

CHEMISTRY · JEE MAIN

Periodic Table & Periodicity

Chapter-wise previous year questions, with answer key

92

PYQS

2020–2025

PAPERS

6

TOPICS

Electron Gain Enthalpy

Modern Periodic Law

Ionisation Enthalpy

Atomic and Ionic Radii

Electronegativity

Anomalous Behaviour and Diagonal Relationship

- 1 Attempt each question on paper first — they're grouped by topic, newest papers first.
- 2 Check yourself against the answer key at the end.
- 3 Got one wrong? Tap “Step-by-step solution” under it for the full working.

Stuck on a question?

Every question has a free step-by-step solution on PrepWiser — tap “Step-by-step solution” under it.

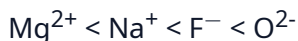
Practise this chapter online with instant answer checking: prepwiser.in/learn · No signup needed to browse

Electron Gain Enthalpy · 14 PYQs

Q1 JEE Main 2025 · 29 Jan · Shift 1

Given below are two statements :

Statement (I) : The radii of isoelectronic species increases in the order.



Statement (II) : The magnitude of electron gain enthalpy of halogen decreases in the order.



In the light of the above statements, choose the most appropriate answer from the options given below :

- (A) Statement I is incorrect but Statement II is correct
- (B) Both Statement I and Statement II are correct
- (C) Statement I is correct but Statement II is incorrect
- (D) Both Statement I and Statement II are incorrect

[Step-by-step solution ► prepwisser.in/questions/8Dm0riLeAg](https://www.prepwisser.in/questions/8Dm0riLeAg)

Q2 JEE Main 2024 · 6 Apr · Shift 1

The electron affinity value are negative for

- A. $\text{Be} \rightarrow \text{Be}^{-}$
- B. $\text{N} \rightarrow \text{N}^{-}$
- C. $\text{O} \rightarrow \text{O}^{2-}$
- D. $\text{Na} \rightarrow \text{Na}^{-}$
- E. $\text{Al} \rightarrow \text{Al}^{-}$

Choose the most appropriate answer from the options given below :

- (A) A, B, D and E only
- (B) D and E only
- (C) A and D only
- (D) A, B and C only

[Step-by-step solution ► prepwisser.in/questions/a9XfB-S_Zm](https://www.prepwisser.in/questions/a9XfB-S_Zm)

Q3 JEE Main 2024 · 31 Jan · Shift 1

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) $A > D > B > C$
- (C) $D > C > B > A$
- (D) $C > B > D > A$

[Step-by-step solution ► prepwisser.in/questions/uZiXoAkN6s](https://www.prepwisser.in/questions/uZiXoAkN6s)

Q4 JEE Main 2024 · 29 Jan · Shift 2

Given below are two statements:

Statement I : Fluorine has most negative electron gain enthalpy in its group.

Statement II : Oxygen has least negative electron gain enthalpy in its group.

In the light of the above statements, choose the most appropriate 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

[Step-by-step solution ► prepwiser.in/questions/6n75XWhN41](https://www.prepwiser.in/questions/6n75XWhN41)

Q5 JEE Main 2023 · 13 Apr · Shift 1

Which of the following statements are not correct?

- A. The electron gain enthalpy of F is more negative than that of Cl.
- B. Ionization enthalpy decreases in a group of periodic table.
- C. The electronegativity of an atom depends upon the atoms bonded to it.
- D. Al_2O_3 and NO are examples of amphoteric oxides.

Choose the most appropriate answer from the options given below :

- (A) A, B, C and D
- (B) A, C and D Only
- (C) A, B and D Only
- (D) B and D Only

[Step-by-step solution ► prepwiser.in/questions/bMtEyqenbB](https://www.prepwiser.in/questions/bMtEyqenbB)

Q6 JEE Main 2023 · 6 Apr · Shift 1

The difference between electron gain enthalpies will be maximum between :

- (A) Ar and Cl
- (B) Ne and Cl
- (C) Ne and F
- (D) Ar and F

[Step-by-step solution ► prepwiser.in/questions/Ro0XMrhnOw](https://www.prepwiser.in/questions/Ro0XMrhnOw)

Q7 JEE Main 2023 · 1 Feb · Shift 2

For electron gain enthalpies of the elements denoted as $\Delta_{\text{eg}}H$, the incorrect option is :

- (A) $\Delta_{\text{eg}}H(\text{I}) < \Delta_{\text{eg}}H(\text{At})$
- (B) $\Delta_{\text{eg}}H(\text{Te}) < \Delta_{\text{eg}}H(\text{Po})$
- (C) $\Delta_{\text{eg}}H(\text{Cl}) < \Delta_{\text{eg}}H(\text{F})$
- (D) $\Delta_{\text{eg}}H(\text{Se}) < \Delta_{\text{eg}}H(\text{S})$

[Step-by-step solution ► prepwiser.in/questions/I0SKHhvt7](https://www.prepwiser.in/questions/I0SKHhvt7)

Q8 JEE Main 2022 · 28 Jul · Shift 1

In which of the following pairs, electron gain enthalpies of constituent elements are nearly the same or identical?

- (A) Rb and Cs
- (B) Na and K
- (C) Ar and Kr
- (D) I and At

Choose the correct answer from the options given below :

- (A) (A) and (B) only
- (B) (B) and (C) only
- (C) (A) and (C) only
- (D) (C) and (D) only

[Step-by-step solution ► prepwisser.in/questions/16poSbt1nO](https://www.prepwisser.in/questions/16poSbt1nO)

Q9 JEE Main 2022 · 30 Jun · Shift 1

The correct order of electron gain enthalpy (– ve value) is :

- (A) $O > S > Se > Te$
- (B) $O < S < Se < Te$
- (C) $O < S > Se > Te$
- (D) $O < S > Se < Te$

[Step-by-step solution ► prepwisser.in/questions/UKPKucT1NI](https://www.prepwisser.in/questions/UKPKucT1NI)

Q10 JEE Main 2022 · 25 Jun · Shift 2

The correct order of electron gain enthalpies of Cl, F, Te and Po is

- (A) $F < Cl < Te < Po$
- (B) $Po < Te < F < Cl$
- (C) $Te < Po < Cl < F$
- (D) $Cl < F < Te < Po$

[Step-by-step solution ► prepwisser.in/questions/8kvPLkqz4f](https://www.prepwisser.in/questions/8kvPLkqz4f)

Q11 JEE Main 2021 · 17 Mar · Shift 1

The absolute value of the electron gain enthalpy of halogens satisfies :

- (A) $Cl > Br > F > I$
- (B) $Cl > F > Br > I$
- (C) $I > Br > Cl > F$
- (D) $F > Cl > Br > I$

[Step-by-step solution ► prepwisser.in/questions/YiutdeEB1v](https://www.prepwisser.in/questions/YiutdeEB1v)

