

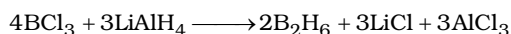
Level - 2

DTS-7

86.(D) To obtain crystalline boron in small amounts, B_2O_3 is reduced with aluminium powder.

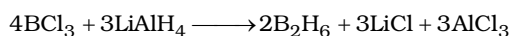
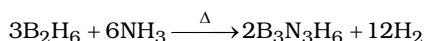
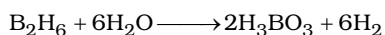
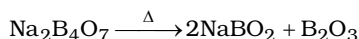
87.(ABD) Refer theory

88.(ABC) Boranes are easily hydrolysed due to presence of vacant p-orbital. Because of incomplete octet BH_3 acts as Lewis acid. All B-H distances in diboranes are not equal [Refer NCERT class XI part II Page No.313]
All B-O distances in Borax are not equal. [Refer to structure of Borax]



89.(B) $PbCl_2$ is insoluble in cold water and soluble in hot water.

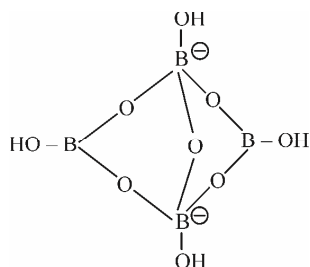
90. [A-s] [B-r] [C-p] [D-q]



91. [A-t] [B-r] [C-p] [D-q]

Inorganic benzene	-	$B_3N_3H_6$
Jeweller's borax	-	$Na_2B_4O_7 \cdot 5H_2O$
Borax	-	$Na_2B_4O_7 \cdot 10H_2O$
Diborane	-	B_2H_6

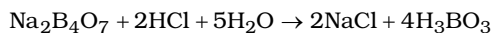
92.(C) In Borax, 2 boron atoms are sp^3 and 2 boron atoms are sp^2 hybridised



93.(ABCD)

Borax when dissolved in water because of partial hydrolysis form solution having weak acid and its salt with strong base $Na_2B_4O_7 + 7H_2O \rightarrow 2NaOH + 4H_3BO_3$
(Salt) (Weak acid)

Borax and HCl reacts in 1 : 2 molar ratio as per given reaction



In borax bead test coloured bead is due to formation of metaborate.



94.(AB) d and f orbital electrons are more diffused and so less repulsive. This causes increase in effective nuclear charge. Therefore, atomic size decreases.

95.(ABD) 2 bridged hydrogen and 2 boron lie in perpendicular plane. Bridged hydrogen are described as 3 centre-2 electron bond