

1. Which of the following sets of elements would have nearly same atomic radii ?
 (a) Na, K, Rb, Cs (b) Na, Mg, Al, Si
 (c) Fe, Co, Ni, Cu (d) F, Cl, Br, I
2. An element with atomic number 20 is placed in which period of the periodic table ?
 (a) 4 (b) 3
 (c) 2 (d) 1
3. Which of the following is a bridge element?
 (a) Be (b) Cl
 (c) K (d) P
4. Which of the following sets of elements has the strongest tendency to form negative ions in gaseous state ?
 (a) Na, Mg, Al (b) Ca, V, Cr
 (c) N, O, F (d) Ga, In, Tl
5. Among the elements A, B, C and D having atomic number 7, 8, 9 and 12 respectively, the element with smallest size and highest I.E. is
 (a) A (b) B
 (c) C (d) D
6. Which of the following sets of elements does not belong to same group ?
 (a) C, Si, Ga, Sn
 (b) Cl, Br, I, At
 (c) N, P, As, Sb
 (d) He, Ne, Ar, Kr
7. Which pair of atomic numbers represents s-block elements ?
 (a) 7, 18 (b) 6, 12
 (c) 9, 17 (d) 3, 12
8. Which has the highest second ionization potential ?
 (a) Nitrogen (b) Carbon
 (c) Oxygen (d) Fluorine
9. Which one of the following ions has the smallest radius ?
 (a) Cl^- (b) S^{2-}
 (c) K^+ (d) Ca^{2+}
10. Which of the following pairs has both members from the same period of the periodic table ?
 (a) Na – Ca (b) Na – Cl
 (c) Ca – Cl (d) Cl – Br
11. The electronic configuration of the element is $1s^2 2s^2 2p^6 3s^2 3p^3$. What is the atomic number of the element which is just below the above element in the periodic table ?
 (a) 33 (b) 34
 (c) 31 (d) 49
12. Which of the following species has the highest ionization
 (a) Li^+ (b) Mg^+
 (c) Al^+ (d) Ne
13. The first ionization energies in eV/atom of magnesium and aluminium are respectively given by
 (a) 7.64, 5.98 (b) 7.64, 7.64
 (c) 5.98, 7.64 (d) 5.98, 5.98
14. In which of the following processes, the least energy is released ?
 (a) $\text{N(g)} + \text{e}^- \rightarrow \text{N}^-(\text{g})$ (b) $\text{O(g)} + \text{e}^- \rightarrow \text{O}^-(\text{g})$
 (c) $\text{F(g)} + \text{e}^- \rightarrow \text{F}^-(\text{g})$ (d) $\text{S(g)} + \text{e}^- \rightarrow \text{S}^-(\text{g})$
15. Which of the following configuration is associated with biggest jump between second and third I.E. ?
 (a) $1s^2, 2s^2, 2p^2$ (b) $1s^2, 2s^2, 2p^6, 3s^1$
 (c) $1s^2, 2s^2, 2p^6, 3s^2$ (d) $1s^2, 2s^2, 2p^1$
16. With which one of the following configuration, the lowest value of first I.E. is associated ?
 (a) $1s^2, 2s^2, 2p^6, 3s^1$
 (b) $1s^2, 2s^2, 2p^5$
 (c) $1s^2, 2s^2, 2p^6$
 (d) $1s^2, 2s^2, 2p^6, 3s^2, 3p^2$
17. Which of the following elements is the strongest reducing agent ?
 (a) Li (b) Be
 (c) B (d) C

18. Which of the following has the highest melting point?
 (a) NaCl (b) LiCl
 (c) KCl (d) RbCl
19. Among the elements of second period, the element with highest boiling point belongs to group
 (a) 1 (b) 14
 (c) 17 (d) 18
20. Ionization energy of F^- is -320 kJ mol^{-1} . The electron affinity of fluorine would be
 (a) -320 kJ mol^{-1}
 (b) -160 kJ mol^{-1}
 (c) 320 kJ mol^{-1}
 (d) 160 kJ mol^{-1}
21. Electronegativity is given by
 (a) Average of first and second ionization energies
 (b) Average of first and second electron affinities
 (c) Average of ionization energy and electron affinity
 (d) None of these
22. 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) $Na^+ < Al < F^- < Mg^{2+}$
23. The electronic configuration of the element which is just above the element with atomic number 43 in the same-periodic group is
 (a) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^2$
 (b) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^5$
 (c) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6 4s^1$
 (d) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^1 4p^6$
24. Which electronic configuration of an element has abnormally high difference between second and third ionization energy ?
 (a) $1s^2, 2s^2, 2p^6, 3s^1$
 (b) $1s^2, 2s^2, 2p^6, 3s^2 3p^1$
 (c) $1s^2, 2s^2, 2p^4, 3s^2 3p^2$
 (d) $1s^2, 2s^2, 2p^6, 3s^2$
25. Which of the following electronic configuration is of transition elements ?
 (a) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2$
 (b) $1s^2 2p^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^1$
 (c) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6$
 (d) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^2 4s^2$
26. Ionic radii of
 (a) $Ti^{4+} < Mn^{7+}$ (b) $^{35}Cl^- < ^{37}Cl$
 (c) $K^+ > Cl^-$ (d) $P^{3+} > P^{5+}$
27. Which of the following configuration is associated with the biggest jump between first and second ionization energies ?
 (a) $1s^2, 2s^1$
 (b) $1s^2, 2s^2, 2p^6, 3s^1$
 (c) $1s^2, 2s^2$
 (d) $1s^2, 2s^2, 2p^6, 3s^2, 3p^6, 4s^1$
28. Which of the following elements has its outermost energy level complete ?
 (a) Ne
 (b) Ar
 (c) Kr
 (d) All have their outermost shell complete
29. Which of the following isoelectronic species would require least energy for the removal of electron ?
 (a) Ca^{2+} (b) Cl^-
 (c) K^+ (d) Ar
30. Which of the following statements is correct ?
 (a) All the elements having outermost shell configuration ' ns^2 ' belong to group IIA (2)
 (b) All elements having outermost shell configuration $ns^2 np^2$ belong to group IVA (14)
 (c) An element having valence shell configuration $6s^2, 6p^5$ belongs to fifth period
 (d) All the elements belonging to group IIIA are Metals
31. The correct order of electron affinities is
 (a) $Cl > Si > Na > Ar$
 (b) $Si > Cl > Na > Ar$
 (c) $Cl > Na > Si > Ar$
 (d) $Cl > Si > Ar > Na$