Q12 JEE Main 2021 · 26 Feb · Shift 2

The correct order of electron gain enthalpy is :

- (A) $Te > Se > S > O$
- (B) $S > Se > Te > O$
- (C) $S > O > Se > Te$
- (D) $O > S > Se > Te$

[Step-by-step solution ► prepwisser.in/questions/-vdMaWkmBO](https://www.prepwisser.in/questions/-vdMaWkmBO)

Q13 JEE Main 2020 · 7 Jan · Shift 1

The electron gain enthalpy (in KJ/mol) of fluorine, chlorine, bromine and iodine, respectively are:

- (A) -296, -325, -333 and -349 (B) 349, -333, -325 and -296
(C) -333, -349, -325 and -296 (D) -333, -325, -349 and -296

Step-by-step solution ► [prepwisar.in/questions/B8PpgPJHEA](https://www.prepwisar.in/questions/B8PpgPJHEA)

Q14 JEE Main 2020 · 7 Jan · Shift 2

Within each pair of elements F & Cl, S & Se, and Li & Na, respectively, the elements that release more energy upon and electron gain are :

- (A) F, S and Li (B) Cl, Se and Na
(C) Cl, S and Li (D) F, Se and Na

Step-by-step solution ► [prepwisar.in/questions/6eLlu-nUFg](https://www.prepwisar.in/questions/6eLlu-nUFg)

Modern Periodic Law · 15 PYQs

Q15 JEE Main 2025 · 28 Jan · Shift 2

Given below are two statements :

Statement I : According to the Law of Octaves, the elements were arranged in the increasing order of their atomic number.

Statement II : Meyer observed a periodically repeated pattern upon plotting physical properties of certain elements against their respective atomic numbers.

In the light of the above statements, choose the **correct** answer from the options given below :

- (A) Both **Statement I** and **Statement II** are false
(B) **Statement I** is false but **Statement II** is true
(C) **Statement I** is true but **Statement II** is false
(D) Both **Statement I** and **Statement II** are true

Step-by-step solution ► [prepwisar.in/questions/oViuMjGNNc](https://www.prepwisar.in/questions/oViuMjGNNc)

Q16 JEE Main 2025 · 24 Jan · Shift 1

Which of the following statements are NOT true about the periodic table?

- A. The properties of elements are function of atomic weights.
B. The properties of elements are function of atomic numbers.
C. Elements having similar outer electronic configurations are arranged in same period.
D. An element's location reflects the quantum numbers of the last filled orbital.
E. The number of elements in a period is same as the number of atomic orbitals available in energy level that is being filled.

Choose the correct answer from the options given below:

- (A) A, C and E Only (B) A and E Only
(C) B, C and E Only (D) D and E Only

Step-by-step solution ► [prepwisar.in/questions/XpvVI53IYg](https://www.prepwisar.in/questions/XpvVI53IYg)

Q17 JEE Main 2025 · 23 Jan · Shift 1

The element that does not belong to the same period of the remaining elements (modern periodic table) is:

- (A) Platinum (B) Osmium
(C) Iridium (D) Palladium

[Step-by-step solution ► prepwiser.in/questions/48GThejVSV](https://www.prepwiser.in/questions/48GThejVSV)

Q18 JEE Main 2025 · 22 Jan · Shift 2

Given below are two statements :

Statement (I) : An element in the extreme left of the periodic table forms acidic oxides.

Statement (II) : Acid is formed during the reaction between water and oxide of a reactive element present in the extreme right of the periodic table.

In the light of the above statements, choose the correct answer from the options given below :

- (A) Both Statement I and Statement II are false
(B) Both Statement I and Statement II are true
(C) Statement I is true but Statement II is false
(D) Statement I is false but Statement II is true

[Step-by-step solution ► prepwiser.in/questions/O7AjQeVMgB](https://www.prepwiser.in/questions/O7AjQeVMgB)

Q19 JEE Main 2024 · 30 Jan · Shift 2

Given below are two statements:

Statement - I: Along the period, the chemical reactivity of the elements gradually increases from group 1 to group 18 .

Statement - II: The nature of oxides formed by group 1 elements is basic while that of group 17 elements is acidic.

In the light of the above statements, choose the most appropriate from the options given below:

- (A) Statement I is False but Statement II is true
(B) Both Statement I and Statement II are False
(C) Statement I is True But Statement II is False
(D) Both Statement I and Statement II are True

[Step-by-step solution ► prepwiser.in/questions/0XtGUr0z5X](https://www.prepwiser.in/questions/0XtGUr0z5X)

Q20 JEE Main 2024 · 30 Jan · Shift 1

If IUPAC name of an element is "Unununnium" then the element belongs to n^{th} group of Periodic table. The value of n is _____.

Numerical answer — enter the value.

[Step-by-step solution ► prepwiser.in/questions/KXd69A8dWP](https://www.prepwiser.in/questions/KXd69A8dWP)

Q21 JEE Main 2024 · 27 Jan · Shift 1

Given below are two statements :

Statement (I) : The 4f and 5f - series of elements are placed separately in the Periodic table to preserve the principle of classification.

Statement (II) : S-block elements can be found in pure form in nature.

In the light of the above statements, choose the most appropriate answer from the options given below :

- (A) Statement I is false but Statement II is true
- (B) Both Statement I and Statement II are true
- (C) Statement I is true but Statement II is false
- (D) Both Statement I and Statement II are false

[Step-by-step solution ► prepwiser.in/questions/745Qv0tN_i](https://www.prepwiser.in/questions/745Qv0tN_i)

Q22 JEE Main 2023 · 25 Jan · Shift 2

Which of the following represents the correct order of metallic character of the given elements?

- (A) $K < Mg < Be < Si$
- (B) $Si < Be < Mg < K$
- (C) $Be < Si < Mg < K$
- (D) $Be < Si < K < Mg$

[Step-by-step solution ► prepwiser.in/questions/JxmnHLLM23](https://www.prepwiser.in/questions/JxmnHLLM23)

Q23 JEE Main 2022 · 28 Jun · Shift 1

Element "E" belongs to the period 4 and group 16 of the periodic table. The valence shell electron configuration of the element, which is just above "E" in the group is

- (A) $3s^2, 3p^4$
- (B) $3d^{10}, 4s^2, 4p^4$
- (C) $4d^{10}, 5s^2, 5p^4$
- (D) $2s^2, 2p^4$

[Step-by-step solution ► prepwiser.in/questions/hrHvg1Byca](https://www.prepwiser.in/questions/hrHvg1Byca)

Q24 JEE Main 2022 · 26 Jun · Shift 2

Which of the following elements is considered as a metalloid?

- | | |
|--------|--------|
| (A) Sc | (B) Pb |
| (C) Bi | (D) Te |

[Step-by-step solution ► prepwiser.in/questions/qH3-fLMdp](https://www.prepwiser.in/questions/qH3-fLMdp)

Q25 JEE Main 2021 · 22 Jul · Shift 2

Which one of the following statements for D.I. Mendeleeff, is incorrect?

