NEET REVISION SERIES

P-BLOCK (GROUP-13,14)

Revise Most Important Questions to Crack NEET 2020

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Q-1 - 11469298

The number of isomers possible for disubstituted borazine,

 $B_3N_3H_4X_2$ is

(A) 3

(B) 4

(C) 6

(D) 5



CORRECT ANSWER: B



	Column-I(Reactions)			Column-II(Product)
(A)	Borax	$\overset{\Delta}{\longrightarrow}$	(p)	BN
(B)	$B_2H_6+H_2O$	$\overset{\Delta}{\longrightarrow}$	(q)	B_2H_6
(C)	$B_2 H_6 N H_3 ({ m Excess})$	$\overset{\Delta}{\longrightarrow}$	(r)	H_3BO_3
(D)	$BCl_3 + LiAlH_4$	$\overset{\Delta}{\longrightarrow}$	(s)	$NaBO_2 + B_2O_3$

CORRECT ANSWER: (A)S(B)R(C)P(D)Q

SOLUTION:

N/A

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Q-3 - 11469181

Choose the correct option :

 BF_3 is used as a catalyst in several industrial processes due to its :

(A) Strong reducing nature

(B) Weak reducing nature

(C) Strong Lewis acid nature

(D) Weak Lewis acid character

SOLUTION:

 BF_3 , due to its strong Lewis acid nature, accepts a pair of electron from the donar molecule and thus behaves as a catalyst.

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The Lewis acid nature of BX_3 follows the order:



- $BF_3 > BCl_3 > BBr_3$ $> BI_3$ (B)
- (C)
- $BCl_3 > BF_3 > BBr_3 \ > BI_3$
- (D) $BF_3 < BBr_3 < BCl_3 < BI_3$

CORRECT ANSWER: B

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In the reaction

 $egin{aligned} &2x+B_2H_6\ & o\left[BH_2(x)_2
ight]^+\left[BH_4
ight]^- \end{aligned}$

```
The reagents (s) 'x' is (are):
```

(A) NH_3

- (B) CH_3NH_2
- (C) $(CH_3)_2 NH$

(D) $(CH)_3 N$

CORRECT ANSWER: A::B::C

SOLUTION:

] —

 $egin{aligned} H_3N. &+ B_2H_6\ & o [H_3N o BH_2\ & o (H_3N^+ [BH_4]^-) \end{aligned}$

 $CH_3NH_2: + B_2H_6$

 $\rightarrow [CH_3NH_2 \rightarrow BH_2]$ $\leftarrow NH_2CH_3$]⁺[BH_4





Q-6 - 11469191

 $B_{10}C_2H_{12}$ is isoelectronic with

(A)
$$\left(B_{12}H_{12}
ight)^{2\,-}$$

(B) $B_{12}H_{12}$

(C) $\left(B_{12}H_{12}
ight)^{2+}$





Which of the following atom would likely form a cation.

(A) B

(B) Si

(C) Al

(D) C

SOLUTION:

Factual statement.

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Q-8 - 11469238

The molecular shapes of diborane is shown below :



Consider the following statements for diborane :

- (i) Boron is approximately sp^3 hybridised.
- (ii) B H B angle is 180

(iii) There are two terminal B - H bonds for each boron atom.

(iv) There are only 12 bonding electrons available of These statements :

(A) (i),(iii) and (iv) are correct

(B) (i),(ii) and (iii) are correct

(C) (ii),(iii) and (iv) are correct

(D) (i),(ii) and (iv) are correct

CORRECT ANSWER: A

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Q-9 - 14948289

A Boron mineral have pentaborate anion whose molecular formula is $[B_5O_6(OH)_4]^-$. The number of B - O - B linkage present are?

CORRECT ANSWER: 6

SOLUTION:



How many of the following can dissolve in aqueous HCl as well as

?

in NaOH solution to liberate H_2 ?

 $B, Al, B_2H_6, B_2O_3,$ $NaAlH_4, Al_2O_3, AlCl_3, BF_3$

CORRECT ANSWER: 3

SOLUTION:

$egin{aligned} Al+3HC &< oAlCl_3\ &+ \left(rac{3}{2} ight) H_2 \ &\uparrow, Al\ &+ NaOH + H_2O\ & ightarrow NaAlO_2\ &+ \left(rac{3}{2} ight) H_2 \ \end{aligned}$

$egin{aligned} B_2H_6+6HC \ &< o3BCl_3+6H_2 \stackrel{\uparrow}{\uparrow}, \ B_2H_6+6H_2O \ &\stackrel{NaOH}{\longrightarrow} H_3BO_3+6H_2 \stackrel{\uparrow}{\uparrow} \end{aligned}$

 $NaAlH_4 + 4HC$ $< oNaCl + AlCl_3$

 $+ 4H_2 \uparrow , NaAlH_4$

 $\stackrel{NaOH}{\longrightarrow} NaAlO_2(aq)$ excess

$$+ 4H_2 \stackrel{\uparrow}{\mid} + 2H_2 O$$

Others fail to do so,

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Q-11 - 12974475

Which of the following oxides are amphoteric?

