# CHEMISTRY

# RESONANCE ENGLISH

# PERIODIC TABLE & PERIODICITY

## Physical Chemistry Stoichiometry

**1.** An element with atomic number 107 has recently been discovered. Its block, group number, period and outshell electronic configuration respectively are :

A. s– block, group 2, period 6,6s2

B. p– block, group 13,period, 5,5s2,5p4

C. d– block, group 7, period 7,7s2

D. f– block, group 3, period 6,6s2

**Answer: 4**

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**2.** In which one of the following pairs the radius of the second species is greater than that of first ?

A. $Na, Mg$

B. $O2-, N3-$

C. $Li+, Be2+$

D. $Ba2+, Sr2+$

**Answer: 1**

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**3.** The chemical formula of Aluminium plumbate is —

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**4.** The chemical name of $K_2MnO_4$ is —

A. Potassium permanganate

B. Potassium manganate

C. Potash alum

D. Phosphoric acid

**Answer: 3**

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**5.** The chemical name of $NaH_2PO_4$ is $-$

A. Sodium phosphite

B. Sodium dihydrogen phosphate

C. Phosphoric acid

D. Phosphorous acid

**Answer: A**

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**6.** The five successive ionisation energies energies of an element $'X'$ are $800, 1427, 2658, 25024$ and $32824\text{KJ mole}^{-1}$ respectively . The valency of $'X'$ is :

A. 3

B. 4

C. 2

D. 1

**Answer: 3**

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**7.** For an element $'A'$, the first ionisation energy will be numerically equal to :

A. EA of A+

B. EA of A2+

C. IE of A2+

D. None of these

**Answer: A**

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**8.** The first ionisation potential of $Al$ is smaller than that of $Mg$ because:

A. $20ml$, $10ml$

B. $100ml$, $60ml$

C. $50ml20ml$

D. $50ml$, $35ml$

**Answer: 1**

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**9.** In which of the following pairs, the first member has higher first ionization energy ?

A. $N, O$

B. $B, Be$

C. $Al, Ga$

D. $Cl, F$

**Answer: 1**

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**10.** Which one of the following atoms will have the smallest size ?

A. $11.5$

B. 11.0

C. 23

D. 12.0

**Answer: A**

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**11.** The chemical formula of Permanganic acid is —

A. HMnO4

B. HMnO

C. HClO4

D. None

**Answer: 3**

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**12.** Which of the following is the correct order of ionisation enthalpy ?

(1)Be+ > Be

(2) O > N

(3) C > Be

(4) F > Ne

A. 2,3

B. 3,4

C. 1,3

D. 1,2

**Answer: 1**

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**13.** The statement that is not correct for periodic classification of elements is

A. $1:16:2$

B. $1:16:1$

C. $16:1:1$

D. $16:2:1$

**Answer: 1**

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**14.** In the modern periodic table, the block indicates the value of . . . . . for the last subshell that received electrons in

building up the electronic configuration. Fill in the blank with appropriate option

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**15.** Element with electronic configuration as $[Ar]^{18}3d^5 4s^2$ is placed in :

A. $4.18M$

B. $8.14M$

C. $18.4M$

D. $18M$

**Answer: 3**

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**16.** Which set does not shows correct matching according to Modern periodic table:

A. $Sc^{3+} - [Ne]3s^2 3p^6$ zero group

B. $Fe^{2+} - [Ar]3d^6$ $8^{th}$ group

C. $Cr - [Ar]3d^5 4s^1$ $6^{th}$ group

D. All of the above

**Answer: D**

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**17.** Atomic radii of fluorine and neon in Angstrom units are respectively given by

A. $1g$ of $O_2$,$2g$ of $SO_2$

B. $1g$ of $CO_2$ , $1g$ of $N_2O$

C. $112ml$ of $O_2$ at $STP$, $224ml$ of $He$ at $0.5atm$ and $273K$

D. All of these

**Answer: 4**

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**18.** Which of the following element has the highest ionisation enregy ?

A. $3 \times 10^{-23}mL$

B. $6 \times 10^{-22}mL$

C. $3 \times 10^{-21}mL$

D. $9 \times 10^{-23}mL$

**Answer: 1**

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**19.** The set representing the correct order of the first ionisation potential is

A. $\frac{4}{5}$

B. $\frac{5}{4}$

C. $\frac{3}{4}$

D. $\frac{5}{3}$

**Answer: 1**

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**20.** Which of the following relation is correct with respect first (I) and second (II) ionisation potential of sodium and magnesium?

