

Periodic Table

Date: 17-06-2026

Total Marks: 160

Time: 50 Minutes

Syllabus:

Chemistry: Classification of elements and periodicity in properties

Chemistry

- Q.1** The electronegativity of aluminium is similar to
 A) Boron
 B) Carbon
 C) Lithium
 D) Beryllium
- Q.2** In which of the following options the order of arrangement does not agree with the variation of property indicated against it?
 A) $Al^{3+} < Mg^{2+} < Na^+ < F^-$ (increasing ionic size)
 B) $B < C < N < O$ (increasing first ionisation enthalpy)
 C) $Cl > F > Br > I$ (decreasing electron gain enthalpy)
 D) $Li < Na < K < Rb$ (increasing metallic radius)
- Q.3** In the long form of periodic table all the non-metals are placed under?
 A) s-block
 B) p-block
 C) f-block
 D) d-block
- Q.4** In a period, the element with highest electron affinity belongs to
 A) Group 1
 B) Group 2
 C) Group 17
 D) Group 18
- Q.5** Which from following elements is isoelectronic with Na^+ ?
 A) F B) O C) Mg D) Ne
- Q.6** Identify the element having positive electron gain enthalpy.
 A) Ne B) I C) S D) O
- Q.7** Identify amphoteric oxide from the following.
 A) MgO B) BeO
 C) BaO D) Li_2O
- Q.8** Which of the following species is NOT isoelectronic with neon?
 A) O^{2-} B) Na
 C) Mg^{2+} D) Al^{3+}
- Q.9** A property which gradually increases on moving down a group in the periodic table is
 A) Ionization energy
 B) Electronegativity
 C) Electron affinity
 D) Atomic size
- Q.10** In each period, the most electronegative element belongs to
 A) group - 1
 B) group - 17
 C) group - 2
 D) group - 18
- Q.11** Which of the following pairs shows diagonal relationship?
 A) Li and Mg
 B) Na and K
 C) Zn and Cd
 D) Li and Be

- Q.12** Keeping in view the periodic law and periodic table, suggest which of the following elements should have maximum electronegative character.
- A) Oxygen
B) Nitrogen
C) Fluorine
D) Astatine
- Q.13** The correct sequence of electron gain enthalpy of the elements listed below is
A. Ar B. Br
C. F D. S
Choose the most appropriate from the options given below
- A) $A > D > C > B$
B) $C > B > D > A$
C) $A > D > B > C$
D) $D > C > B > A$
- Q.14** Which one of the following set of ions represents a collection of isoelectronic species?
(Given: Atomic Number: F:9, Cl:17, Na=11, Mg=12, Al=13, K=19, Ca=20, Sc=21)
- A) N^{3-} , O^{2-} , F^- , S^{2-}
B) Li^+ , Na^+ , Mg^{2+} , Ca^{2+}
C) Ba^{2+} , Sr^{2+} , K^+ , Ca^{2+}
D) K^+ , Cl^- , Ca^{2+} , Sc^{3+}
- Q.15** The correct order of electronegativity for given elements is:
- A) $P > Br > C > At$
B) $Br > C > At > P$
C) $Br > P > At > C$
D) $C > P > At > Br$
- Q.16** Given below are two statements.
Statement I: The correct order of first ionization enthalpy values of Li, Na, F and Cl is $Na < Li < Cl < F$.
Statement II: The correct order of negative electron gain enthalpy values of Li, Na, F and Cl is $Na < Li < F < Cl$.
In the light of the above statements, choose the correct answer from the options given below.
- A) Both Statement I and Statement II are true
B) Both Statement I and Statement II are false
C) Statement I is false but Statement II is true
D) Statement I is true but Statement II is false
- Q.17** Arrange the bonds in order of increasing ionic character in the molecules. LiF , K_2O , N_2 , SO_2 and ClF_3
- A) $LiF < K_2O < ClF_3 < SO_2 < N_2$
B) $N_2 < SO_2 < ClF_3 < K_2O < LiF$
C) $ClF_3 < N_2 < SO_2 < K_2O < LiF$
D) $N_2 < ClF_3 < SO_2 < K_2O < LiF$
- Q.18** Incorrect match is
- A) $Cl_2 > Br_2 > F_2 > I_2$ – Bond dissociation energy
B) $Li^{\oplus}(aq) > Na^{\oplus}(aq)$ – Ionic radius
C) $N > O > F$ – Second ionisation energy
D) $C_2H_6 < C_2H_4 < C_2H_2$ – Electronegativity of carbon
- Q.19** Select equations having endothermic step.
- (a) $O^-(g) \rightarrow O^{2-}(g)$
(b) $Na^+(g) + Cl^-(g) \rightarrow NaCl(s)$
(c) $N(g) \rightarrow N^-(g)$
(d) $Al^{2+}(g) \rightarrow Al^{3+}(g)$
- A) a, b
B) a, c
C) a, c, d
D) all of these
- Q.20** The variable valency is generally observed in case of
- A) Transition elements
B) Inert gases
C) Normal elements
D) Metallic elements
- Q.21** The elements with atomic numbers 101 and 104 belong to respectively
- A) Actinoids and Group 4
B) Group 11 and Group 4
C) Group 6 and Actinoids
D) Actinoids and Group 6
- Q.22** Chalcogens are elements of group
- A) 14 B) 15 C) 16 D) 13

