c) 9∙32, 9∙32 | d) 8∙29, 8∙29 |

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

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

1. The correct order of radii is

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| --- | --- | --- | --- |
| a) N < Be < B | b) F – < O2- < N3- | c) Na < Li < K | d) Fe3+ < Fe2+ < Fe4+ |

1. The set representing the correct order of first ionization potential is

|  |  |  |  |
| --- | --- | --- | --- |
| a) K > Na > Li | b) Be > Mg > Ca | c) B > C > N | d) Ge > Si > C |

1. Which of the following grouping represents a collection of isoelectronic species? (At. no; Cs = 55, Br = 35)

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| --- | --- | --- | --- |
| a) Ca2+ , Cs+ , Br | b) Na+ , Ca2+ , Mg2+ | c) N3-, F –, Na+ | d) Be , Al3+ , Cl – |

1. The correct order of Ist ionization potential among the following elements Be , B , C , N , O is

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| --- | --- | --- | --- |
| a) B < Be < C < O < N | b) B < Be < C < N < O | c) Be < B < C < N < O | d) Be < B < C < O < N |

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

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

1. Which of the following sets of ions represents a collection of isoelectronic species?

|  |  |  |  |
| --- | --- | --- | --- |
| a) N3-, O2-, F –, S2- | b) Li+, Na+, Mg2+, Ca2+ | c) K+, Cl -, Ca2+, Sc3+ | d) Ba2+, Sr2+, K+, Ca2+ |

1. The increasing order of the first ionization enthalpy of the elements B, P, S and F (Lowest first) is

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| a) B < P < S < F | b) B < S < P < F | c) F < S < P < B | d) P < S < B < F |

1. The size of following species increases in the order

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

1. With which of the following electronic configuration an atom has the lowest ionization enthalpy ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 1s2 2s2 2p6 | b) 1s2 2s2 2p5 | c) 1s2 2s2 2p3 | d) 1s2 2s2 2p6 3s1 |

1. The atom of smallest atomic radius among the following is

|  |  |  |  |
| --- | --- | --- | --- |
| a) Na | b) K | c) Br | d) Li |

1. Correct order of ionization energy of C, N, O and F is.

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

1. Which pair of atomic numbers represents s-block elements ?

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| --- | --- | --- | --- |
| a) 7, 15 | b) 6, 12 | c) 9, 17 | d) 4, 12 |

1. Elements with atomic number 56 belongs to which block ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) s | b) p | c) d | d) f |

1. The correct order of decreasing ionic radii among the following isoelectronic species is

|  |  |  |  |
| --- | --- | --- | --- |
| a) K+ > Ca2+ > Cl – > S2- | b) Ca2+ > K+ > S2- > Cl – | c) Cl – > S2- > Ca2+ > K+ | d) S2- > Cl – > K+ > Ca2+ |

1. The correct sequence which shows decreasing order of the ionic radii of the element is

|  |  |
| --- | --- |
| a) O2- > F – > Na+ > Mg2+ > Al3+ | b) Al3+ > Mg2+ > Na+ > F – > O2- |
| c) Na+ > Mg2+ > Al3+ > O2- > F – | d) Na+ > F – > Mg2+ > O2- > Al3+ |

1. Among the following the third ionization energy is highest for

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| --- | --- | --- | --- |
| a) Magnesium | b) Boron | c) Beryllium | d) Aluminium |

1. Which element is expected to have lowest first ionization enthalpy ?

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| --- | --- | --- | --- |
| a) Sr | b) As | c) Xe | d) S |

1. Tick the correct order of second ionization enthalpy in the following :

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

1. The incorrect statement among the following is :

a) The first ionization potential of Al is less than the first ionization potential of Mg.

b) The second ionization potential of Mg is greater than the second ionization potential of Na.

c) The first ionization potential of Na is less than the first ionization potential of Mg.

d) The third ionization potential of Mg is greater than the third ionization potential of Al.

**Answers**

**Classification of Elements – 1 [CLASS = 11th ]**

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