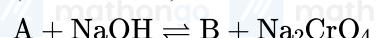


Q1. 21 January Shift 1

Consider the following reactions.



(Hot solution)



In the above reactions, A, B and X are respectively.

(1) $\text{Na}_2[\text{Pb}(\text{OH})_2]$, PbCrOO_4 and $(\text{NH}_4)_2[\text{Pb}(\text{CH}_3\text{COO})_4]$

(2) $\text{Na}_2[\text{Pb}(\text{OH})_2]$, PbCrO_4 and $[\text{Pb}(\text{NH}_3)_4]\text{SO}_4$

(3) PbCrO_4 , $\text{Na}_2[\text{Pb}(\text{OH})_4]$ and $(\text{NH}_4)_2[\text{Pb}(\text{CH}_3\text{COO})_4]$

(4) PbCrO_4 , $\text{Na}_2[\text{Pb}(\text{OH})_4]$ and $[\text{Pb}(\text{NH}_3)_4]\text{SO}_4$

Q2. 21 January Shift 1

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 :

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

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

Q3. 22 January Shift 2

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 :

(1) Both Statement I and Statement II are false (2) Both Statement I and Statement II are true

(3) Statement I is true but Statement II is false (4) Statement I is false but Statement II is true

Q4. 23 January Shift 1

The correct statements from the following are :

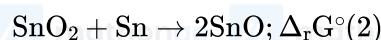
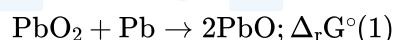
- A. Ionic radii of trivalent cations of group 13 elements decreases down the group.
- B. Electronegativity of group 13 elements decreases down the group.
- C. Among the group 13 elements, Boron has highest first ionisation enthalpy.
- D. The trichloride and triiodide of group 13 elements are covalent in nature.

Choose the correct answer from the options given below :

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

Q5. 23 January Shift 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.

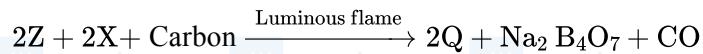
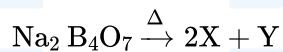


Identify the correct set from the following

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

Q6. 28 January Shift 2

Consider the following reactions



The oxidation states of Cu in Z and Q, respectively are :

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

ANSWER KEYS

1. (3)

2. (2)

3. (3)

4. (1)

5. (3)

6. (4)