Which of the following compound can't exist

1) SiF_6^{-2} **2)** $SiCl_6^{-2}$ **3)** $GeCl_6^{-2}$ **4)** PbI_2

In correct order

1) Atomic size : $B < Ga < Al < In < Tl$ **2)** Electronegetivity order : $B > Tl > In > Ga > Al$

3) Melting point order : $C > Si > Ge > Sn > Pb$ **4)** Stability order : $Pb^{+2} > Sn^{+2} > Ge^{+2}$

Boric acid acts as strong acid in presence of

1) HCl **2)** HNO_3 **3)** CH_3COOH **4)** Glycol

Correct statement about $AlCl_3$

1) Anhydrous $AlCl_3$ covalent

2) It's aqueous solution contain octahedral cation

3) It attain stability by forming chlorobridge dimer

4) All are correct

Above boyle temperature gases show

1) Ideal behaviour **2)** positive deviation **3)** both positive and negative deviation **4)** all

Under critical conditions compressibility factor

1) 1 **2)** 2 **3)** $\frac{3}{8}$ **4)** $\frac{8}{3}$

Correct statement about borax

1) It's Aqueous solution basic in nature **2)** On hydrolysis it gives two tetrahedral units & two trigonal planar units

3) It contain 5 $B-O-B$ bonds **4)** It contain 8 molecules of water as crystal of hydration

Correct statement about Diborane

1) It is electron deficient compound **2)** It contain six planar Hydrogen atoms **3)** It undergo cleavage reaction with carbon monoxide

4) On hydrolysis it gives Hydrogen gas and tribasic acid

Correct statement

1) Energy order : Fullerence > Diamond > Graphite **2)** C_{60} aromatic in nature **3)** In C_{60} all carbon atoms under go sp^2 Hybridisation

4) SiO_2 & Diamond both are soluble in HF

Correct reaction

1) $Pb_3O_4 + 4HNO_3 \rightarrow 2Pb(NO_3)_2 + PbO_2 + 2H_2O$

2) $Pb_3O_4 + 8HCl \rightarrow 3PbCl_2 + Cl_2 + 4H_2O$

3) $2Pb_3O_4 + 6H_2SO_4 \rightarrow 6PbSO_4 + 6H_2O + O_2 \uparrow$

4) $PbO + 2NaOH + H_2O \rightarrow Na_2[Pb(OH)_4]$

Bond present in silicones

1) $Si-C$ **2)** $Si-O-Si$ **3)** $Si-Si$ **4)** $C-H$

SiO_2 react with

1) HF **2)** $NaOH$ **3)** HCl **4)** $CaCO_3$

An evacuated glass vessel weighs 50g when empty, 148g when filled with a liquid of density 0.98 g/mL and 50.5g when filled with an ideal gas at 760 mm Hg at 300k. Determine the molecular weight of the gas _____ (R= 0.082 lit-atm-K^{-1}-$mole^{-1}$)

Calculate the pressure exerted by 16g of methane in 250 mL container at 300k using Vander Waal equation _____ atm

$a = 2.253 atm lit^2 $mole^{-2}$ b = 0.0428 L - $mole^{-1}$

The u_{rms} of O_2 if its density at 1 atm pressure and 0^0C is 1.4290g litre^{-1} is _____

Sum of the intercept on y-axis and slope of curve plotted between P/T v/s T is _____. for an ideal gas having 10 moles in a closed rigid container of volume 8.21 L. (P = Pressure in atm and T = Temp. in K.)

A balloon is filled upto 3/4th of its maximum stretching capacity at 30^{0}C. The temperature upto which the balloon can be safely heated at constant pressure is _____K.

What will be the temperature difference needed in a hot air balloon to lift 1.00 kg of mass ? Assume that the volume of the balloon is 100 m^3, the temperature of the ambient air is 298 K, the pressure is 1.00 bar, and the air is an ideal gas with average molar mass of 29g mol^{-1}