- (A) He authored the textbook - Principles of Chemistry
- (B) At the time, he proposed Periodic Table of elements structure of atom was known.
- (C) Element with atomic number 101 is named after him.
- (D) He invented accurate barometer.

[Step-by-step solution ► prepwiser.in/questions/eNo4_8si-o](https://www.prepwiser.in/questions/eNo4_8si-o)

Q26 JEE Main 2021 · 16 Mar · Shift 2

The characteristics of elements X, Y and Z with atomic numbers, respectively, 33, 53 and 83 are :

- (A) X and Y are metalloids and Z is a metal.
- (B) X and Z are non-metals and Y is a metalloid.
- (C) X is a metalloid, Y is a non-metal and Z is a metal.
- (D) X, Y and Z are metals.

[Step-by-step solution ► prepwiser.in/questions/j0Mbcrzq3G](https://www.prepwiser.in/questions/j0Mbcrzq3G)

Q27 JEE Main 2021 · 24 Feb · Shift 2

What is the correct order of the following elements with respect to their density?

- (A) $\text{Cr} < \text{Zn} < \text{Co} < \text{Cu} < \text{Fe}$
- (B) $\text{Cr} < \text{Fe} < \text{Co} < \text{Cu} < \text{Zn}$
- (C) $\text{Zn} < \text{Cr} < \text{Fe} < \text{Co} < \text{Cu}$
- (D) $\text{Zn} < \text{Cu} < \text{Co} < \text{Fe} < \text{Cr}$

[Step-by-step solution ► prepwiser.in/questions/b9s21oT34Q](https://www.prepwiser.in/questions/b9s21oT34Q)

Q28 JEE Main 2020 · 3 Sep · Shift 1

The atomic number of the element unnilennium is :

- (A) 109
- (B) 102
- (C) 119
- (D) 108

[Step-by-step solution ► prepwiser.in/questions/we8653TuEW](https://www.prepwiser.in/questions/we8653TuEW)

Q29 JEE Main 2020 · 2 Sep · Shift 2

Three elements X, Y and Z are in the 3rd period of the periodic table. The oxides of X, Y and Z, respectively, are basic, amphoteric and acidic. The correct order of the atomic numbers of X, Y and Z is :

- (A) $X < Z < Y$
- (B) $Y < X < Z$
- (C) $Z < Y < X$
- (D) $X < Y < Z$

[Step-by-step solution ► prepwiser.in/questions/f7_IGXo19q](https://www.prepwiser.in/questions/f7_IGXo19q)

Q30 JEE Main 2025 · 8 Apr · Shift 2

The atomic number of the element from the following with lowest 1st ionisation enthalpy is :

- (A) 32
- (B) 35
- (C) 19
- (D) 87

[Step-by-step solution ► prepwisser.in/questions/JHXy60GjjC](https://www.prepwisser.in/questions/JHXy60GjjC)

Q31 JEE Main 2025 · 4 Apr · Shift 2

The incorrect relationship in the following pairs in relation to ionisation enthalpies is :

- (A) $\text{Mn}^{2+} < \text{Fe}^{2+}$
- (B) $\text{Mn}^+ < \text{Mn}^{2+}$
- (C) $\text{Mn}^+ < \text{Cr}^+$
- (D) $\text{Fe}^{2+} < \text{Fe}^{3+}$

[Step-by-step solution ► prepwisser.in/questions/HODDefbfIY](https://www.prepwisser.in/questions/HODDefbfIY)

Q32 JEE Main 2025 · 4 Apr · Shift 2

Given below are two statements :

Statement (I) : The first ionisation enthalpy of group 14 elements is higher than the corresponding elements of group 13.

Statement (II) : Melting points and boiling points of group 13 elements are in general much higher than those of corresponding elements of group 14.

In the light of the above statements, choose the most appropriate answer from the options given below :

- (A) Statement I is correct but Statement II is incorrect
- (B) Both Statement I and Statement II are incorrect
- (C) Statement I is incorrect but Statement II is correct
- (D) Both Statement I and Statement II are correct

[Step-by-step solution ► prepwisser.in/questions/m4cn09qCoN](https://www.prepwisser.in/questions/m4cn09qCoN)

Q33 JEE Main 2025 · 29 Jan · Shift 2

First ionisation enthalpy values of first four group 15 elements are given below. Choose the correct value for the element that is a main component of apatite family :

- (A) 834 kJ mol^{-1}
- (B) 947 kJ mol^{-1}
- (C) 1402 kJ mol^{-1}
- (D) 1012 kJ mol^{-1}

[Step-by-step solution ► prepwisser.in/questions/2ks-MWh_G7](https://www.prepwisser.in/questions/2ks-MWh_G7)

Q34 JEE Main 2025 · 24 Jan · Shift 2

Given below are two statements :

Statement (I) : The first ionization energy of Pb is greater than that of Sn .

Statement (II) : The first ionization energy of Ge is greater than that of Si .

In the light of the above statements, choose the correct answer from the options given below :

- (A) Statement I is false but Statement II is true
- (B) Both Statement I and Statement II are false
- (C) Both Statement I and Statement II are true
- (D) Statement I is true but Statement II is false

[Step-by-step solution ► prepwiser.in/questions/Hdj_1KINBv](https://www.prepwiser.in/questions/Hdj_1KINBv)

Q35 JEE Main 2025 · 24 Jan · Shift 2

The successive 5 ionisation energies of an element are 800, 2427, 3658, 25024 and 32824 kJ/mol, respectively. By using the above values predict the group in which the above element is present :

- (A) Group 4
- (B) Group 2
- (C) Group 13
- (D) Group 14

[Step-by-step solution ► prepwiser.in/questions/xCzaICc9FF](https://www.prepwiser.in/questions/xCzaICc9FF)

Q36 JEE Main 2024 · 4 Apr · Shift 2

Given below are two statements :

Statement I : The correct order of first ionization enthalpy values of Li, Na, F and Cl is $\text{Na} < \text{Li} < \text{Cl} < \text{F}$.

