

- All the elements in a group of the periodic table have the same
 - number of electrons
 - number of valence electrons
 - atomic mass
 - atomic number
- The first attempt to classify elements was made by
 - Pauling
 - Drago
 - Dalton
 - Dobernier
- Group number of an element in the periodic tables indicates
 - the stable oxidation state
 - the number of electrons in the valence shell of the atom
 - the periodicity
 - the chemical reactivity
- The element having electronic configuration $[\text{Kr}] 4d^{10} 4f^7 5s^2 5p^6 5d^1 6s^2$ belongs to
 - s-block
 - p-block
 - d-block
 - f-block
- The element with atomic number 59 belongs to
 - lanthanides
 - actinides
 - transition elements
 - s-block
- Chalcogens belong to
 - 18th group
 - 16th group
 - 17th group
 - all p-block elements
- Number of elements present in the fifth period of the periodic table is
 - 8
 - 15
 - 18
 - 32
- Second electron affinity is more for the elements
 - F
 - Cl
 - Br
 - I
- The size of I , I^+ and I^- follow the order
 - $\text{I}^+ > \text{I}^- > \text{I}$
 - $\text{I}^- > \text{I} > \text{I}^+$
 - $\text{I}^- > \text{I}^+ > \text{I}$
 - $\text{I} > \text{I}^- > \text{I}^+$
- Mosley proposed that the properties of elements are dependent upon
 - atomic number
 - atomic weight
 - positrons
 - deutrons
- Californium is a member of
 - alkali metals
 - alkaline earth metals
 - actinide series
 - lanthanide series
- Coinage metals belong to
 - s-block elements
 - p-block elements
 - zero group
 - none of these
- Trans uranic elements
 - are synthetic elements
 - include elements 104
 - have fixed valency
 - none of the above
- Out of the following elements which one has maximum atomic radius?
 - F
 - Be
 - O
 - Li
- Of the following the ion with the smallest ionic radius is
 - K^+
 - Ca^{++}
 - Sc^{+++}
 - Ti^{++++}
- Atomic radii of fluorine and neon in Angstrom units are respectively given by
 - 0.72, 1.60
 - 1.60, 1.60
 - 0.72, 0.72
 - none
- An attempt to classify elements by plotting the atomic weight of elements against their volumes was made by
 - Lothar Mayer
 - Mosley
 - Newmann
 - Bohr
- Which of the following has least ionisation potential?
 - Li
 - Cs
 - Cl
 - I
- Out of the following pairs, the one in which ionization energy for the first element is less than the second is
 - N, O
 - N, P
 - K, Ar
 - Ne, Ar
- The first ionization potential of F, Cl, Br and I decreases in the order
 - $\text{F} > \text{Cl} > \text{Br} > \text{I}$
 - $\text{I} > \text{Br} > \text{Cl} > \text{F}$
 - $\text{Br} > \text{Cl} > \text{F} > \text{I}$
 - $\text{Cl} > \text{Br} > \text{F} > \text{I}$
- Diagonal relationship exists between
 - Li and Mg
 - K and Mg
 - Na and Mg
 - Na and B
- In a period from Li to F, the ionisation potential
 - increases
 - decreases
 - remains constant
 - none of these
- Which of the following represents the most electropositive element?
 - $[\text{He}] 2s^1$
 - $[\text{He}] 2s^2$
 - $[\text{Xe}] 6s^1$
 - $[\text{Xe}] 6s^2$
- Transition elements lie in the periodic table in between
 - 3rd and 4th group
 - 2nd and 13th group
 - 1st and 2nd group
 - 1st and 3rd group
- Which of the following halides is not oxidised by MnO_2
 - F^-
 - Cl^-
 - Br^-
 - I^-
- The second electron affinity of oxygen is
 - 178 kJ mole^{-1}
 - 78 kJ mole^{-1}
 - 780 kJ mole^{-1}
 - 178 kJ mole^{-1}
- The most electronegative element of the following is
 - F
 - Na
 - O
 - S
- Which elements are chemically most similar?
 - Na, Al
 - Cu, S
 - Zr, Hf
 - Ti, Zr
- The name *Rare earths* is used for
 - lanthanides only
 - actinides only
 - both lanthanides and actinides
 - alkaline earth metals
- Electronegativity of elements in a period from group 1 to group 17 is
 - same
 - different
 - decreasing
 - nil
- Of the following pairs of elements the one containing elements which behave as metalloids is
 - Rb and Cs
 - Br and I
 - Zn and Al
 - Pt and I
- An element with atomic number 29 belongs to the category of
 - s-block elements
 - p-block elements
 - d-block elements
 - f-block elements
- Which one of the following is smallest in size?
 - N^{3-}
 - O^{2-}
 - F^-
 - Na^+
- The size of following species increases in the order
 - $\text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{Al}$
 - $\text{F}^- < \text{Al} < \text{Na}^+ > \text{Mg}^{2+}$
 - $\text{Al} < \text{Mg} < \text{F}^- < \text{Na}^+$
 - $\text{Na}^+ < \text{Al} < \text{F}^- < \text{Mg}^{2+}$