32. The correct sequence of elements in the decreasing order of first ionization energy is
 (a) $\text{Na} > \text{Mg} > \text{Al}$ (b) $\text{Mg} > \text{Na} > \text{Al}$
 (c) $\text{Al} > \text{Mg} > \text{Na}$ (d) $\text{Mg} > \text{Al} > \text{Na}$
33. The radii of F , F^- , O and O^{2-} are in the order
 (a) $\text{O}^{2-} > \text{F}^- > \text{O} > \text{F}$ (b) $\text{O}^{2-} > \text{F}^- > \text{F} > \text{O}$
 (c) $\text{F}^- > \text{O}^{2-} > \text{F} > \text{O}$ (d) $\text{O}^{2-} > \text{O} > \text{F}^- > \text{F}$
34. The correct order of ionic radii for the following ions is
 (a) $\text{N}^{3-} < \text{F}^- < \text{O}^{2-} < \text{Na}^+$
 (b) $\text{N}^+ > \text{F}^- > \text{O}^{2-} > \text{Na}^{3-}$
 (c) $\text{N}^{3-} > \text{O}^{2-} > \text{F}^- > \text{Na}^+$
 (d) The correct order cannot be predicted
35. The second ionization energies of Cl , Ar , K and Ca are in the order
 (a) $\text{K} > \text{Cl} > \text{Ar} > \text{Ca}$ (b) $\text{Ar} > \text{Cl} > \text{K} > \text{Ca}$
 (c) $\text{K} > \text{Ar} > \text{Al} > \text{Ca}$ (d) $\text{Ar} > \text{Cl} > \text{Ca} > \text{K}$
36. The correct order of second ionization potential of carbon, nitrogen, oxygen and fluorine is
 (a) $\text{C} > \text{N} > \text{O} > \text{F}$ (b) $\text{O} > \text{N} > \text{F} > \text{C}$
 (c) $\text{O} > \text{F} > \text{N} > \text{C}$ (d) $\text{F} > \text{O} > \text{N} > \text{C}$
37. Which is the correct order of electronegativities ?
 (a) $\text{F} > \text{O} > \text{N} > \text{C}$ (b) $\text{F} > \text{N} > \text{O} > \text{C}$
 (c) $\text{F} < \text{N} < \text{O} < \text{C}$ (d) $\text{F} > \text{N} > \text{O} < \text{C}$
38. Arrange S , O and Se in ascending order of electron affinity
 (a) $\text{Se} < \text{S} < \text{O}$ (b) $\text{Se} < \text{O} < \text{S}$
 (c) $\text{S} < \text{O} < \text{Se}$ (d) $\text{S} < \text{Se}, \text{O}$
39. The electronegativity of the following elements increases in the order
 (a) $\text{F} > \text{Cl} > \text{O} > \text{S}$ (b) $\text{S} > \text{Cl} > \text{O} > \text{F}$
 (c) $\text{F} > \text{O} > \text{Cl} > \text{S}$ (d) $\text{Cl} > \text{F} > \text{O} > \text{S}$
40. Which of the following process requires maximum amount of energy ?
 (a) $\text{Na(g)} \rightarrow \text{Na}^+(\text{g}) + \text{e}^-$
 (b) $\text{Al(g)} \rightarrow \text{Al}^+(\text{g}) + \text{e}^-$
 (c) $\text{Na}^+(\text{g}) \rightarrow \text{Na}^{2+}(\text{g}) + \text{e}^-$
 (d) $\text{Al}^+(\text{g}) \rightarrow \text{Al}^{2+}(\text{g}) + \text{e}^-$

ANSWERS KEY

1	C	11	A	21	C	31	A
2	A	12	A	22	A	32	D
3	A	13	A	23	A	33	A
4	C	14	A	24	D	34	C
5	C	15	C	25	D	35	C
6	A	16	A	26	D	36	C
7	D	17	A	27	A	37	A
8	C	18	A	28	A	38	B
9	D	19	B	29	B	39	C
10	B	20	C	30	B	40	C