Statement II : The correct order of negative electron gain enthalpy values of Li, Na, F and Cl is $\text{Na} < \text{Li} < \text{F} < \text{Cl}$

In the light of the above statements, choose the correct answer from the options given below :

- (A) Statement I is true but Statement II is false
- (B) Both Statement I and Statement II are false
- (C) Statement I is false but Statement II is true
- (D) Both Statement I and Statement II are true

[Step-by-step solution ► prepwiser.in/questions/I7L31sJFpQ](https://www.prepwiser.in/questions/I7L31sJFpQ)

Q37 JEE Main 2024 · 4 Apr · Shift 1

The correct order of first ionization enthalpy values of the following elements is :

- (A) O
- (B) N
- (C) Be
- (D) F
- (E) B

Choose the correct answer from the options given below :

- (A) $\text{A} < \text{B} < \text{D} < \text{C} < \text{E}$
- (B) $\text{C} < \text{E} < \text{A} < \text{B} < \text{D}$
- (C) $\text{E} < \text{C} < \text{A} < \text{B} < \text{D}$
- (D) $\text{B} < \text{D} < \text{C} < \text{E} < \text{A}$

[Step-by-step solution ► prepwiser.in/questions/RI2shRyy3E](https://www.prepwiser.in/questions/RI2shRyy3E)

Q38 JEE Main 2024 · 4 Apr · Shift 2

The correct order of the first ionization enthalpy is

- (A) $\text{Ga} > \text{Al} > \text{B}$ (B) $\text{Tl} > \text{Ga} > \text{Al}$
(C) $\text{Al} > \text{Ga} > \text{Tl}$ (D) $\text{B} > \text{Al} > \text{Ga}$

[Step-by-step solution ► prepwisser.in/questions/O8BFquDUjU](https://www.prepwisser.in/questions/O8BFquDUjU)

Q39 JEE Main 2024 · 1 Feb · Shift 2

Given below are two statements :

Statement (I) : Both metals and non-metals exist in p and d-block elements.

Statement (II) : Non-metals have higher ionisation enthalpy and higher electronegativity than the metals.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (A) Both Statement I and Statement II are false
(B) Both Statement I and Statement II are true
(C) Statement I is false but Statement II is true
(D) Statement I is true but Statement II is false

[Step-by-step solution ► prepwisser.in/questions/qh8jNR4F8f](https://www.prepwisser.in/questions/qh8jNR4F8f)

Q40 JEE Main 2024 · 29 Jan · Shift 2

The element having the highest first ionization enthalpy is

- (A) C (B) Al
(C) Si (D) N

[Step-by-step solution ► prepwisser.in/questions/I3LYbWTajp](https://www.prepwisser.in/questions/I3LYbWTajp)

Q41 JEE Main 2024 · 29 Jan · Shift 1

Given below are two statements : one is labelled as Assertion **A** and the other is labelled as Reason **R** :

Assertion **A** : The first ionisation enthalpy decreases across a period.

Reason **R** : The increasing nuclear charge outweighs the shielding across the period.

In the light of the above statements, choose the most appropriate from the options given below :

- (A) **A** is false but **R** is true
(B) Both **A** and **R** are true but **R** is NOT the correct explanation of **A**
(C) Both **A** and **R** are true and **R** is the correct explanation of **A**
(D) **A** is true but **R** is false

[Step-by-step solution ► prepwisser.in/questions/TBuTnJUM83](https://www.prepwisser.in/questions/TBuTnJUM83)

Q42 JEE Main 2023 · 11 Apr · Shift 1

For elements B, C, N, Li, Be, O and F, the correct order of first ionization enthalpy is

- (A) $\text{Li} < \text{Be} < \text{B} < \text{C} < \text{O} < \text{N} < \text{F}$
- (B) $\text{B} > \text{Li} > \text{Be} > \text{C} > \text{N} > \text{O} > \text{F}$
- (C) $\text{Li} < \text{Be} < \text{B} < \text{C} < \text{N} < \text{O} < \text{F}$
- (D) $\text{Li} < \text{B} < \text{Be} < \text{C} < \text{O} < \text{N} < \text{F}$

Step-by-step solution ► [prepwiser.in/questions/AcDtvvFZEs](https://www.prepwiser.in/questions/AcDtvvFZEs)

Q43 JEE Main 2023 · 10 Apr · Shift 2

Given below are two statements: one is labelled as Assertion **A** and the other is labelled as Reason **R**
Assertion A : The energy required to form Mg^{2+} from Mg is much higher than that required to produce Mg^+

Reason **R** : Mg^{2+} is small ion and carry more charge than Mg^+

In the light of the above statements, choose the correct answer from the options given below.

- (A) A is false but R is true
- (B) Both A and R are correct but R is NOT the correct explanation of A
- (C) Both A and R are correct and R is the correct explanation of A
- (D) A is true but R is false

Step-by-step solution ► [prepwiser.in/questions/UZtqX57QCU](https://www.prepwiser.in/questions/UZtqX57QCU)

Q44 JEE Main 2023 · 10 Apr · Shift 2

The correct order of metallic character is :

- (A) $\text{K} > \text{Be} > \text{Ca}$
- (B) $\text{Ca} > \text{K} > \text{Be}$
- (C) $\text{K} > \text{Ca} > \text{Be}$
- (D) $\text{Be} > \text{Ca} > \text{K}$

Step-by-step solution ► [prepwiser.in/questions/N4Aol_8VFG](https://www.prepwiser.in/questions/N4Aol_8VFG)

Q45 JEE Main 2023 · 29 Jan · Shift 2

Given below are two statements :

Statement I : The decrease in first ionization enthalpy from B to Al is much larger than that from Al to Ga.

Statement II : The d orbitals in Ga are completely filled.

In the light of the above statements, choose the most appropriate answer from the options given below

- (A) Statement I is correct but statement II is incorrect
- (B) Statement I is incorrect but statement II is correct
- (C) Both the statements I and II are correct
- (D) Both the statements I and II are incorrect

Step-by-step solution ► [prepwiser.in/questions/_q_vOpw_wi](https://www.prepwiser.in/questions/_q_vOpw_wi)

Q46 JEE Main 2022 · 29 Jul · Shift 1

The first ionization enthalpy of Na, Mg and Si, respectively, are : 496, 737 and 786 kJ mol^{-1} . The first ionization enthalpy (kJ mol^{-1}) of Al is :

- (A) 487
- (B) 768
- (C) 577
- (D) 856

Step-by-step solution ► [prepwiser.in/questions/4VTW9Tq-Cm](https://www.prepwiser.in/questions/4VTW9Tq-Cm)

Q47 JEE Main 2022 · 27 Jul · Shift 2

Outermost electronic configurations of four elements A, B, C, D are given below :

- (A) $3s^2$
- (B) $3s^2 3p^1$
- (C) $3s^2 3p^3$
- (D) $3s^2 3p^4$

The correct order of first ionization enthalpy for them is :

- (A) $(A) < (B) < (C) < (D)$
- (B) $(B) < (A) < (D) < (C)$
- (C) $(B) < (D) < (A) < (C)$
- (D) $(B) < (A) < (C) < (D)$

[Step-by-step solution ► prepwiser.in/questions/VcezplTJxe](https://www.prepwiser.in/questions/VcezplTJxe)

Q48 JEE Main 2022 · 25 Jul · Shift 2

The first ionization enthalpies of Be, B, N and O follow the order

- (A) $O < N < B < Be$
- (B) $Be < B < N < O$
- (C) $B < Be < N < O$
- (D) $B < Be < O < N$

[Step-by-step solution ► prepwiser.in/questions/mYW-OKs6TP](https://www.prepwiser.in/questions/mYW-OKs6TP)

Q49 JEE Main 2022 · 29 Jun · Shift 2

Given below are two statements. One is labelled as Assertion A and the other is labelled as Reason R.