 $(i)Tl_2O$

 $(ii)Al_2O_3$

 $(iii)Ga_2O_3$

 $(iv)In_2O_3$

(A) (i), (ii), (iii)(B) (ii), (iii), (iv)

(C)(i),(ii),(iii),(iv)

(D) (ii), (iii)

CORRECT ANSWER: D

SOLUTION:

 Tl_2O is strongly basic, In_2O_3 is basic, while Al_2O_3 and Ga_3O_3 are amphoteric. They dissolve in acids as well alkalies to form the corresponding salts.

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Q-12 - 11469241

Stability of monovalent and trivalent cations of Ga, In, Tl lie in following sequence :

(A)
$$Ga^{3+} < In^{3+} > Tl^{3+}$$

(B) $Ga^{3+} > In^{3+} > Tl^{3+}$

(C) $Tl^{\oplus} > In^{\oplus} > Ga^{\oplus}$

(D) $Ga^\oplus < In^\oplus > Tl^\oplus$

CORRECT ANSWER: B::C

SOLUTION:

Among 13 group elements, due to the inert pair effect, stability of higher oxidation state, i.e. +3 decreases down the group (\downarrow) and stability of lower oxidation state, i.e. +1, increases down the group (\downarrow).

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Q-13 - 12974470

Which of the following ions do not exist?

 $(i)B^{3\,+}$

 $(ii)Al^{3+}$

 $(iii)Ga^{3+}$

 $(iv)Tl^{3+}$

(A) (i), (ii), (iii), (iv)

(B) (i), (ii), (iii)

(C) (ii), (iii)

(D) (i), (iv)

CORRECT ANSWER: D

SOLUTION:

 $B^{3\,+}$ ion does not exist because the sum of first three ionization enthalpies is very high. $Tl^{3\,+}$ does not exist because $E(Tl^{3\,+}/Tl)$ is +ve, i.e., Tl(+3) is a

strong oxidizing agent.

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Number of compounds which is/are only acidic:

 $Be(OH)_2,$ $Mg(OH)_2, Al(OH)_3,$ $B(OH)_3, Tl(OH)_3,$ $Ga(OH)_3$

CORRECT ANSWER: 1

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Q-15 - 11469242

 $Al_2(SO_4 \ _ \ (3) + NH_4OH)$ ightarrow X,X

is.

(A) A white gelatinous precipitate

(B) Soluble in excess of NH_4OH

(C) Soluble in excess of NaOH

(D) Amphoteric in nature.

CORRECT ANSWER: A::C::D

SOLUTION:

 $egin{aligned} Al(SO_4)_3 + NH_4OH \ &
ightarrow (NH_4)_2SO_4 \ &
ightarrow Al(OH)_3X \end{aligned}$

is $Al(OH)_3$, which is a white gelatinous precipitate

soluble in excess of NaOH and is amphoteric in nature.



Q-16 - 11469249

Possible oxidation states of boron family elements are :

(A) + 1

(B) + 2

(C) + 3

(D) + 4

CORRECT ANSWER: A::C



Orthoboric acid (H_3BO_3) and metaboric acid (HBO_2) differ in

respect of :

(A) acidicity

(B) Structure

(C) Melting point

(D) Oxidation

CORRECT ANSWER: A::B::C

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Which of the following compounds (s) undergo disproportionation

in aqueous solution ?

(A) $TlCl_3$

(B) GaCl

(C) InCL

(D) TlCl

CORRECT ANSWER: B::C

SOLUTION:

Group 13 elements can exhibit +1 and +3 oxidation

states due to the inert pair effect. Stability of +1

oxidation state increases down the group, i.e. TiCl will

be a stable and will undergo disproportionation.

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Q-19 - 11469258

Which of the following statements are correct for Al?

(A) Bad conductor of electricity

(B) Malleable and ductile

(C) Found free in nature

(D) Alloys of Al are light

CORRECT ANSWER: B::D

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Q-20 - 11469260

Alumina is.

