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NEET P-BLOCK ELEMENTS (GROUP 13 & 14) — GROUP 13 ELEMENTS (BORON FAMILY) — PYQS

Max. Marks: 64 **Questions:** 16

Section A (MCQ) — 16 questions

Q.1 The correct statement is [RE-NEET (UG) 2026]

(1) Aluminium has five valence orbitals.

(2) Boron has a maximum covalency of four.

(3) Beryllium has three valence orbitals.

(4) Magnesium has a maximum covalency of four.

Scan or tap for the full solution

Q.2 Taking stability as the factor, which one of the following represents correct relationship? [NEET (UG) 2023]

(1) $InI_3 > InI$ (2) $AlCl > AlCl_3$

(3) $TlI > TlI_3$ (4) $TlCl_3 > TlCl$

Scan or tap for the full solution

Q.3 Which of the following statements is not correct about diborane? [NEET (UG) 2022]

(1) There are two 3-centre-2-electron bonds.

(2) The four terminal B-H bonds are two centre two electron bonds.

(3) The four terminal hydrogen atoms and the two boron atoms lie in one plane.

(4) Both the boron atoms are sp^2 hybridised.

Scan or tap for the full solution

Q.4 Match **List-I** with **List-II** :

List-I (Compounds)		List-II (Molecular formula)	
a.	Borax	i.	$NaBO_2$
b.	Kernite	ii.	$Na_2B_4O_7{\cdot}4H_2O$
c.	Orthoboric acid	iii.	H_3BO_3
d.	Borax bead	iv.	$Na_2B_4O_7{\cdot}10H_2O$

Choose the correct answer from the options given below : [NEET (UG) 2022 (Phase 2)]

(1) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

(2) (a)-(iv), (b)-(ii), (c)-(iii), (d)-(i)

(3) (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)

(4) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)

Scan or tap for the full solution

Q.5 $Na_2B_4O_7 \xrightarrow{heat} X + NaBO_2$

in the above reaction the product "X" is : [NEET (UG) 2022 (Phase 2)]

(1) NaB_3O_5 (2) H_3BO_3 (3) B_2O_3 (4) $Na_2B_2O_5$

Scan or tap for the full solution

Q.6 The correct order of atomic radii in group 13 elements is [NEET 2018]

(1) B < Al < In < Ga < Tl

(2) B < Al < Ga < In < Tl

(3) B < Ga < Al < Tl < In

(4) B < Ga < Al < In < Tl

Scan or tap for the full solution

Q.7 Which one of the following elements is unable to form MF_6^{3-} ion? [NEET 2018]

(1) Ga (2) Al (3) B (4) In

Scan or tap for the full solution

Q.8 Boric acid is an acid because its molecule [NEET 2016 (Phase 2)]

(1) contains replaceable H^+ ion

(2) gives up a proton

(3) accepts OH^- from water releasing proton

(4) combines with proton from water molecule.

Scan or tap for the full solution

Q.9 AlF_3 is soluble in HF only in presence of KF. It is due to the formation of [NEET 2016 (Phase 2)]

(1) $K_3[AlF_3H_3]$ (2) $K_3[AlF_6]$

(3) AlH_3 (4) $K[AlF_3H]$

Scan or tap for the full solution

Q.10 The stability of +1 oxidation state among Al, Ga, In and Tl increases in the sequence [AIPMT 2015]

(1) Al < Ga < In < Tl (2) Tl < In < Ga < Al

(3) In < Tl < Ga < Al (4) Ga < In < Al < Tl

Scan or tap for the full solution

Q.11 Which of the following is electron-deficient ? [NEET 2013]

(1) $(BH_3)_2$ (2) PH_3 (3) $(CH_3)_2$ (4) $(SiH_3)_2$

Scan or tap for the full solution

Q.12 Which of the following structure is similar to graphite? [NEET 2013]

(1) B_4C (2) B_2H_6 (3) BN (4) B

Scan or tap for the full solution

Q.13 The tendency of BF_3, BCl_3 and BBr_3 to behave as Lewis acid decreases in the sequence [AIPMT 2010 (Prelims)]

(1) $BCl_3 > BF_3 > BBr_3$ (2) $BBr_3 > BCl_3 > BF_3$

(3) $BBr_3 > BF_3 > BCl_3$ (4) $BF_3 > BCl_3 > BBr_3$

Scan or tap for the full solution

Q.14 The stability of +1 oxidation state among Al, Ga, In and Tl increases in the sequence [AIPMT 2009]

(1) Al < Ga < In < Tl (2) Tl < In < Ga < Al

(3) In < Tl < Ga < Al (4) Ga < In < Al < Tl

Scan or tap for the full solution

Q.15 Which one of the following compounds is not a protonic acid? [AIPMT 2003]

(1) $B(OH)_3$ (2) $PO(OH)_3$

(3) $SO(OH)_2$ (4) $SO_2(OH)_2$

Scan or tap for the full solution

Q.16 Which compound is electron deficient? [AIPMT 2000]

(1) PCl_3 (2) BCl_3 (3) CCl_4 (4) PCl_5

Scan or tap for the full solution

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	3	4	2	3	4	3	3	2	1	1
Ques.	12	13	14	15	16						
Ans.	3	2	1	1	2						