A. a) I N a > I M g

B. b) I M g = I I N a

C. c) I I M g > I I N a

D. d) I I N a > I I M g

**Answer: 2**

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**21.** First, second & third ionization energies are 737, 1045 & 7733 $KJ/mol$ respectively. The element can be :

A. Na

B. B

C. Al

D. Mg

**Answer: A**

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**22.** For which of the following process, the value of electron gain enthalpy is positive ?

A. $F(g) + e \rightarrow F^-(g)$

B. $Cl(g) + e^- \rightarrow Cl(g)$

C. $Be(g) + e^- \rightarrow Be^-(g)$

D. $B(g) + e \rightarrow B^-(g)$

**Answer: V**

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**23.** Which is the correct property mentioned –

A. $Fe^{+} < Fe^{2+} < Fe^{3+}$ – size

B. $Fe^{+} < Fe^{2+} < Fe^{3+}$ – ionisation energy

C. $B < Be < C$ – ionisation energy

D. $N < O < F$ – ionisation energy

**Answer: A**

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**24.** If ionisation energy of an atom is 10 eV & EA is $6.8eV$ electronegativity of the species on pauling scale

A. $98.9\,\%$

B. $60.9\,\%$

C. $32.9\,\%$

D. $1.4\,\%$

**Answer: 1**

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**25.** Fluorine has the highest electronegativity among the $ns^2np^5$ group on the Pauling scale, but the elctron affinity of fluorine is less than that of chlorine because :

A. $C_2H_8O_2$

B. $C_4H_8O_2$

C. $C_4H_{10}O$

D. $C_4H_{12}O_2$

**Answer: 4**

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**26.** The increasing order of electron affinity values of $O$, $S$ and $Se$ is

A. $19.19$

B. $6.81$

C. $11.11$

D. None of these

**Answer: B**

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**27.** Electron addition will be easier in : —

A. conservation of mass

B. multiple proportions

C. constant proportions

D. reciprocal proportions

**Answer: 1**

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**28.** Which out of the $N$ or $O$ has higher electron gain enthalpy?

A. $a = b$

B. $2a = b$

C. $a = 2b$

D. None of these

**Answer: 2**

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**29.** Following the Mulliken scale, what parameters are required to evaluate electronegativity ?

A. Only electronegativity

B. Only electron affinity

C. Electron affinity and ionization energy

D. Ionic potential and electronegativity

**Answer: 4**

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**30.** Which of the following oxides is neutral in nature?

A. $3.4\,\%\,(wt/wt)$

B. $3.4\,\%\,(vol/vol)$

C. $3.4\,\%\,(wt/vol)$

D. None of these

**Answer: 3**

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**31.** In which of the following compound, oxidation state of $'S'$ is other than the $+6$

A. peroxomonosulphuric acid (Caro's acid)

B. peroxodisulphuric acid ( Marshall's acid)

C. pyrosulphuric acid (oleum)

D. sodium thiosulphate (hypo)

**Answer: 4**

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**32.** The correct order of radii is

A. $SO_2 \rightarrow H_2SO_3$

B. $NH_3 + H^+ \rightarrow NH_4^+$

C. $N_2O_6 \rightarrow 2HNO_3$

D. $A$ and $C$ have same valency factor

**Answer: 4**

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**33.** In which of the following compound Mn shoes minimum radius ?

A. MnO2

B. KMnO4

C. MnO

D. None of these

**Answer: 3**

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**34.** The ionisation energy of $A(g)$ is similar to in terms of magnitude –

A. Electron affinity of A+(g)

B. Electron affinity of A(g)

C. Ionisation energy of A+(g)

D. Ionisation energy of A2+(g)

**Answer: 2**

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**35.** Which of the following statements is INCORRECT ?

A. 4

B. 40

C. 100

D. 500

**Answer: 4**

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**36.** Electron affinity of an atom is defined as

A. $II < IV < III < I$

B. $II < I < IV < III$

C. $IV < II < III < I$

D. $I < II < III < IV$

**Answer: A**

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**37.** If $x, y$ and z are electronegativity, ionisation potential and electron $-$ affinity respectively. Then the electron affinity $(z)$ in the terms of electronegativity $(x)$ and ionisation potential $(y)$ will be :

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**38.** Atomic number of an element is 80, state the period of periodic table to which it belongs

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**39.** Atomic number of an element is 50, state the period of periodic table to which it belongs

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**40.** Which of the following statement is correct ?