(A) A bad conductor of electricity

(B) Good conductor of electricity

(C) A dehydrating water

(D) Insoluble in water

CORRECT ANSWER: A::D

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Q-21 - 11469263

Potash alum is used as a

(A) Disinfectant

(B) Water softener

(C) Mordant in textile industry

(D) Fibre in polymer industry

CORRECT ANSWER: A::B





Q-22 - 11469265

Boranes have general formula :

(A) $B_n H_{n+2}$

- (B) $B_n H_{2n+2}$
- (C) $B_n H_{n+4}$
- (D) $B_n H_{n+6}$

CORRECT ANSWER: C::D

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Q-23 - 18104854

Silicones have the general formula

(A)
$$SiO_4^{4\,-}$$

(B) SiO_7^{6-}

(C) $(R_2 SiO)_n$

(D) $\left(SiO_3 ight)_n^{2n}$

CORRECT ANSWER: C

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Q-24 - 11469272

The name and formula of the compound of boron which is called 'inorganic benzene' are

(A) Borazole, B_6H_6

(B) Borazine, B_6N_6

(C) Borazine, $B_3N_3H_6$

(D) Borazine, $B_6 N_3 H_3$

CORRECT ANSWER: C

SOLUTION:

Borazine is isoelectronic and isostructural with benzene

and hence is also known as inorganic benzene.



Q-25 - 12676656

Hybrid of boron occurs as B_2H_6 but B_2Cl_6 does not exist. This is because.

(A) $p\pi-p\pi$ back bonding is possible in B_2H_6 but not in B_2Cl_6

(B) boron and hydrogen have almost equal values of electronegativity.

(C) boron and chlorine have almost equal atomic sizes

(D) small hydrogen atoms can easily fit in between boron

atoms but large chlorine atoms do not.

CORRECT ANSWER: C

SOLUTION:

Due to similar size $p\pi - p\pi$ back bonding occurs in

 BCl_3 which doesn't allow it to loose its planar structure.

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Q-26 - 11469384

How many orbitals of boron are involved in the hybridisation in

 B_2H_6 ?

CORRECT ANSWER: (4)

SOLUTION:

Boron in B_2H_6 is sp^3 hybridised and hence four orbitals

are involved.



The unexpected order of acidic strength of the trihalides of boron can best be explained by.

(A) $p\pi - p\pi$ beack bonding

(B) Hybridisation

- (C) Trigonal planar structure
- (D) None of the above

CORRECT ANSWER: A

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Boric acid is polymeric due to

(A) Its acidic nature

(B) The presence of hydrogen bonding

(C) Its monobasic nature

(D) Its geometry

SOLUTION:

In boric acid, the number of $B(OH)_3$ units are joined together by hydrogen bonding to give rise to a polymeric structure.

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$Na_2B_4O_7.10H_2O$ is correctly represented as



 $2NaBO_{2}$. $Na_{2}B_{2}O_{2}.10H_{2}O$ (B) $Na_{2}[B_{4}O_{5}(OH)_{4}].8H_{2}O$

(C)

 $Na_2ig[B_4(H_2O)_4O_7ig]\ .\ 6H_2O$

(D) All of the above

CORRECT ANSWER: B

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Q-30 - 11469342

The stability of monohalides of group 13 elements

(A) Increases down the group

(B) Decreases down the group

(C) First increases and then decreases

(D) First decreases and then increases

CORRECT ANSWER: A

SOLUTION:

Due to inert pair effect, stability of lower oxidation state,

i.e. +1 increases down the group.

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Q-31 - 11469679

Carbobly phosgene, COCl_2)` is prepared by .

(A) the combination of CO with Cl_2 sunlight

(B) the action of 80~% fuming H_2SO_4 boiling in $\mathbb{C}l_4$

(C) oxidising $CHCl_3$ with $k_2Cr_2O_7$ and H_2SO_4

(D) all of the above

CORRECT ANSWER: D

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Q-32 - 11469678

The substance used as a smoke sereen in warfre is .

(A) $SiCl_4$

(B) $SnCl_4$

(C) $PbCl_4$

(D) $GECl_4$

CORRECT ANSWER: A



Q-33 - 11469677

The plague ro tin pest ro the disease refes to .