31. Which of the following pairs has both members from the same group of periodic table ? (a) Mg - Ba (b) Mg - Na (c) Mg - Cu (c) Mg - Cl	48. Which of the following sets of elements have the strongest tendency to form anions ? (a) N, O, F (b) P, S, Cl (c) As, Se, Br (d) Sb, Te, I
32. Aluminium is diagonally related to (a) Li (b) Be (c) C (d) B	49. Which is the weakest base among NaOH, Ca(OH) ₂ , KOH and Zn(OH) ₂ ? (a) NaOH (b) KOH (c) Ca(OH) ₂ (d) Zn(OH) ₂
33. Diagonal relationship is shown by (a) elements of first period (b) elements of second period (c) elements of third period (d) none of these	50. Paramagnetism is exhibited by molecules (a) not attracted in a magnetic field (b) containing only paired electrons (c) carrying a positive charge (d) carrying unpaired electrons
34. If the valency shell electrons configuration for an element is $ns^2 np^5$, this element will belong to the group of (a) alkali metals (b) inert metals (c) noble gases (d) halogens	51. Which of the following shows highest magnetic moment ? (a) N ³⁺ (b) Cr ³⁺ (c) Fe ³⁺ (d) Co ³⁺
35. Chloride of an element A gives neutral solution in water in Periodic table the element A, belongs to (a) first group (b) third group (c) fifth group (d) first transition series	52. Of cobalt and zinc salts, which is attracted in a magnetic field ? (a) cobalt salts (b) zinc salts (c) both (d) none
36. An element with atomic number 24, will be placed in which period of periodic table ? (a) 4 (b) 3 (c) 2 (d) 1	53. An element of atomic weight 40 has 2, 8, 8, 2 as the electronic configuration which one of the following statements regarding the element is not correct ? (a) It belongs to II group of the periodic table. (b) It has 20 neutrons. (c) The formula of its oxide is MO ₂ . (d) It belongs to 4th period of the periodic table.
37. The radius of first Bohr orbital is minimum in (a) H (b) D ⁺ (c) He ⁺ (d) Li ²⁺	54. The incorrect statement among the following is (a) The first ionisation potential of Al is less than the first ionisation potential of Mg. (b) The second ionisation potential of Mg is greater than the second ionisation potential of Na. (c) The first ionisation potential of Na is less than the third ionisation potential of Mg. (d) The third ionisation potential of Mg is greater than the third ionisation potential of Na.
38. Which one is the correct order of the size of the iodine species ? (a) I > I ⁺ > I ⁻ (b) I > I ⁻ > I ⁺ (c) I ⁺ > I ⁻ > I (d) I ⁻ > I > I ⁺	55. The statement that is not correct for the periodic classification of elements is (a) The properties of elements are the periodic functions of their atomic numbers. (b) Non-metallic elements are lesser in number than metallic elements. (c) The first ionisation energies along a period do not vary in a regular manner with increase in atomic number. (d) For transition elements the <i>d</i> -subshells are filled with electrons monoatomically with increase in atomic number.
39. Ionic radii of (a) Ti ⁴⁺ < Mn ⁷⁺ (b) ³⁵ Cl ⁻ < ³⁷ Cl ⁻ (c) K ⁺ > Cl ⁻ (d) P ³⁺ > P ⁵⁺	56. Which element has the greatest tendency to lose electrons ? (a) F (b) S (c) Fe (d) Be
40. The size of the following species increases in the order (a) Mg ²⁺ < Na ⁺ < F ⁻ < Al (b) F ⁻ < Al < Na ⁺ < Mg ²⁺ (c) Al < Mg < F ⁻ < Na ⁺ (d) Na ⁺ < Al < F ⁻ < Mg ²⁺	57. Al ³⁺ has smaller ionic radius than Mg ²⁺ because (a) Mg atom has lesser number of neutrons than Al (b) Al ³⁺ has a higher nuclear charge than Mg ²⁺ (c) their electronegativities are different (d) all has a lower ionisation potential than Mg atom
41. Which of the following elements, will have the lowest ionisation energy ? (a) Mg (b) Rb (c) Li (d) Ca	58. A sudden large jump between the values of second and third ionisation energies of an element would be associated with electronic configuration (a) 1s ² 2s ² 2p ⁶ 3s ¹ (b) 1s ² 2s ² 2p ⁶ 3s ² 3p ¹ (c) 1s ² 2s ² 2p ⁶ 3s ² 3p ² (d) 1s ² 2s ² 2p ⁶ 3s ²
42. The first ionisation potentials of Na, 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	
43. Which has the highest electronegativity ? (a) C (b) Mg (c) O (d) S	
44. The electronegativity of Be is same as that of (a) Al (b) Mg (c) Na (d) Li	
45. Which is the correct order of electronegativity ? (a) F > N < O > C (b) F > N > O > C (c) F < N < O < C (d) F > N > O < C	
46. The elements X, Y, Z and T have the indicated electronic configurations starting with the innermost shell, which is the most metallic element ? (a) X = 2, 8, 4 (b) Y = 2, 8, 8 (c) Z = 2, 8, 8, 1 (d) T = 2, 8, 8, 7	
47. The process requiring the absorption of energy is (a) F → F ⁻ (b) Cl → Cl ⁻ (c) O → O ²⁻ (d) H → H ⁻	

59. In the isoelectronic species the ionic radii (\AA) of N^{3-} , O^{2-} and F^- are respectively given by
(a) 1.36, 1.40, 1.71 (b) 1.36, 1.71, 1.40
(c) 1.71, 1.40, 1.36 (d) 1.71, 1.36, 1.40
60. If ionisation potential of Na is 5.48 eV, then ionisation potential of K will be
(a) same as that of Na (b) 5.68 eV
(c) 4.38 eV (d) 10.88 eV