A. Ionisation energiest of elements decrease along the period.

B. Ionisation energies of the IIA group elements are less than that of the corresponding III A group elements.

C. Ionisation energies of group 15 elements are less than that of the corresponding group 16 elements.

D. Ionisation energy of Ga is greater than Al.

**Answer: 3**

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**41.** The dominating factor responsible for the decreasing ionisation energies of the elements on moving down the group is :

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**42.** Which of the following order is not correct ?

A. $IE(I)$ of $Be > IE(I)$ of $B$ but $IE(II)$ of $Be < IE(II)$ of $B$

B. $IE(I)$ of $Be < IE(I)$ of $B$ but $IE(II)$ of $Be < IE(II)$ of $B$

C. $IE(II)$ of $O > IE(II)$ of $N$

D. $IE(I)$ of $Mg > IE(I)$ of $Al$

**Answer: B**

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**43.** The correct of the metallic character is :

A. $Na > Mg > Al > Si$

B. $Mg > Na > Al > Si$

C. $Al > Mg > Na > Si$

D. $Si > Al > Na > Mg$

**Answer: 2**

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**44.** The correct order of the non $-$ metallic character is :

A. $B > C > N > F$

B. $C > B > N > F$

C. $F > N > C > B$

D. $F > N > B > C$

**Answer: 3**

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**45.** Atomic number of an element is 82, state the period of periodic table to which it belongs

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**48.** Whichone of the following is not the representative element ?

A. Fe

B. K

C. Ba

D. N

**Answer: 1**

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**49.** An element of atomic mass $40$ has $2, 8, 8, 2$, as the electronic configuration. One of the following statement regarding this elements is not correct?

A. it forms an basic oxide

B. It belongs to II A group

C. It belongs to IV period

D. It forms an acidic oxide

**Answer: 1**

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**50.** Atomic number of an elements is 51, state the period of periodic table to which it belongs.

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**51.** Decomposition product (s) of the following alkali metal nitrate is/are:

$LiNO_3$

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Inorganic Chemistry Periodic Table Periodicity

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B. p– block, group 13,period, 5,5s2,5p4

C. d– block, group 7, period 7,7s2

D. f– block, group 3, period 6,6s2

**Answer: 3**

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A. $Na, Mg$

B. $O2-, N3-$

C. $Li+, Be2+$

D. $Ba2+, Sr2+$

**Answer: D**

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**4.** The chemical name of $K_2MnO_4$ is $-$

A. Potassium permanganate

B. Potassium manganate

C. Potash alum

D. Phosphoric acid

**Answer: 2**

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**5.** The chemical name of $NaH_2PO_4$ is $-$

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B. Sodium dihydrogen phosphate

C. Phosphoric acid

D. Phosphorous acid

**Answer: 4**

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**6.** The five successive ionisation energies energies of an element $'X'$ are $800, 1427, 2658, 25024$ and $32824 \text{KJ mole}^{-1}$ respectively . The valency of $'X'$ is :

A. 3

B. 4

C. 2

D. 1

**Answer: 3**

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**7.** For an element $'A'$, the first ionisation energy will be numerically equal to :

A. EA of A+

B. EA of A2+

C. IE of A2+

D. None of these

**Answer: 1**

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**8.** The first ionisation potential of $Al$ is smaller than that of $Mg$ because:

A. The atomic number of Al is smaller than that of Mg.

B. the atomic size of Al is less than that of Mg.

C. Penetration of $s-$ subshell electrons in case of Mg is greater than that of $p-$ subshell in Al

D. Mg has incompletely filled $s-$ orbital.

**Answer: 3**

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**9.** In which of the following pairs, the first member has higher first ionization energy ?

A. $N, O$

B. $B, Be$

C. $Al, Ga$

D. $Cl, F$

**Answer: 1**

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**10.** Which one of the following atoms will have the smallest size ?

A. $Li^+$

B. $Mg^{2+}$

C. $Al^{3+}$

D. $K^+$

**Answer: 3**

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**11.** The chemical formula of Permanganic acid is —

A. HMnO4

B. HMnO

C. HClO4

D. $H_2MnO_3$

**Answer: 1**

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**12.** Which of the following is the correct order of ionisation enthalpy ?