(A) Conversion of Sn^{2+} salts to Sn^{4+} salts

(B) Conversion of white tin to grey tin`

(C) Conversion fo grey tin to white tin

(D) Emission of sound while bending a tin

CORRECT ANSWER: B

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Q-34 - 14160415

Which of the following statement is correct about the cyclic silicate



(A) the value of n is 12

(B) each Si atom is bonded with three oxygen atoms

(C) each oxygen atom is bonded with two Si atoms

(D) All of these

CORRECT ANSWER: A SOLUTION: A Watch Video Solution On Doubtnut App

Q-35 - 11469670

What of the following anions are present in clay?

(A) Al_2O_3



(C) CO_2



CORRECT ANSWER: C

SOLUTION:

$H_2CO_3 \Leftrightarrow H_2O$ $+CO_2$

Hence, CO_2 is a true acid annudride.



Q-36 - 11469615

A when added to silica gives B. A and (B) are :

(A) HF, H_2SiF_4

(B) HCl, H_2SiCl_6

(D) HI, H_2SiI_6

(C) HCl, H_2SiCl_6

CORRECT ANSWER: A

SOLUTION: $4HF + SiO_2$ (A) $\rightarrow H_2SiF_4 + H_2O$ (B)



Q-37 - 14938416

The correct order of increasig C - O bond length of

 CO, CO_3^{2-}, CO_2 is

(A) $CO_3^{2-} < CO_2 < CO$

(B) $CO_2 < CO_3^{2-} < CO$

(C) $CO < CO_3^{2-} < CO_2$

(D) $CO < CO_2 < CO_3^{2-}$

CORRECT ANSWER: D

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Q-38 - 11469576

CO is isostructural with :

- (A) $SnCl_2$
- (B) $HgCl_2$
- (C) SCl_2

(D) NO_2

CORRECT ANSWER: B::C

SOLUTION:

Same explanation as in Q.6 above .

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Which of the following is correct about silicones?

(A) Silicones are organo silicon compounds containing

Si = O = Si linkage

(B) R_3SiCl on hydrolysis and on subsequent

polymerisation gives linear silicones

(C) When water is eliminated from the terminal -OH groups of linear silicones, cross linked silicones are formed

(D) $RSiCl_3$ on hydrolysis and on subsequent polymerisation gives cross linked silicones

CORRECT ANSWER: D



 PbF_4 , $PbCl_4$ exist but $PbBr_4$ and Pbl_4 do not exist because of -

(A) Large size of $Br^{\,-}\,$ and $I^{\,-}\,$

(B) Strong oxidising character of $Pb^{4\,+}$

(C) Strong reducing character of I and Br

(D) low electronegativity og Br^- and I^-

CORRECT ANSWER: C

SOLUTION:

Due to inert pair effect Pb^{+2} is more stable than Pb^{+4}

but F & CI act as a oxidant so PbF_4 & $PbCl_4$ exist. I &

Br act as a reducing agent so $PbBr_4$ and Pbl_4 do not





Biogas and producer gas are made up of more than one gaseous substances. Which of the following is correct?

(A) Biogas contains CO_2 but producer gas does not.

(B) Producer gas contains CO but not CO_2

(C) Both biogas and producer gas have N_2

(D) All of the three above

CORRECT ANSWER: D

 $CH_4, CO, H_2, CO_2,$

SOLUTION:

 H_2S

, and N_2 while producer gas is a mixture of CO and N_2 .



Biogas (or gobar gas) is a mixture of

Silica is a non-volatile acidic oxide and forms complex nixture of

silicates only when fused with

(A) alkalis

(B) alkali carbonates

(C) both of these

(D) none of these

CORRECT ANSWER: C

SOLUTION:

$egin{aligned} SiO_2 + NaOH\ & ightarrow \left(NaSiO_3 ight)_n \end{aligned}$

 $+ Na_4SiO_4$

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Which of the following two reagents form silicates when react with silica (SiO_2) ?

- (A) NaCl and Na_2S
- (B) NaOH and Na_2CO_3
- (C) Na_2SO_4 and $NaNO_3$
- (D) NaBr and $NaHSO_4$

CORRECT ANSWER: B

SOLUTION:

 $SiO_2 + 2NaOH$

 $ightarrow Na_2SiO_3 + H_2O_3$

 $SiO_2 + Na_2CO_3$ $\rightarrow Na_2SiO_3 + CO_2$



Which of the following oxides of carbon is known as dry ice?

(A) Solid CO

(B) Solid C_3O_2

(C) Solid CO_2

(D) Solid C_5O_2

CORRECT ANSWER: C

SOLUTION:

Solid CO_2 is called dry ice or cardice because it

sublimes directly to the vapor state (without going

through the liquid state) at -78C under atmospheric

pressure. As a result, unlike ordinary ice $[H_2O(s)]$, it

does not wet the surface on which it is kept.