Assertion A : The first ionization enthalpy for oxygen is lower than that of nitrogen.

Reason R : The four electrons in 2p orbitals of oxygen experience more electron-electron repulsion.

In the light of the above statements, choose the correct answer from the options given below.

- (A) Both A and R are correct and R is the correct explanation of A.
- (B) Both A and R are correct but R is NOT the correct explanation of A.
- (C) A is correct but R is not correct.
- (D) A is not correct but R is correct.

[Step-by-step solution ► prepwiser.in/questions/7QMqmx6swZ](https://www.prepwiser.in/questions/7QMqmx6swZ)

Q50 JEE Main 2021 · 31 Aug · Shift 1

Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : Metallic character decreases and non-metallic character increases on moving from left to right in a period.

Reason (R) : It is due to increase in ionisation enthalpy and decrease in electron gain enthalpy, when one moves from left to right in a period.

In the light of the above statements, choose the most appropriate answer from the options given below :

- (A) (A) is false but (R) is true.
(B) (A) is true but (R) is false
(C) Both (A) and (R) are correct and (R) is the correct explanation of (A)
(D) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

[Step-by-step solution ► prepwisser.in/questions/JuWWVdo1wH](https://www.prepwisser.in/questions/JuWWVdo1wH)

Q51 JEE Main 2021 · 27 Jul · Shift 2

The correct order of first ionisation enthalpy is :

- (A) $\text{Mg} < \text{S} < \text{Al} < \text{P}$ (B) $\text{Mg} < \text{Al} < \text{S} < \text{P}$
(C) $\text{Al} < \text{Mg} < \text{S} < \text{P}$ (D) $\text{Mg} < \text{Al} < \text{P} < \text{S}$

[Step-by-step solution ► prepwisser.in/questions/iNzXRZm5ba](https://www.prepwisser.in/questions/iNzXRZm5ba)

Q52 JEE Main 2021 · 18 Mar · Shift 2

The first ionization energy of magnesium is smaller as compared to that of elements X and Y, but higher than that of Z. The elements X, Y and Z, respectively, are :

- (A) neon, sodium and chlorine (B) argon, chlorine and sodium
(C) chlorine, lithium and sodium (D) argon, lithium and sodium

[Step-by-step solution ► prepwisser.in/questions/MSeh_dLRtG](https://www.prepwisser.in/questions/MSeh_dLRtG)

Q53 JEE Main 2021 · 16 Mar · Shift 2

Identify the elements X and Y using the ionisation energy values given below :

Ionization energy (kJ/mol)

1st	2nd
X 495	4563
Y 731	1450

- (A) X = F; Y = Mg (B) X = Mg; Y = F
(C) X = Na; Y = Mg (D) X = Mg; Y = Na

[Step-by-step solution ► prepwisser.in/questions/nbak0fB_cs](https://www.prepwisser.in/questions/nbak0fB_cs)

Match List - I with List - II.

List I	List II
Electronic configuration	$\Delta_i H$ in kJ mol^{-1}
(a) $1s^2 2s^2$	(i) 801
(b) $1s^2 2s^2 2p^4$	(ii) 899
(c) $1s^2 2s^2 2p^3$	(iii) 1314
(d) $1s^2 2s^2 2p^1$	(iv) 1402

Choose the most appropriate answer from the options given below :

(A) (a) $\rightarrow$ (i), (b) $\rightarrow$ (iii), (c) $\rightarrow$ (iv), (d) $\rightarrow$ (iii)

(B) (a) $\rightarrow$ (iv), (b) $\rightarrow$ (i), (c) $\rightarrow$ (ii), (d) $\rightarrow$ (iii)

(C) (a) $\rightarrow$ (ii), (b) $\rightarrow$ (iii), (c) $\rightarrow$ (iv), (d) $\rightarrow$ (i)

(D) (a) $\rightarrow$ (i), (b) $\rightarrow$ (iv), (c) $\rightarrow$ (iii), (d) $\rightarrow$ (ii)

Step-by-step solution ► [prepwiser.in/questions/8psOJFmeOi](https://www.prepwiser.in/questions/8psOJFmeOi)

Consider the elements Mg, Al, S, P and Si, the correct increasing order of their first ionization enthalpy is :

(A) $\text{Al} < \text{Mg} < \text{Si} < \text{S} < \text{P}$

(B) $\text{Al} < \text{Mg} < \text{S} < \text{Si} < \text{P}$

(C) $\text{Mg} < \text{Al} < \text{Si} < \text{S} < \text{P}$

(D) $\text{Mg} < \text{Al} < \text{Si} < \text{P} < \text{S}$

Step-by-step solution ► [prepwiser.in/questions/RvCJhCK6K8](https://www.prepwiser.in/questions/RvCJhCK6K8)

The five successive ionization enthalpies of an element are 800, 2427, 3658, 25024 and $32824 \text{ kJ mol}^{-1}$. The number of valence electrons in the element is :

(A) 2

(B) 3

(C) 4

(D) 5

Step-by-step solution ► [prepwiser.in/questions/qLpzE0bhVG](https://www.prepwiser.in/questions/qLpzE0bhVG)

Q57 JEE Main 2020 · 9 Jan · Shift 1

B has a smaller first ionization enthalpy than Be. Consider the following statements :

(I) It is easier to remove 2p electron than 2s electron

(II) 2p electron of B is more shielded from the nucleus by the inner core of electrons than the 2s electrons of Be.

(III) 2s electron has more penetration power than 2p electron.

(IV) atomic radius of B is more than Be (Atomic number B = 5, Be = 4)

The correct statements are :

(A) (I), (III) and (IV)

(B) (II), (III) and (IV)

(C) (I), (II) and (IV)

(D) (I), (II) and (III)

Step-by-step solution ► [prepwiser.in/questions/P-34IPTs1y](https://www.prepwiser.in/questions/P-34IPTs1y)

Q58 JEE Main 2020 · 8 Jan · Shift 1

The third ionization enthalpy is minimum for :

(A) Ni

(B) Co

(C) Mn

(D) Fe

Step-by-step solution ► [prepwiser.in/questions/9MGZhoW-vY](https://www.prepwiser.in/questions/9MGZhoW-vY)

Q59 JEE Main 2020 · 8 Jan · Shift 1

The first ionization energy (in kJ/mol) of Na, Mg, Al and Si respectively, are :

(A) 496, 577, 786, 737

(B) 496, 737, 577, 786

(C) 786, 737, 577, 496

(D) 496, 577, 737, 786

Step-by-step solution ► [prepwiser.in/questions/RXB4Or-WLF](https://www.prepwiser.in/questions/RXB4Or-WLF)

Atomic and Ionic Radii · 22 PYQs

Q60 JEE Main 2025 · 7 Apr · Shift 2

Choose the incorrect trend in the atomic radii (r) of the elements.