(1)Be+ > Be

(2) O > N

(3) C > Be

(4) F > Ne

A. 2,3

B. 3,4

C. 1,3

D. 1,2

**Answer: 1**

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**13.** The statement that is not correct for 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 of elements along a period do not vary in a regular manner with increase in atomic number.

D. for transition elements the $d-$ subshells are filled with electrons monotonically with increase in atomic number.

**Answer: 4**

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**14.** In the modern periodic table, the block indicates the value of . . . . . for the last subshell that received electrons in

building up the electronic configuration. Fill in the blank with appropriate option

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**15.** Element with electronic configuration as $[Ar]^{18}3d^54s^2$ is placed in :

A. $1^{st}$ group , $s-$ block

B. $2^{nd}$ group, $s-$ block

C. $5^{th}$ group, $d-$ block

D. $7^{th}$ group, $d-$ block

**Answer: 4**

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**16.** Which set does not shows correct matching according to Modern periodic table:

A. $Sc^{3+} - [Ne]3s^2 3p^6$ zero group

B. $Fe^{2+} - [Ar]3d^6$ $8^{th}$ group

C. $Cr - [Ar]3d^5 4s^1$ $6^{th}$ group

D. All of the above

**Answer: 1**

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**17.** Atomic radii of fluorine and neon in Angstrom units are respectively given by

A. $0.72, 1.60$

B. $1.60, 1.60$

C. $0.72, 0.72$

D. $1.60, 0.72$

**Answer: 1**

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**18.** Which of the following element has the highest ionisation enregy ?

A. V

B. Ti

C. Sc

D. Mn

**Answer: 4**

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**19.** The set representing the correct order of the first ionisation potential is

A. $K > Na > Li$

B. $Be > Mg > Ca$

C. $B > C > N$

D. $Ge > Si > C$

**Answer: 2**

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**20.** Which of the following relation is correct with respect first (I) and second (II) ionisation potential of sodium and magnesium?

A. a) I N a > I M g

B. b) I M g = I I N a

C. c) I I M g > I I N a

D. d) I I N a > I I M g

**Answer: 4**

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**21.** First, second & third ionization energies are 737, 1045 & 7733 $KJ/mol$ respectively. The element can be :

A. Na

B. B

C. Al

D. Mg

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**22.** For which of the following process, the value of electron gain enthalpy is positive ?

A. $F(g) + e \rightarrow F^-(g)$

B. $Cl(g) + e^- \rightarrow Cl(g)$

C. $Be(g) + e^- \rightarrow Be^-(g)$

D. $B(g) + e \rightarrow B^-(g)$

**Answer: V**

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**23.** Which is the correct property mentioned $-$

A. $Fe^{+} < Fe^{2+} < Fe^{3+} -$ size

B. $Fe^{+} < Fe^{2+} < Fe^{3+} -$ ionisation energy

C. $B < Be < C -$ ionisation energy

D. $N < O < F -$ ionisation energy

**Answer: 2**

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**24.** If ionisation energy of an atom is 10 eV & EA is $6.8eV$ electronegativity of the species on pauling scale

A. 4

B. 3

C. 2

D. 1

**Answer: 2**

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**25.** Fluorine has the highest electronegativity among the $ns^2np^5$ group on the Pauling scale, but the elctron affinity of fluorine is less than that of chlorine because :

A. The atomic number of fluorine is less than that of chlorine

B. fluorine being the first member of the family behaves in an unusual manner.

C. chlorine can accommodate an electron better than fluorine by utilising its vacant $3d-$ orbital

D. small size, high electron density and an increased electron repulsion makes addition of an electron to fluorine less favourable than that in the case of chlorine in isolated stage.

**Answer: 4**

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**26.** The increasing order of electron affinity values of $O$, $S$ and $Se$ is

A. $O > S > Se$

B. $S > Se > O$

C. $Se > O > S$

D. $S > O > Se$

**Answer: 2**

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**27.** Electron addition will be easier in : $-$

A. O

B. $O^+$

C. $O^{2+}$

D. $O^{2-}$

**Answer: 3**

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**28.** Which out of the $N$ or $O$ has higher electron gain enthalpy?