Q-45 - 20470776

Black tin is:

(A) an alloy of Sn

(B) an allotrope of Sn

(C) 60-70% SnO_2

(D) 100% SnO_2

CORRECT ANSWER: C

SOLUTION:

Black tin $\Rightarrow 60 - 70 \% SnO_2$

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Q-46 - 12974611

Which of the following is an industrial fuel?

(A) Water gas

(B) Producer gas

(C) Coal gas

(D) All of these

CORRECT ANSWER: D

SOLUTION:

They all consist of CO which is an important fuel

because it evolves a considerable amount of heat when

it burns in air:

 $2CO + O_2
ightarrow 2CO_2,$

 $\Delta_C H =$

 $-565 k Jmol^{-1}$

Water gas is a particularly good fuel, i.e., it has high

calorific value, because both CO and H_2 burn and evolve heat. Producer gas is a less efficient fuel than water gas (i.e., it has a lower calorific value) as only part of the gas will burn.



Q-47 - 12004078

The states of hybridisation of borom and oxygen atoms in boric acid

 (H_3BO_3) are respectively :

(A)
$$sp^3$$
 and sp^3

(B) sp^2 and sp^3

(C) sp^3 and sp^2

(D) sp^2 and sp^2

CORRECT ANSWER: B

SOLUTION:

B has sp^2 and oxige has sp^2 -hybridisation .

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Q-48 - 12974617

The interlayer distance in graphite is

(A) the same as the covalent radius of carbon

(B) more than twice the covalent radius of carbon

(C) many times larger than the covalent radius of carbon

(D) very short, and the layers are tightly packed

CORRECT ANSWER: B

SOLUTION:

The distance between the layers is 335 pm. It is

appreciably more than twice the covalent radius of C(2 imes154pm)

= 308 pm)

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Q-49 - 11469372

 $B(OH)_3$ is acidic while $In(OH)_3$ is basic.

 B_{OH} (3) has highly H-bonded network structure.

CORRECT ANSWER: C

SOLUTION:

Correct reason : Due to small size and high ionisation

enthalpy, B in $B(OH)_3$ accepts $\dot{O}H$ ion from H_2O and

thus acts as a Lewis acid. However, due to large size

and low ionisation enthalply of In, the In - OH bond

readily breaks and releases $\stackrel{\scriptscriptstyle f}{OH}$ ion, thus $In(OH)_3$

acts as a base.

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Q-50 - 12974626

Which of the following is incorrect regarding carbon monoxide?

(A) The carbon-oxygen bond in CO is very short (113pm), about the length that would be expected for a triple bond.

(B) The triple bond between C and O in CO is the strongest bond known with a bond enthalpy of



(C) The dipole moment of CO is very high.

(D) According to molecular orbital theory, the bond order

of CO molecule is 3.

SOLUTION:

The dipole moment of CO is very low due to the back donation of a pair of electrons from the more electronegative O to the less electronegative C atom. The molecular orbital configuration of CO is $\sigma 1s^2$, $\sigma^* 1s^2$, $\sigma 2s^2$. $\sigma^* 2s^2$

$$\begin{cases} \pi 2p_x^2 \\ \sigma^* 2p_z^0 \\ \pi 2p_y^2 \end{cases} \\ \{ (\pi^* 2p_x^0, ..., ...), \end{cases}$$

 $(,,\sigma^*2p_z^0,,),$ $(\pi^* 2 p_y^0, , , ,)$

Bond order





For making good quality mirrors, the plates of flint glass are used. These are obtained by floating molten glass over a liquid metal which does not solidify before glass. The metal used can be

(A) Sn

(B) Mg

(C) *Hg*



CORRECT ANSWER: A

SOLUTION:

Only the melting point of Sn(232C) is lower than that of glass.



Q-52 - 12974635

Which of the following oxidation states are the most characteristics

for lead and tin, respectively?

(A) +2, +2(B) +4, +2(C) +2, +4

(D) + 4, + 4

CORRECT ANSWER: C

SOLUTION:

Due to inert pair effect, ns^2 electron pair of Pb does not participate in bonding. Thus, +2 is the most characteristic oxidation state for Pb. However, for Sn, the inert pair effect is not so strong Thus, +4 is the most characteristic oxidation state for Sn.

