

JEE MAIN P-BLOCK ELEMENTS (GROUP 15–18) — PYQS

Max. Marks: 64

Questions: 16

Section A (MCQ) — 15 questions

Q.1 Find the correct statements related to group 15 hydrides.

- A. Reducing nature increases from NH_3 to BiH_3
- B. Tendency to donate lone pair of electrons decreases from NH_3 to BiH_3
- C. The stability of hydrides decreases from NH_3 to BiH_3
- D. EH bond angle decreases from NH_3 to SbH_3 (E = Elements of group 15)

Choose the correct answer from the options given below : [JEE Main 2026 (Online) 8th April Evening Shift]

- (1) A and B only (2) B and C only
- (3) A, B, C and D (4) A, C and D Only

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Q.2 Correct statements from the following are:

- A. Nitrogen in oxidation states from +1 to +4 disproportionates in acid medium.
- B. Nitrogen has the ability to form $d\pi - p\pi$ multiple bonds with itself and other elements with small size and high electronegativity.
- C. N-N single bond is stronger than P-P single bond.
- D. Nitrogen has highest density in its group due to small size.
- E. The maximum covalency of nitrogen is four since it has only four valence orbitals for bonding.

Choose the correct answer from the options given below: [JEE Main 2026 (Online) 5th April Morning Shift]

- (1) B, C and D Only (2) C, D and E Only
- (3) A, C and E Only (4) A and E Only

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Q.3 Given below are two statements :

Statement-I: The covalency of oxygen is generally two but it can exceed upto four. The oxidation state of oxygen in SO_2 is -2 and in OF_2 it is $+2$.

Statement-II: The anomalous behaviour of oxygen when compared to the other elements of group 16 is due to its small size and high electronegativity.

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

[JEE Main 2026 (Online) 4th April Morning Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

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Q.4 Regarding the hydrides of group 15 elements EH_3 ($\text{E} = \text{N}, \text{P}, \text{As}, \text{Sb}$), select the correct statement from the following :

- A. The stability of hydrides decreases down the group.
- B. The basicity of hydrides decreases down the group.
- C. The reducing character increases down the group.
- D. The boiling point increases down the group.

Choose the correct answer from the options given below :

[JEE Main 2026 (Online) 28th January Morning Shift]

- (1) A, B & C only (2) A, B, C & D
- (3) A & D only (4) B & C only

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Q.5 Given below are two statements :

Statement-I: The increasing order of boiling point of hydrogen halides is $\text{HCl} < \text{HBr} < \text{HI} < \text{HF}$.

Statement-II: The increasing order of melting point of hydrogen halides is $\text{HCl} < \text{HBr} < \text{HF} < \text{HI}$.

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

[JEE Main 2026 (Online) 28th January Evening Shift]

- (1) Statement-I is false but Statement-II is true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Both Statement-I and Statement-II are true

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Q.6 One mole of $\text{Cl}_2(\text{g})$ was passed into 2 L of cold 2 M KOH solution. After the reaction, the concentrations of Cl^- , ClO^- and OH^- are respectively (assume volume remains constant)

[JEE Main 2026 (Online) 24th January Evening Shift]

- (1) 0.5 M, 0.5 M, 0.5 M (2) 1 M, 1 M, 1 M
 (3) 0.5 M, 0.5 M, 1 M (4) 0.75 M, 0.75 M, 1 M

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Q.7 Elements X and Y belong to Group 15. The difference between the electronegativity values of 'X' and phosphorus is higher than that of the difference between phosphorus and 'Y'. 'X' & 'Y' are respectively

[JEE Main 2026 (Online) 23rd January Evening Shift]

- (1) As & Bi (2) Bi & N (3) N & As (4) As & Sb

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Q.8 Given below are two statements :

Statement-I: The halogen that makes longest bond with hydrogen in HX, has the smallest covalent radius in its group.

Statement-II: A group 15 element's hydride EH_3 has the lowest boiling point among corresponding hydrides of other group 15 elements. The maximum covalency of that element E is 4.