A. $Cl$, $F$

B. $O$, $S$

C. $O$, $F$

D. $S$, $Cl$

**Answer: A**

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B. Only electron affinity

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**30.** Which of the following oxides is neutral in nature?

A. $CO$

B. $SnO_2$

C. $ZnO$

D. $SiO_2$

**Answer: 1**

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**31.** In which of the following compound, oxidation state of $'S'$ is other than the $+6$

A. $F > N > C > Si > Ga$ – non-metallic charater

B. $F > Cl > O > N$ – oxidising property

C. $S > Se > Te > O$ – electron affinity value

D. All of these

**Answer: 4**

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**32.** The correct order of radii is

A. $N < Be < B$

B. $F^- < O^{2-} < N^{3-}$

C. $Na < Li < K$

D. $Fe^+ < Fe^{2+} < Fe^{2+}$

**Answer: 2**

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**33.** In which of the following compound Mn shoes minimum radius ?

A. MnO2

B. KMnO4

C. MnO

D. None of these

**Answer: 2**

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**34.** The ionisation energy of $A(g)$ is similar to in terms of magnitude $-$

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B. Electron affinity of A(g)

C. Ionisation energy of A+(g)

D. Ionisation energy of A2+(g)

**Answer: 1**

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**35.** Which of the following statements is INCORRECT ?

A. Generally the radius trend and the ionization energy trend across a period are opposites.

B. metallic and covalent radii of potassium are $2.3A$ and $2.03A$ respectively.

C. Amongst $Li^-$, $Be^-$ and $C^-$, $Li^-$ is least stable ion.

D. Atomic and ionic radii of Niobium and Tantalum are almost same

**Answer: 3**

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**36.** Electron affinity of an atom is defined as

A. Energy absorbed when an electron is added to an isolated atom in the gaseous state

B. Energy released when an electron is added to an isolated atom in the gasesou state

C. Energy required to take out an electron from an isolated gaseous atom

D. Power of an atom to attract an electron to itself.

**Answer: 2**

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C. $IE(II)$ of $O > IE(II)$ of $N$

D. $IE(I)$ of $Mg > IE(I)$ of $Al$

**Answer: 2**

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B. $Mg > Na > Al > Si$

C. $Al > Mg > Na > Si$

D. $Si > Al > Na > Mg$

**Answer: 1**

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**50.** Atomic number of an elements is 51, state the period of periodic table to which it belongs.

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**51.** Decomposition product (s) of the following alkali metal nitrate is/are:

$LiNO_3$

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**52.** Find the atomic number of element belonging to $4th$ period and $17th$ group in Modern periodic table :

A. 17

B. 25

C. 59

D. 35

**Answer: 4**

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**53.** Correct order of the property indicated below –

A. $Na > Al > Mg > Si \qquad IE_1$

B. $F > O > Cl > S \qquad EN$

C. $Cl > S > O > F \quad \Delta Heg_1$

D. $Cl > O > F > S \quad EA_1$

**Answer: 3**

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**54.** Consider the following points :

$(a) Cs$ is the strongest reducing agent is $IA$ group element

$(B) \quad Be(OH)_2$ is amphoteric

$(c)$ The density of potassium is less than sodium

$(d)$ In alkali metals $Li$, $Na$, $K$ and $Rb$, lithium has the minimum value of $M.P.$

Correct statements are :

A. $(a)\&(g)$ are correct

B. $(a)$, $(b)\&(c)$ are correct

C. $(b)\&(c)$ are correct

D. $(b)(c)\&(d)$ are correct

**Answer: D**

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**55.** Atomic number of an element of 43. The correct set of it's period number , block and group number is :

A.

| | Period no. | Block | Group no. |
|---|---|---|---|
| (1) | 5 | $d$ | 5 |

B.

| | Period no. | Block | Group no. |
|---|---|---|---|
| (2) | 4 | $d$ | 7 |

C.

| | Period no. | Block | Group no. |
|---|---|---|---|
| (3) | 5 | $d$ | 7 |

D.

| | Period no. | Block | Group no. |
|---|---|---|---|
| (4) | 5 | $s$ | 7 |

**Answer: 3**

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**56.** The electronic configuration of four elements are given below. Arrange these elements in the correct order of the magnitude of their electron affinity.