- Q.23** Lanthanides belong to
A) fifth period
B) sixth period
C) seventh period
D) none of these
- Q.24** Which block element from following are known as transition elements?
A) f-block
B) s-block
C) p-block
D) d-block
- Q.25** Chemical properties of Li and Mg are similar because:
A) these belong to same group
B) shows diagonal relationship
C) both has same ionization potential
D) both has same electron affinity
- Q.26** Alkaline earth metals belong to which group?
A) IA
B) IIA
C) IIIA
D) IVA
- Q.27** Which element from following does NOT belong to chalcogen family?
A) At
B) Po
C) Se
D) Te
- Q.28** Which among the following is group 16 element?
A) Pb
B) Sb
C) Po
D) As
- Q.29** The element Uuu has atomic number
A) 102
B) 101
C) 111
D) 110
- Q.30** Which from following elements belongs to group 17 of periodic table?
A) At
B) Zn
C) As
D) Te
- Q.31** Which from following elements is in liquid state at room temperature?
A) Se
B) Br
C) I
D) S
- Q.32** X elements is group number 3rd and 5th period. Its outermost configuration is
A) $4d^15s^2$
B) $4d^25s^2$
C) $4d^35s^2$
D) $4d^5s^1$
- Q.33** Electronic configuration of Gd (64) is
A) $[\text{Xe}] 4f^75d^16s^2$
B) $[\text{Xe}] 4f^76s^2$
C) $[\text{Xe}] 4f^75d^06s^2$
D) $[\text{Xe}] 4f^75d^26s^2$
- Q.34** Main block elements are same as that of
A) s-block
B) p-block
C) s and p -block
D) d-block
- Q.35** The group number, number of valence electrons, and valency of an element with atomic number 15, respectively, are
A) 16, 5 and 2
B) 16, 6 and 3
C) 15, 5 and 3
D) 15, 6 and 2
- Q.36** If the atomic number of an element is 33, it will be placed in the periodic table in the
A) First A group
B) Third A group
C) Fifth A group
D) Seventh A group
- Q.37** Which of the following statements is incorrect?
A) Effective nuclear charge for electron of 3d and 4s subshell is same in Sc.
B) From s-block to p-block effective nuclear charge increases in order of 0.65.
C) For H and He value of screening constant (σ) for each electron is same.
D) Effective nuclear charge depends upon value of principal quantum number.

Q.38 Which of the following elements does not form any compound?

- A) Neon
- B) Krypton
- C) Xenon
- D) All of them form no compound

Q.39 The elements with atomic number greater than 100 are known as

- A) Trans-uranium elements
- B) Trans-fermium elements
- C) Actinides
- D) Lanthanides

Q.40 In Mosley's experiment a beam of electrons was incident on metallic surface & unknown electromagnetic rays were emitted which are called x-rays. The relationship between frequency of emitted x-rays & atomic number of metal is $\sqrt{\nu} = a(Z - b)$. Where value of a & b are 1 and 2 respectively & ν should be expressed in s^{-1} . If the frequency of emitted x-rays from metallic surface is $625 s^{-1}$, find the element.

- A) Cu B) V C) Co D) Ni