(A) $r_{\text{Rb}} < r_{\text{Cs}}$

(B) $r_{At} < r_{Cs}$

(C) $r_{\text{Br}} < r_{\text{K}}$

(D) $r_{\text{Mg}} < r_{\text{Al}}$

Step-by-step solution ► [prepwisser.in/questions/nY_CgZAelh](https://www.prepwisser.in/questions/nY_CgZAelh)

Q61 JEE Main 2025 · 3 Apr · Shift 2

The correct orders among the following are

Atomic radius : $B < Al < Ga < In < Tl$

Electronegativity : $Al < Ga < In < Tl < B$

Density : $Tl < In < Ga < Al < B$

1st Ionisation Energy : $In < Al < Ga < Tl < B$

Choose the correct answer from the options given below:

(A) B and D Only

(B) A and B Only

(C) C and D Only

(D) A and C Only

[Step-by-step solution ► prepwisser.in/questions/icjsw4yNwF](https://www.prepwisser.in/questions/icjsw4yNwF)

Q62 JEE Main 2025 · 29 Jan · Shift 2

The type of oxide formed by the element among Li, Na, Be, Mg, B and Al that has the least atomic radius is :

(A) AO

(B) AO_2

(C) A_2O

(D) A_2O_3

[Step-by-step solution ► prepwisser.in/questions/3ASjKqII_G](https://www.prepwisser.in/questions/3ASjKqII_G)

Q63 JEE Main 2025 · 28 Jan · Shift 1

The incorrect decreasing order of atomic radii is

(A) $Si > P > Cl > F$

(B) $Mg > Al > C > O$

(C) $Al > B > N > F$

(D) $Be > Mg > Al > Si$

[Step-by-step solution ► prepwisser.in/questions/1F4I1uEISR](https://www.prepwisser.in/questions/1F4I1uEISR)

Q64 JEE Main 2024 · 5 Apr · Shift 2

Given below are two statements :

Statement I : The metallic radius of Na is $1.86\text{\AA}$ and the ionic radius of Na^+ is lesser than $1.86\text{\AA}$

Statement II : Ions are always smaller in size than the corresponding elements.

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) Statement I is incorrect but Statement II is true

(C) Both Statement I and Statement II are false

(D) Statement I is correct but Statement II is false

[Step-by-step solution ► prepwisser.in/questions/o-OZ90fRza](https://www.prepwisser.in/questions/o-OZ90fRza)

Q65 JEE Main 2024 · 5 Apr · Shift 1

The statement(s) that are correct about the species O^{2-} , F^{-} , Na^{+} and Mg^{2+} .

- (A) All are isoelectronic
- (B) All have the same nuclear charge
- (C) O^{2-} has the largest ionic radii
- (D) Mg^{2+} has the smallest ionic radii

Choose the most appropriate answer from the options given below :

- (A) (C) and (D) only
- (B) (A), (C) and (D) only
- (C) (B), (C) and (D) only
- (D) (A), (B), (C) and (D)

[Step-by-step solution ► prepwisser.in/questions/u9Eb91Gj5I](https://www.prepwisser.in/questions/u9Eb91Gj5I)

Q66 JEE Main 2024 · 1 Feb · Shift 1

In case of isoelectronic species the size of F^{-} , Ne and Na^{+} is affected by :

- (A) Nuclear charge (z)
- (B) None of the factors because their size is the same
- (C) Electron-electron interaction in the outer orbitals
- (D) Principal quantum number (n)

[Step-by-step solution ► prepwisser.in/questions/t6jDxE4ld3](https://www.prepwisser.in/questions/t6jDxE4ld3)

Q67 JEE Main 2024 · 30 Jan · Shift 1

Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : There is a considerable increase in covalent radius from N to P. However from As to Bi only a small increase in covalent radius is observed.

Reason (R) : Covalent and ionic radii in a particular oxidation state increases down the group. In the light of the above statements, choose the most appropriate answer from the options given below:

- (A) (A) is false but (R) is true
- (B) Both (A) and (R) are true and (R) is the correct explanation of (A)
- (C) Both (A) and (R) are true but (R) is not the correct explanation of (A)
- (D) (A) is true but (R) is false

[Step-by-step solution ► prepwisser.in/questions/7L6PkSxvPa](https://www.prepwisser.in/questions/7L6PkSxvPa)

Q68 JEE Main 2023 · 31 Jan · Shift 1

The correct increasing order of the ionic radii is

- (A) $Cl^{-} < Ca^{2+} < K^{+} < S^{2-}$
- (B) $K^{+} < S^{2-} < Ca^{2+} < Cl^{-}$
- (C) $Ca^{2+} < K^{+} < Cl^{-} < S^{2-}$
- (D) $S^{2-} < Cl^{-} < Ca^{2+} < K^{+}$

[Step-by-step solution ► prepwisser.in/questions/sz5NJVOHSH](https://www.prepwisser.in/questions/sz5NJVOHSH)

Q69 JEE Main 2022 · 28 Jul · Shift 2

The correct decreasing order for metallic character is :

- (A) $\text{Na} > \text{Mg} > \text{Be} > \text{Si} > \text{P}$ (B) $\text{P} > \text{Si} > \text{Be} > \text{Mg} > \text{Na}$
(C) $\text{Si} > \text{P} > \text{Be} > \text{Na} > \text{Mg}$ (D) $\text{Be} > \text{Na} > \text{Mg} > \text{Si} > \text{P}$

Step-by-step solution ► [prepwiser.in/questions/rO2QNA-mm6](https://www.prepwiser.in/questions/rO2QNA-mm6)

Q70 JEE Main 2022 · 26 Jul · Shift 1

Given two statements below :

Statement I : In Cl_2 molecule the covalent radius is double of the atomic radius of chlorine.

Statement II : Radius of anionic species is always greater than their parent atomic radius.

Choose the most appropriate answer from options given below :

- (A) Both Statement I and Statement II are correct.
(B) Both Statement I and Statement II are incorrect.
(C) Statement I is correct but Statement II is incorrect.
(D) Statement I is incorrect but Statement II is correct.

Step-by-step solution ► [prepwiser.in/questions/PvgAb8LVPt](https://www.prepwiser.in/questions/PvgAb8LVPt)

Q71 JEE Main 2022 · 27 Jun · Shift 2

The correct order of increasing ionic radii is

- (A) $\text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-} < \text{N}^{3-}$
(B) $\text{N}^{3-} < \text{O}^{2-} < \text{F}^- < \text{Na}^+ < \text{Mg}^{2+}$
(C) $\text{F}^- < \text{Na}^+ < \text{O}^{2-} < \text{Mg}^{2+} < \text{N}^{3-}$
(D) $\text{Na}^+ < \text{F}^- < \text{Mg}^{2+} < \text{O}^{2-} < \text{N}^{3-}$

Step-by-step solution ► [prepwiser.in/questions/Bt8VL6Y7jx](https://www.prepwiser.in/questions/Bt8VL6Y7jx)

Q72 JEE Main 2022 · 27 Jun · Shift 1

Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R).