$(i) 2s^2 2p^3 \quad (ii) 3s^2 3p^5 \quad (iii) 2s^2 2p^1 \quad (iv) 3s^2 3p^4$

Select the correct answer using the codes given below :

A. $(ii) < (i) < (iv) < (iii)$

B. $(i) < (iii) < (iv) < (ii)$

C. $(iii) < (iv) < (ii) < (i)$

D. $(iii) < (iv) < (i) < (ii)$

**Answer: 2**

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**57.** What is the correct order of $2^{nd}$ ionisation energy ?

A. $C < O < N < F$

B. $C < N < O < I$

C. $C < F < N < O$

D. $C < N < F < O$

**Answer: 4**

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**58.** The electron affinity of a hypothetical element $'A'$ is $3eV$ per atom. How much energy in kcal is released when $10g$ of $'A'$ is completely converted of $A^-$ ion in a gaseous state ?

$\left(1eV = 23 \ \text{kcal mol}^{-1}, \text{Molar mass of } A = 30g\right)$

A. $23kcal$

B. $46kcal$

C. $50kcal$

D. $52kcal$

**Answer: 1**

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**59.** Decomposition product(s) of the following alkaline metal nitrate is/are:

$Mg(NO_3)_2$

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**60.** Match list I with List II and select the correct answer using the code given below the lists :

| List I | List II |
|---|---|
| (a) $SO_2, NO_3^-, CO_3^{2-}$ | (p) Semi-metals |
| (b) $B, Si, Ge, As, Sb$ | (q) Isoelectronic species |
| (c) $He, Ne, Ar, Kr, Xe$ | (r) Van der wall's radii |
| (d) $M(g) + \text{energy} \rightarrow M^+(g) + e^-$ | (s) Ionisation energy |

Code :

A.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $q$ | $p$ | $r$ | $s$ |

B.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $p$ | $q$ | $r$ | $s$ |

C.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $q$ | $p$ | $s$ | $r$ |

D.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $r$ | $p$ | $q$ | $r$ |

**Answer: 1**

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**61.** Match List I ( atomic number of the element ) with List II ( position in the periodic table ) and select the correct answer using the codes given below the lists –

| | $List\ I$ | | $List\ II$ |
|---|---|---|---|
| $(a)$ | 52 | $(p)$ | $s-block$ |
| $(b)$ | 56 | $(q)$ | $p-block$ |
| $(c)$ | 57 | $(r)$ | $d-block$ |
| $(d)$ | 60 | $(s)$ | $f-block$ |

A.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $q$ | $p$ | $r$ | $s$ |

B.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $q$ | $p$ | $s$ | $r$ |

C.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $p$ | $q$ | $r$ | $s$ |

D.

| (a) | (b) | (c) | (d) |
|---|---|---|---|
| $p$ | $b$ | $s$ | $r$ |

**Answer: 1**

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## Organic Chemistry Basic Concepts

**1.** An element with atomic number 107 has recently been discovered. Its block, group number, period and outshell electronic configuration respectively are :

A. s– block, group 2, period 6,6s2

B. p– block, group 13,period, 5,5s2,5p4

C. d– block, group 7, period 7,7s2

D. f– block, group 3, period 6,6s2

**Answer: A**

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**2.** In which one of the following pairs the radius of the second species is greater than that of first ?

A. $Na, Mg$

B. $O2-, N3-$

C. $Li+, Be2+$

D. $Ba2+, Sr2+$

**Answer: 4**

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**3.** The chemical formula of Aluminium plumbate is $-$

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**4.** The chemical name of $K_2MnO_4$ is –

A. Potassium permanganate

B. Potassium manganate

C. Potash alum

D. Phosphoric acid

**Answer: 4**

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**5.** The chemical name of $NaH_2PO_4$ is –

A. Sodium phosphite

B. Sodium dihydrogen phosphate

C. Phosphoric acid

D. Phosphorous acid

**Answer: 3**

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**6.** The five successive ionisation energies energies of an element $'X'$ are $800, 1427, 2658, 25024$ and $32824\text{KJ mole}^{-1}$ respectively . The valency of $'X'$ is :

A. 3

B. 4

C. 2

D. 1

**Answer: 4**

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**7.** For an element $'A'$, the first ionisation energy will be numerically equal to :

A. EA of A+

B. EA of A2+

C. IE of A2+

D. None of these

**Answer: 2**

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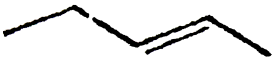
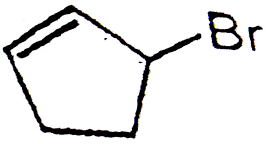
**8.** The first ionisation potential of $Al$ is smaller than that of $Mg$ because:

A. 

