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

Max. Marks: 36 **Questions:** 9

Section A (MCQ) — 8 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. HEH 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 dπ - pπ 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 Regarding the hydrides of group 15 elements EH_3 (E = N, P, As, 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.4 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.5 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.6 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 $[B(OH)_4]^-$ and $[B(H_2O)_6]^{3+}$ 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.7 Given below are two statements:

Statement-I: Nitrogen forms oxides with +1 to +5 oxidation states due to the formation of pπ–pπ 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.8 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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Section B (Numerical) — 1 question

Q.9 A group 15 element forms dπ − dπ bond with transition metals. It also forms a hydride, which is the strongest base among the hydrides of other group members that form dπ − dπ 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) — 8 questions

Ques.	1	2	3	4	5	6	7	8			
Ans.	**3**	**4**	**1**	**3**	**4**	**2**	**1**	**3**			

Section B (Numerical) — 1 question

Ques.	9										
Ans.	**15**										