Assertion (A) : The ionic radii of O^{2-} and Mg^{2+} are same.

Reason (R) : Both O^{2-} and Mg^{2+} are isoelectronic species.

In the light of the above statements, choose the correct answer from the options given below.

- (A) Both (A) and (R) are true and (R) is the correct explanation of (A).
(B) Both (A) and (R) are true but (R) is not the correct explanation of (A).
(C) (A) is true but (R) is false.
(D) (A) is false but (R) is true.

Step-by-step solution ► [prepwiser.in/questions/kFrAxmLgdV](https://www.prepwiser.in/questions/kFrAxmLgdV)

Q73 JEE Main 2021 · 27 Aug · Shift 2

The correct order of ionic radii for the ions, P^{3-} , S^{2-} , Ca^{2+} , K^+ , Cl^- is :

- (A) $\text{P}^{3-} > \text{S}^{2-} > \text{Cl}^- > \text{K}^+ > \text{Ca}^{2+}$
- (B) $\text{Cl}^- > \text{S}^{2-} > \text{P}^{3-} > \text{Ca}^{2+} > \text{K}^+$
- (C) $\text{P}^{3-} > \text{S}^{2-} > \text{Cl}^- > \text{Ca}^{2+} > \text{K}^+$
- (D) $\text{K}^+ > \text{Ca}^{2+} > \text{P}^{3-} > \text{S}^{2-} > \text{Cl}^-$

[Step-by-step solution ► prepwiser.in/questions/ATQLm5Lyr7](https://www.prepwiser.in/questions/ATQLm5Lyr7)

Q74 JEE Main 2021 · 25 Jul · Shift 1

The ionic radii of K^+ , Na^+ , Al^{3+} and Mg^{2+} are in the order:

- (A) $\text{Na}^+ < \text{K}^+ < \text{Mg}^{2+} < \text{Al}^{3+}$
- (B) $\text{Al}^{3+} < \text{Mg}^{2+} < \text{K}^+ < \text{Na}^+$
- (C) $\text{Al}^{3+} < \text{Mg}^{2+} < \text{Na}^+ < \text{K}^+$
- (D) $\text{K}^+ < \text{Al}^{3+} < \text{Mg}^{2+} < \text{Na}^+$

[Step-by-step solution ► prepwiser.in/questions/9wNaAaE-J9](https://www.prepwiser.in/questions/9wNaAaE-J9)

Q75 JEE Main 2021 · 25 Jul · Shift 2

The ionic radii of F^- and O^{2-} respectively are $1.33 \text{ \AA}$ and $1.4 \text{ \AA}$, while the covalent radius of N is $0.74 \text{ \AA}$.

The correct statement for the ionic radius of N^{3-} from the following is :

- (A) It is smaller than F^- and N
- (B) It is bigger than O^{2-} and F^-
- (C) It is bigger than F^- and N, but smaller than of O^{2-}
- (D) It is smaller than O^{2-} and F^- , but bigger than of N

[Step-by-step solution ► prepwiser.in/questions/Kd9T1EQfcA](https://www.prepwiser.in/questions/Kd9T1EQfcA)

Q76 JEE Main 2021 · 18 Mar · Shift 1

The ionic radius of Na^+ ions is $1.02 \text{ \AA}$. The ionic radii (in $\text{ \AA}$) of Mg^{2+} and Al^{3+} , respectively, are

- (A) 1.05 and 0.99
- (B) 0.72 and 0.54
- (C) 0.85 and 0.99
- (D) 0.68 and 0.72

[Step-by-step solution ► prepwiser.in/questions/XE7F1nrHvb](https://www.prepwiser.in/questions/XE7F1nrHvb)

Q77 JEE Main 2020 · 5 Sep · Shift 2

The correct order of the ionic radii of O^{2-} , N^{3-} , F^- , Mg^{2+} , Na^+ and Al^{3+} is :

- (A) $\text{N}^{3-} < \text{O}^{2-} < \text{F}^- < \text{Na}^+ < \text{Mg}^{2+} < \text{Al}^{3+}$
- (B) $\text{N}^{3-} < \text{F}^- < \text{O}^{2-} < \text{Mg}^{2+} < \text{Na}^+ < \text{Al}^{3+}$
- (C) $\text{Al}^{3+} < \text{Na}^+ < \text{Mg}^{2+} < \text{O}^{2-} < \text{F}^- < \text{N}^{3-}$
- (D) $\text{Al}^{3+} < \text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-} < \text{N}^{3-}$

[Step-by-step solution ► prepwiser.in/questions/iq4C_RV139](https://www.prepwiser.in/questions/iq4C_RV139)

Q78 JEE Main 2020 · 4 Sep · Shift 1

The ionic radii of O^{2-} , F^- , Na^+ and Mg^{2+} are in the order :

(A) $F^- > O^{2-} > Na^+ > Mg^{2+}$

(B) $Mg^{2+} > Na^+ > F^- > O^{2-}$

(C) $O^{2-} > F^- > Mg^{2+} > Na^+$

(D) $O^{2-} > F^- > Na^+ > Mg^{2+}$

[Step-by-step solution ► prepwiser.in/questions/mx2GHy4cIU](https://www.prepwiser.in/questions/mx2GHy4cIU)

Q79 JEE Main 2020 · 2 Sep · Shift 1

In general the property (magnitudes only) that show an opposite trend in comparison to other properties across a period is

(A) Electron gain enthalpy

(B) Electronegativity

(C) Ionization enthalpy

(D) Atomic radius

[Step-by-step solution ► prepwiser.in/questions/xFYHeukrTB](https://www.prepwiser.in/questions/xFYHeukrTB)

Q80 JEE Main 2020 · 8 Jan · Shift 2

The increasing order of the atomic radii of the following elements is :-

(a) C (b) O

(c) F (d) Cl

(e) Br

(A) (a) < (b) < (c) < (d) < (e)

(B) (c) < (b) < (a) < (d) < (e)

(C) (b) < (c) < (d) < (a) < (e)

(D) (d) < (c) < (b) < (a) < (e)

[Step-by-step solution ► prepwiser.in/questions/nYh_hW9h0V](https://www.prepwiser.in/questions/nYh_hW9h0V)

Q81 JEE Main 2020 · 7 Jan · Shift 1

The atomic radius of Ag is closed to :

(A) Au

(B) Cu

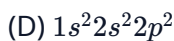
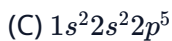
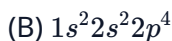
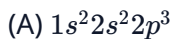
(C) Hg

(D) Ni

[Step-by-step solution ► prepwiser.in/questions/F6WlUcpH5r](https://www.prepwiser.in/questions/F6WlUcpH5r)

Q82 JEE Main 2025 · 2 Apr · Shift 2

Electronic configuration of four elements A, B, C and D are given below :



Which of the following is the correct order of increasing electronegativity (Pauling's scale)?