B. 


C. 


D. $ClCH = N - CH_2 - CH_3$

**Answer: 3**

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**9.** In which of the following pairs, the first member has higher first ionization energy ?

A. $N, O$

B. $B, Be$

C. $Al, Ga$

D. $Cl, F$

**Answer: 2**

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**10.** Which one of the following atoms will have the smallest size ?

A. 0

B. 1

C. 2

D. 4

**Answer: 2**

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**11.** The chemical formula of Permanganic acid is —

A. HMnO4

B. HMnO

C. HClO4

D. Constitutional isomers

**Answer: 2**

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**12.** Which of the following is the correct order of ionisation enthalpy ?

(1)Be+ > Be

(2) O > N

(3) C > Be

(4) F > Ne

A. 2,3

B. 3,4

C. 1,3

D. 1,2

**Answer: 2**

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**13.** The statement that is not correct for periodic classification of elements is

A. 2

B. 3

C. 4

D. 5

**Answer: 3**

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**14.** In the modern periodic table, the block indicates the value of . . . . . for the last subshell that received electrons in building up the electronic configuration. Fill in the blank with appropriate option

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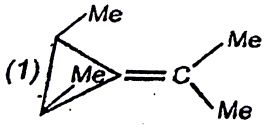
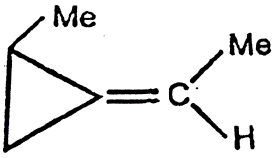
**15.** Element with electronic configuration as $[Ar]^{18}3d^5 4s^2$ is placed in :

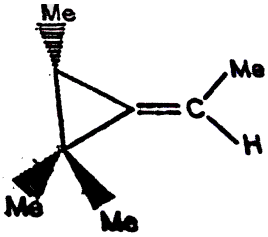
A.



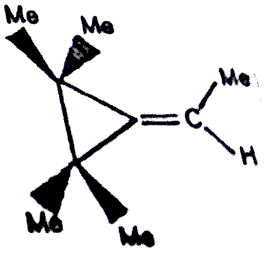

B.




C.




D.




**Answer: 4**

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**16.** Which set does not shows correct matching according to Modern periodic table:

A. $Sc^{3+} - [Ne]3s^2 3p^6$ zero group

B. $Fe^{2+} - [Ar]3d^6$ $8^{th}$ group

C. $Cr - [Ar]3d^5 4s^1$ $6^{th}$ group

D. All of the above

**Answer: 2**

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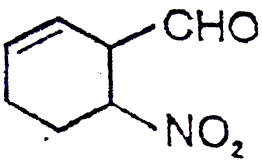
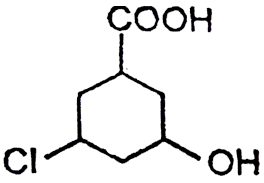
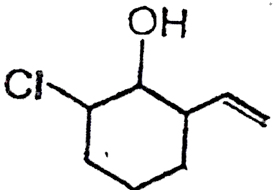
**17.** Atomic radii of fluorine and neon in Angstrom units are respectively given by

A. 

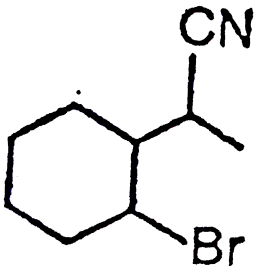
$2-$ Nitrocyclohex$-5-$ ene$-1-$ carbaldehyde

B. 

$5-$ Chloro$-3-$ hydroxycyclohexane $-1-$ carboxylic acid

C. 

$2-$ Ethenyl$-6-$ chlorocyclohexanol

D. 

