

JEE MAIN P-BLOCK ELEMENTS (GROUP 13 & 14) — GROUP 14 ELEMENTS (CARBON FAMILY) — PYQS

Max. Marks: 24

Questions: 6

Section A (MCQ) — 6 questions

Q.1 Choose the **INCORRECT** statement

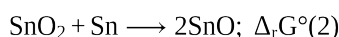
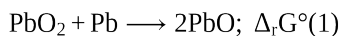
[JEE Main 2026 (Online) 24th January Evening Shift]

- (1) Carbon exhibits negative oxidation states along with +4 and +2.
- (2) Carbon cannot exceed its covalency more than four.
- (3) Among the isotopes of carbon, ^{13}C is a radioactive isotope.
- (4) CO_2 is the most acidic oxide among the dioxides of group 14 elements.

Scan or tap for the full solution



Q.2 It is noticed that Pb^{2+} is more stable than Pb^{4+} but Sn^{2+} is less stable than Sn^{4+} . Observe the following reactions.



Identify the correct set from the following

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

- (1) $\Delta_r G^\circ(1) > 0$; $\Delta_r G^\circ(2) < 0$
- (2) $\Delta_r G^\circ(1) < 0$; $\Delta_r G^\circ(2) > 0$
- (3) $\Delta_r G^\circ(1) < 0$; $\Delta_r G^\circ(2) < 0$
- (4) $\Delta_r G^\circ(1) > 0$; $\Delta_r G^\circ(2) > 0$

Scan or tap for the full solution



Q.3 Given below are two statements :

Statement-I: The number of pairs among $[\text{SiO}_2, \text{CO}_2]$, $[\text{SnO}, \text{SnO}_2]$, $[\text{PbO}, \text{PbO}_2]$ and $[\text{GeO}, \text{GeO}_2]$, which contain oxides that are both amphoteric is 2.

Statement-II: BF_3 is an electron deficient molecule, can act as a Lewis acid, forms adduct with NH_3 and has a trigonal planar geometry.

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

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

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

Scan or tap for the full solution



Q.4 The group 14 elements A and B have the first ionisation enthalpy values of 708 and 715 kJ mol^{-1} respectively. The above values are lowest among their group members. The nature of their ions A^{2+} and B^{4+} respectively is

[JEE Main 2025 (Online) 7th April Morning Shift]

- (1) both reducing
- (2) oxidising and reducing
- (3) both oxidising
- (4) reducing and oxidising

Scan or tap for the full solution



Q.5 The standard reduction potential values of some of the p-block ions are given below. Predict the one with the strongest oxidising capacity.

[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) $E^\circ_{\text{Sn}^{4+}/\text{Sn}^{2+}} = +0.15 \text{ V}$
- (2) $E^\circ_{\text{Al}^{3+}/\text{Al}} = -1.66 \text{ V}$
- (3) $E^\circ_{\text{Pb}^{4+}/\text{Pb}^{2+}} = +1.67 \text{ V}$
- (4) $E^\circ_{\text{Tl}^{3+}/\text{Tl}} = +1.26 \text{ V}$

Scan or tap for the full solution



Q.6 Consider the following elements In, Tl, Al, Pb, Sn and Ge. The most stable oxidation states of elements with highest and lowest first ionisation enthalpies, respectively, are

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

- (1) +4 and +1
- (2) +4 and +3
- (3) +1 and +4
- (4) +2 and +3

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6					
Ans.	3	2	3	4	3	2					