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Q-53 - 12227660

In diborane, the two H - B - H angles are nearly

(A) $60^{\,\circ}\,,\,120^{\,\circ}$

(D) $120^\circ,\,180^\circ$

(C) $95^{\,\circ}\,,\,150^{\,\circ}$

(B) 97° , 120°

CORRECT ANSWER: B

SOLUTION:





Q-54 - 12227631

Percipation of Al^{3+} (aq) as $Al(OH)_3$ by CO_2 shows that:

(A) the acidic property is very weak

(B) the acidic property is very strong

(C) the basic property is very strong

(D) the basic property is very weak

SOLUTION:

$CO_2 + H_2O \Leftrightarrow CO_2^{3-}$ $+ 2H^{+}$

 $2Al^{3+} + 3CO_3^{2-}$ $+ 3H_2O
ightarrow 2Al(OH)_3$ $+ 3CO_2$

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Q-55 - 11469334

Which one is not a borane ?

(A) B_5H_9

(D) $B_6 H_{10}$

(C) $B_5 H_{11}$

(B) $B_5 H_{10}$

CORRECT ANSWER: B



Q-56 - 12675773

Assertion :dimenthyl ether and disilyl ether both readily form

complexes with trimethyl borane.



Reason :

٠

(A) If both assertion and reason are true and the reason

is the correct explanation of the assertion.

(B) If both assertion and reason are true but reason is

not the correct explanation of the assertion.

(C) If assertion is true but reason is false.

(D) If assertion is false but reason is true.

CORRECT ANSWER: D

SOLUTION:

 $egin{aligned} & (CH_3)_2 \ddot{o} + B(CH_3)_3 \ &
ightarrow (CH_3)_2 \ddot{o} \ &
ightarrow B(CH_3)_3 \end{aligned}$

$\ln H_2 Si - O - H_2 Si$ due to $d\pi$ - $d\pi$ delocallisation,

availability of line pairs on O - atom is decreased and

thus disltyl ether doe s not the react with $B(CH_3)_3$.

Q-57 - 12974643

X reacts withy NaOH (aqueous solution) to form Y and H_2 . The aqueous solution of Y is heated to 323 - 333K and on passing CO_2 into it, Na_2CO_3 and Z were formed. When Z is heated to 1200C, Al_2O_3 is formed. X, Y, and Z, respectively, are

(A) Al, $AlCl_3$, $NaAlO_2$

(B) Zn, Na_2ZnO_2

(C) Al, $Al(OH)_3$, $AlCl_3$

(D) $Al, NaAlO_2, Al(OH)_3$

CORRECT ANSWER: D

SOLUTION:

Aluminium is attacked by caustic alkalies with the

evolution of hydrogen gas:

$$egin{aligned} & 2Al+2NaOH \ & (X) \ & + 2H_2O
ightarrow 2NaAlO_2 \ & (Y) \ & + 3H_2 \end{aligned}$$

When aqueous solution containing sodium metaaluminate (Y) is heated to 323 - 333K and carbon dioxide is circulated through it, aluminium hydroxides (Y) separates our as pre-cipitage: $2NaAlO_2 + CO_2$ (Y) $+ 3H_2O
ightarrow 2Al(OH)_3$ (Z)

 $+ Na_2CO_3$

When aluminium hydroxide (Z) is heated to 1200C,

alumina (Al_2O_3) is formed:



 $+ 3H_2O$

Thus, X is Al, Y is $NaAlO_2$, and Z is $Al(OH)_3$.

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Q-58 - 16009123

What type of solid is silicon carbide, SiC?

(A) Ionic

(B) Metallic

(C) Molecular

(D) Network covalent

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Q-59 - 12974650

Which of the following imparts green color to the burner flame?

(A) $B(OMe)_3$

- (B) Na(OMe)
- (C) Al(OMe)
- (D) $Sn(OH)_2$

CORRECT ANSWER: A

SOLUTION:

A mixture of ethyl alcohol (or methyl alcohol) with boric

acid burns with green edged flame due to the formation

of volatile ethyl (or methyl) borate:

 $H_3BO_3 + 3CH_3OH$

 $\rightarrow B(OCH_3)_3$ Methyl borate





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Which one of the following compounds is not a protoric acid?

- (A) $B(OH)_3$
- (B) $PO(OH)_3$
- (C) $SO(OH)_2$
- (D) $SO_2(OH)_2$

CORRECT ANSWER: A

SOLUTION:

Since the central atom B of $B(OH)_3$ is having an incomplete octet, $B(OH)_3$ does not act as a protonic acid but behaves as a Lewis acid:



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