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

Max. Marks: 128 **Questions:** 32

Section A (MCQ) — 32 questions

Q.1 Identify the incorrect statement from the following: [NEET (UG) 2026]

(1) Oxygen exhibits only −2 oxidation state.

(2) The order of catenation property of Group 14 elements is $C \gg Si > Ge \approx Sn$.

(3) Carbon has the ability to form pπ–pπ multiple bond with itself.

(4) ECl_3 (E = B and Al) is a monomer when E = B and a dimer when E = Al.

Scan or tap for the full solution

Q.2 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.

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Q.3 Match **List I** with **List II**:

List I		List II	
A.	Coke	I.	Carbon atoms are sp^3 hybridised
B.	Diamond	II.	Used as a dry lubricant
C.	Fullerene	III.	Used as a reducing agent
D.	Graphite	IV.	Cage like molecules

Choose the correct answer from the options given below: [NEET (UG) 2023]

(1) A-IV, B-I, C-II, D-III (2) A-III, B-I, C-IV, D-II

(3) A-III, B-IV, C-I, D-II (4) A-II, B-IV, C-I, D-III

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Q.4 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) $TlCl_3 > TlCl$

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Q.5 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.

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Q.6 Choose the correct statement: [NEET (UG) 2022]

(1) Diamond and graphite have two dimensional network.

(2) Diamond is covalent and graphite is ionic.

(3) Diamond is sp^3 hybridized and graphite is sp^2 hybridized.

(4) Both diamond and graphite are used as dry lubricants.

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Q.7 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)

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Q.8 $Na_2B_4O_7 \xrightarrow{heat} X + NaBO_2$

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) $Na_2B_2O_5$

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Q.9 Identify the correct statements from the following :

A. $CO_2(g)$ is used as refrigerant for ice-cream and frozen food.

B. The structure of C_{60} contains twelve six-carbon rings and twenty five-carbon rings.

C. ZSM-5, a type of zeolite, is used to convert alcohols into gasoline.

D. CO is colourless and odourless gas.

[NEET (UG) 2020]

(1) A and C only (2) B and C only

(3) C and D only (4) A, B and C only

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Q.10 Which of the following is **incorrect** statement? [NEET (UG) 2019]

(1) GeX_4 (X = F, Cl, Br, I) is more stable than GeX_2

(2) SnF_4 is ionic in nature

(3) PbF_4 is covalent in nature

(4) $SiCl_4$ is easily hydrolysed

Scan or tap for the full solution

Q.11 Which of the following species is **not** stable? [NEET (UG) 2019]

(1) $[Sn(OH)_6]^{2-}$ (2) $[SiCl_6]^{2-}$

(3) $[SiF_6]^{2-}$ (4) $[GeCl_6]^{2-}$

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Q.12 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.13 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.14 It is because of inability of ns^2 electrons of the valence shell to participate in bonding that [NEET 2017]

(1) Sn^{2+} is oxidising while Pb^{4+} is reducing

(2) Sn^{2+} and Pb^{2+} are both oxidising and reducing

(3) Sn^{4+} is reducing while Pb^{4+} is oxidising

(4) Sn^{2+} is reducing while Pb^{4+} is oxidising

Scan or tap for the full solution

Q.15 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.16 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.17 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.18 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.19 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.20 Which of these is not a monomer for a high molecular mass silicone polymer? [NEET 2013]

(1) Me_3SiCl (2) $PhSiCl_3$ (3) $MeSiCl_3$ (4) Me_2SiCl_2

Scan or tap for the full solution

Q.21 The basic structural unit of silicates is [NEET 2013]

(1) SiO_3^{2-} (2) SiO_4^{2-} (3) SiO^- (4) SiO_4^{4-}

Scan or tap for the full solution

Q.22 Which statement is wrong? [NEET 2013 (Karnataka)]

(1) Beryl is an example of cyclic silicate.

(2) Mg_2SiO_4 is orthosilicate.

(3) Basic structural unit in silicates is the SiO_4 tetrahedron.

(4) Feldspars are not aluminosilicates.

Scan or tap for the full solution

Q.23 Name the type of the structure of silicate in which one oxygen atom of $[SiO_4]^{4-}$ is shared. [AIPMT 2011 (Prelims)]

(1) Linear chain silicate (2) Sheet silicate
(3) Pyrosilicate (4) Three dimensional

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Q.24 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.25 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.26 The straight chain polymer is formed by [AIPMT 2009]

(1) hydrolysis of CH_3SiCl_3 followed by condensation polymerisation
(2) hydrolysis of $(CH_3)_4Si$ by addition polymerisation
(3) hydrolysis of $(CH_3)_2SiCl_2$ followed by condensation polymerisation
(4) hydrolysis of $(CH_3)_3SiCl$ followed by condensation polymerisation

Scan or tap for the full solution

Q.27 Which of the following oxidation states are the most characteristic for lead and tin respectively? [AIPMT 2007]

(1) +2, +4 (2) +4, +4 (3) +2, +2 (4) +4, +2

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Q.28 Which of the following anions is present in the chain structure of silicates? [AIPMT 2007]

(1) $(Si_2O_5^{2-})_n$ (2) $(SiO_3^{2-})_n$
(3) SiO_4^{4-} (4) $Si_2O_7^{6-}$

Scan or tap for the full solution

Q.29 Which one of the following statements about the zeolite is false? [AIPMT 2004]

(1) They are used as cation exchangers.
(2) They have open structure which enables them to take up small molecules.
(3) Zeolites are aluminosilicates having three dimensional network.
(4) Some of the SiO_4^{4-} units are replaced by AlO_4^{5-} and AlO_6^{9-} ions in zeolites.

Scan or tap for the full solution

Q.30 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.31 $PbO_2 \longrightarrow PbO;\ \Delta G_{298} < 0$
$SnO_2 \longrightarrow SnO;\ \Delta G_{298} > 0$
Most probable oxidation state of Pb and Sn will be [AIPMT 2001]

(1) Pb^{4+}, Sn^{4+} (2) Pb^{4+}, Sn^{2+}
(3) Pb^{2+}, Sn^{2+} (4) Pb^{2+}, Sn^{4+}

Scan or tap for the full solution

Q.32 Which compound is electron deficient? [AIPMT 2000]

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

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	**1**	**2**	**2**	**3**	**4**	**3**	**2**	**3**	**3**	**3**	**2**
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	**4**	**3**	**4**	**3**	**2**	**1**	**1**	**3**	**1**	**4**	**4**
Ques.	23	24	25	26	27	28	29	30	31	32	
Ans.	**3**	**2**	**1**	**3**	**1**	**2**	**4**	**1**	**4**	**2**	