





Date Planned : __ / __ / __	Daily Tutorial Sheet-13	Expected Duration : 30 Min
Actual Date of Attempt : __ / __ / __	Level-3	Exact Duration : _____

147. Borax on heating with cobalt oxide forms a blue bead of : 
- (A) $\text{Co}(\text{BO}_2)_2$ (B) CoBO_2 (C) $\text{Co}_3(\text{BO}_3)_2$ (D) $\text{Na}_3\text{Co}(\text{BO}_3)_2$
148. The dissolution of $\text{Al}(\text{OH})_3$ by a solution of NaOH results in the formation of :
- (A) $[\text{Al}(\text{H}_2\text{O})_4(\text{OH})]^{2+}$ (B) $[\text{Al}(\text{H}_2\text{O})_2(\text{OH})_4]^-$
(C) $[\text{Al}(\text{H}_2\text{O})_3(\text{OH})_3]$ (D) $[\text{Al}(\text{H}_2\text{O})_6(\text{OH})_3]$
149. Select the incorrect statement about the boron :
- (A) Pure form of the elements are obtained by the reduction of BCl_3 with zinc at 900°C .
(B) Crystalline boron is attacked only by hot concentrated oxidising agents.
(C) Amorphous boron and ammonia at white heat gives $(\text{BN})_x$, a slippery white solid with a layer structure resembling that of graphite.
(D) Boron does form B^{3+} cation easily.
150. A compound of boron X reacts at 200°C with NH_3 to give another compound Y which is called as inorganic benzene. The compound Y is a colourless liquid and is highly light sensitive. Its melting point is -57°C . The compound X with excess of NH_3 and at a still higher temperature gives boron nitride $(\text{BN})_n$. The compounds X and Y are respectively : 
- (A) BH_3 and B_2H_6 (B) NaBH_4 and C_6H_6
(C) B_2H_6 and $\text{B}_3\text{N}_3\text{H}_6$ (D) B_4C_3 and C_6H_6
151. For given processes, choose the correct order of purity of silicon obtained : 
- I. $\text{SiO}_2 + 2\text{C} \longrightarrow \text{Si} + 2\text{CO}$
II. $\text{Si}(\text{impure}) + 2\text{Cl}_2 \longrightarrow \text{SiCl}_4$
 $\text{SiCl}_4 + 2\text{Mg} \longrightarrow \text{Si} + \text{MgCl}_2$
III. $\text{Na}_2[\text{SiF}_6] + 4\text{Na} \longrightarrow 6\text{NaF} + \text{Si} \longrightarrow \text{Zone refined Si}$
- (A) $\text{I} > \text{II} > \text{III}$ (B) $\text{III} > \text{II} > \text{I}$ (C) $\text{I} = \text{II} = \text{III}$ (D) $\text{II} > \text{I} > \text{III}$
152. E represents an element belonging to boron family. 
- $2\text{E} + 3\text{X}_2 \longrightarrow 2\text{EX}_3$ (X = F, Cl, Br, I)
- (A) Oxidation state of E in all EX_3 is +3
(B) All EX_3 are predominantly ionic
(C) TI does not form TiX_3 as Ti^+ is more stable than Ti^{3+}
(D) There exists some EX_3 for which E shows +1 oxidation state