[Step-by-step solution ► prepwiser.in/questions/UPdzOh_VO8](https://www.prepwiser.in/questions/UPdzOh_VO8)

Q83 JEE Main 2025 · 22 Jan · Shift 1

Which of the following electronegativity order is incorrect?



[Step-by-step solution ► prepwiser.in/questions/VFbgUnKMT3](https://www.prepwiser.in/questions/VFbgUnKMT3)

Q84 JEE Main 2024 · 8 Apr · Shift 2

Identify the correct statements about p-block elements and their compounds.

(A) Non metals have higher electronegativity than metals.

(B) Non metals have lower ionisation enthalpy than metals.

(C) Compounds formed between highly reactive nonmetals and highly reactive metals are generally ionic.

(D) The non-metal oxides are generally basic in nature.

(E) The metal oxides are generally acidic or neutral in nature.

Choose the correct answer from the options given below :

(A) (B) and (D) only

(B) (B) and (E) only

(C) (D) and (E) only

(D) (A) and (C) only

[Step-by-step solution ► prepwiser.in/questions/bf7qhhxYrF](https://www.prepwiser.in/questions/bf7qhhxYrF)

Q85 JEE Main 2024 · 29 Jan · Shift 1

Given below are two statements :

Statement I : The electronegativity of group 14 elements from Si to Pb, gradually decreases.

Statement II : Group 14 contains non-metallic, metallic, as well as metalloid elements.

In the light of the above statements, choose the **most appropriate** from the options given below :

- (A) Statement I is false but Statement II is true
- (B) Both Statement I and Statement II are true
- (C) Both Statement I and Statement II are false
- (D) Statement I is true but Statement II is false

[Step-by-step solution ► prepwiser.in/questions/jm-z9ZSxow](https://www.prepwiser.in/questions/jm-z9ZSxow)

Q86 JEE Main 2023 · 8 Apr · Shift 1

The correct order of electronegativity for given elements is:

- (A) $C > P > At > Br$
- (B) $Br > C > At > P$
- (C) $Br > P > At > C$
- (D) $P > Br > C > At$

[Step-by-step solution ► prepwiser.in/questions/6IWMUnW51a](https://www.prepwiser.in/questions/6IWMUnW51a)

Q87 JEE Main 2020 · 9 Jan · Shift 1

The acidic, basic and amphoteric oxides, respectively, are :

- (A) Cl_2O , CaO , P_4O_{10}
- (B) N_2O_3 , Li_2O , Al_2O_3
- (C) MgO , Cl_2O , Al_2O_3
- (D) Na_2O , SO_3 , Al_2O_3

[Step-by-step solution ► prepwiser.in/questions/01fgLYiIB6](https://www.prepwiser.in/questions/01fgLYiIB6)

Anomalous Behaviour and Diagonal Relationship · 5 PYQs

Q88 JEE Main 2024 · 4 Apr · Shift 1

Number of elements from the following that CANNOT form compounds with valencies which match with their respective group valencies is _____. B, C, N, S, O, F, P, Al, Si

- (A) 7
- (B) 3
- (C) 5
- (D) 6

[Step-by-step solution ► prepwiser.in/questions/YJEdzOpe1W](https://www.prepwiser.in/questions/YJEdzOpe1W)

Q89 JEE Main 2024 · 29 Jan · Shift 2

Anomalous behavior of oxygen is due to its

- (A) large size and low electronegativity
- (B) small size and high electronegativity
- (C) small size and low electronegativity
- (D) large size and high electronegativity

[Step-by-step solution ► prepwiser.in/questions/bXCnJq01n5](https://www.prepwiser.in/questions/bXCnJq01n5)

Q90 JEE Main 2022 · 27 Jul · Shift 1

Given below are two statements.

Statement I: The chlorides of Be and Al have Cl-bridged structure. Both are soluble in organic solvents and act as Lewis bases.

Statement II: Hydroxides of Be and Al dissolve in excess alkali to give beryllate and aluminate ions.

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 true but Statement II is false.

(D) Statement I is false but Statement II is true.

[Step-by-step solution ► prepwisser.in/questions/i0fpZfRQ7t](https://www.prepwisser.in/questions/i0fpZfRQ7t)

Q91 JEE Main 2021 · 20 Jul · Shift 2

Outermost electronic configuration of a group 13 element, E, is $4s^2, 4p^1$. The electronic configuration of an element of p-block period-five placed diagonally to element, E is :

(A) $[Kr] 3d^{10} 4s^2 4p^2$

(B) $[Ar] 3d^{10} 4s^2 4p^2$

(C) $[Xe] 5d^{10} 6s^2 6p^2$

(D) $[Kr] 4d^{10} 5s^2 5p^2$

[Step-by-step solution ► prepwisser.in/questions/I_Ri35AKoj](https://www.prepwisser.in/questions/I_Ri35AKoj)

Q92 JEE Main 2020 · 3 Sep · Shift 2

Among the statements (I – IV), the correct ones are:

(I) Be has smaller atomic radius compared to Mg.

(II) Be has higher ionization enthalpy than Al.

(III) Charge/radius ratio of Be is greater than that of Al.

(IV) Both Be and Al form mainly covalent compounds.

(A) (I), (II) and (IV)

(B) (II), (III) and (IV)

(C) (I), (III) and (IV)

(D) (I), (II) and (III)

[Step-by-step solution ► prepwisser.in/questions/8qwXIfITUj](https://www.prepwisser.in/questions/8qwXIfITUj)

Answer key — Periodic Table & Periodicity

Numbers match the question numbers above. For full working, open the solution link under each question.

1	B	2	D	3	B	4	C	5	B	6	B	7	D	8	C
9	C	10	B	11	B	12	B	13	C	14	C	15	A	16	A
17	D	18	D	19	A	20	11	21	C	22	B	23	A	24	D
25	B	26	C	27	C	28	A	29	D	30	D	31	A	32	A
33	D	34	D	35	C	36	D	37	C	38	B	39	C	40	D
41	A	42	D	43	C	44	C	45	C	46	C	47	B	48	D
49	B	50	B	51	C	52	B	53	C	54	C	55	A	56	B
57	D	58	D	59	B	60	D	61	A	62	D	63	D	64	D
65	B	66	A	67	C	68	C	69	A	70	D	71	A	72	D
73	A	74	C	75	B	76	B	77	D	78	D	79	D	80	B
81	A	82	A	83	C	84	D	85	A	86	B	87	B	88	B
89	B	90	D	91	D	92	A								

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