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

[JEE Main 2026 (Online) 22nd January Morning Shift]

- (1) Statement-I is true but Statement-II is false
 (2) Statement-I is false but Statement-II is true
 (3) Both Statement-I and Statement-II are true
 (4) Both Statement-I and Statement-II are false

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Q.9 Given below are two statements :

Statement-I: Elements 'X' and 'Y' are the most and least electronegative elements, respectively among N, As, Sb and P. The nature of the oxides X_2O_3 and Y_2O_3 is acidic and amphoteric, respectively.

Statement-II: BCl_3 is covalent in nature and gets hydrolysed in water. It produces $[\text{B}(\text{OH})_4]^-$ and $[\text{B}(\text{H}_2\text{O})_6]^{3+}$ in aqueous medium.

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

[JEE Main 2026 (Online) 22nd January Evening Shift]

- (1) Statement-I is false but Statement-II is true
 (2) Statement-I is true but Statement-II is false
 (3) Both Statement-I and Statement-II are false
 (4) Both Statement-I and Statement-II are true

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Q.10 Given below are two statements :

Statement-I: The correct order in terms of bond dissociation enthalpy is $\text{Cl}_2 > \text{Br}_2 > \text{F}_2 > \text{I}_2$.

Statement-II: The correct trend in the covalent character of the metal halides is $[\text{SnCl}_4 > \text{SnCl}_2]$,

$[\text{PbCl}_4 > \text{PbCl}_2]$ and $[\text{UF}_4 > \text{UF}_6]$.

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

[JEE Main 2026 (Online) 21st January Evening Shift]

- (1) Both Statement-I and Statement-II are true
 (2) Both Statement-I and Statement-II are false
 (3) Statement-I is false but Statement-II is true
 (4) Statement-I is true but Statement-II is false

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Q.11 Given below are two statements:

Statement-I: H_2Se is more acidic than H_2Te

Statement-II: H_2Se has higher bond enthalpy for dissociation than H_2Te

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

[JEE Main 2025 (Online) 8th April Evening Shift]

- (1) Both Statement-I and Statement-II are true
 (2) Statement-I is true but Statement-II is false
 (3) Both Statement-I and Statement-II are false
 (4) Statement-I is false but Statement-II is true

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Q.12 Given below are two statements:

Statement-I: Nitrogen forms oxides with +1 to +5 oxidation states due to the formation of $\pi-\pi$ bond with oxygen.

Statement-II: Nitrogen does not form halides with +5 oxidation state due to the absence of d-orbital in it.

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

[JEE Main 2025 (Online) 4th April Morning Shift]

- (1) Both Statement-I and Statement-II are true
 (2) Statement-I is true but Statement-II is false
 (3) Statement-I is false but Statement-II is true
 (4) Both Statement-I and Statement-II are False

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Q.13 Given below are two statements :

Statement-I: The N–N single bond is weaker and longer than that of P–P single bond.

Statement-II: Compounds of group 15 elements in +3 oxidation states readily undergo disproportionation reactions.

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

[JEE Main 2025 (Online) 3rd April Morning Shift]

- (1) Statement-I is false but Statement-II is true
 (2) Both Statement-I and Statement-II are true
 (3) Both Statement-I and Statement-II are false
 (4) Statement-I is true but Statement-II is false

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Q.14 The property/properties that show irregularity in first four elements of group-17 is/are

- A. Covalent radius B. Electron affinity
 C. Ionic radius D. First ionization energy

Choose the correct answer from the options given below : [JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) A, B, C and D (2) A and C only
 (3) B only (4) B and D only

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Q.15 The nature of oxide (TeO_2) and hydride (TeH_2) formed by Te, respectively are:

[JEE Main 2025 (Online) 2nd April Evening Shift]

- (1) Reducing and basic (2) Reducing and acidic
 (3) Oxidising and acidic (4) Oxidising and basic

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Section B (Numerical) — 1 question

Q.16 A group 15 element forms $d\pi - d\pi$ bond with transition metals. It also forms a hydride, which is the strongest base among the hydrides of other group members that form $d\pi - d\pi$ bond.

The atomic number of the element is _____.

[JEE Main 2025 (Online) 28th January Evening Shift]

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ANSWER KEY

Section A (MCQ) — 15 questions

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	3	4	1	1	4	3	3	4	2	4	4
Ques.	12	13	14	15							
Ans.	1	3	3	3							

Section B (Numerical) — 1 question

Ques.	16										
Ans.	15										