$2-(2-$ bromocyclohexyl)propanenitrile

**Answer: 4**

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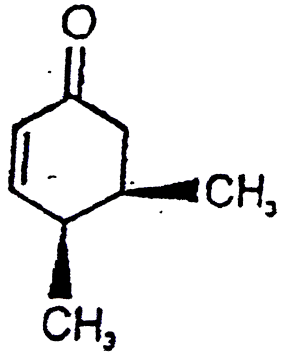
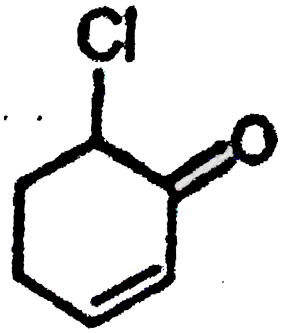
**18.** Which of the following element has the highest ionisation enregy ?

A. 


B. 


C. $CH_3 - \overset{\overset{H}{|}}{\underset{\underset{Br}{|}}{C}} - CH_2 - \overset{\overset{O}{||}}{C} - CH_3$

D. $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - \overset{\overset{O}{||}}{C} - CH_3$

**Answer: 2**

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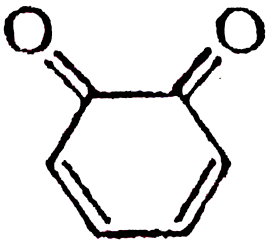
**19.** The set representing the correct order of the first ionisation potential is

A. $CH_3 - \overset{\overset{O}{||}}{C} - Ph$

B. $CH_2 = CH - \overset{\overset{O}{||}}{C} - Ph$

C. 

D. $CH_3 - \underset{\underset{C_2H_5}{|}}{\overset{\overset{Cl}{|}}{C}} - CH = CH - CHO$

**Answer: 1**

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**20.** Which of the following relation is correct with respect first (I) and second (II) ionisation potential of sodium and magnesium?

A. a) I N a > I M g

B. b) I M g = I I N a

C. c) I I M g > I I N a

D. d) I I N a > I I M g

**Answer: 3**

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**21.** First, second & third ionization energies are 737, 1045 & 7733 $KJ/mol$ respectively. The element can be :

A. Na

B. B

C. Al

D. Mg

**Answer: 3**

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**22.** For which of the following process, the value of electron gain enthalpy is positive ?

A. $F(g) + e \rightarrow F^{-}(g)$

B. $Cl(g) + e^{-} \rightarrow Cl(g)$

C. $Be(g) + e^{-} \rightarrow Be^{-}(g)$

D. $B(g) + e \rightarrow B^{-}(g)$

**Answer: V**

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**23.** Which is the correct property mentioned –

A. $Fe^{+} < Fe^{2+} < Fe^{3+}$ – size

B. $Fe^{+} < Fe^{2+} < Fe^{3+}$ – ionisation energy

C. $B < Be < C$ – ionisation energy

D. $N < O < F$ – ionisation energy

**Answer: D**

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**24.** If ionisation energy of an atom is 10 eV & EA is $6.8eV$ electronegativity of the species on pauling scale

A. Carbyl amine test

B. Iodoform test

C. Fehling solution test

D. Hinsberg test

**Answer: 4**

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**25.** Fluorine has the highest electronegativity among the $ns^2np^5$ group on the Pauling scale, but the elctron affinity of fluorine is less than that of chlorine because :

A. $HNO_3$

B. $(NH_4)_2SO_4$

C. $NH_3$

D. $N_2$ gas

**Answer: 2**

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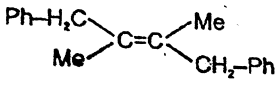
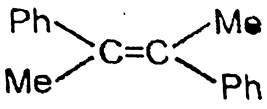
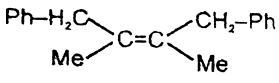
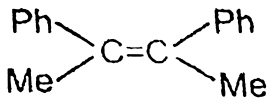
**26.** The increasing order of electron affinity values of $O$, $S$ and $Se$ is

A. 


B. 


C. 

D. 


**Answer: 2**

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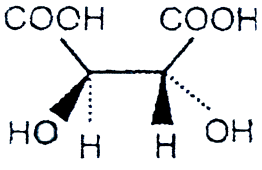
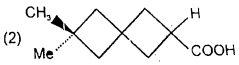
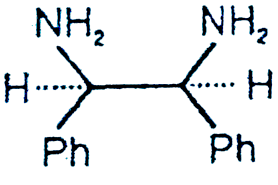
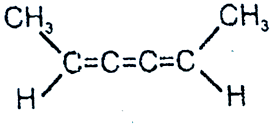
**27.** Electron addition will be easier in : —

A. 


B. 


C. 


D. 

**Answer: 1**

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