



# ADITYA JUNIOR COLLEGES

308058

Which of the following compound can't exist

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





# ADITYA JUNIOR COLLEGES

308061

In correct order

- 1)** Atomic size :  $B < Ga < Al < In < Tl$     **2)** Electronegativity order :  $B > Tl > In > Ga > Al$   
**3)** Melting point order :  $C > Si > Ge > Sn > Pb$     **4)** Stability order :  $Pb^{+2} > Sn^{+2} > Ge^{+2}$





# ADITYA JUNIOR COLLEGES

308062

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







# ADITYA JUNIOR COLLEGES

308071

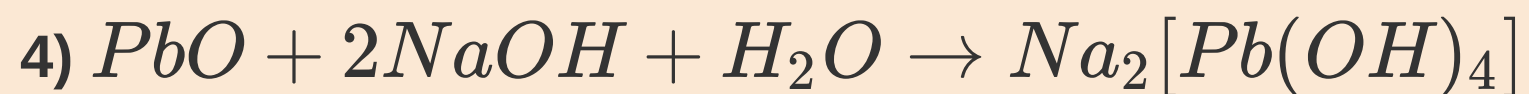
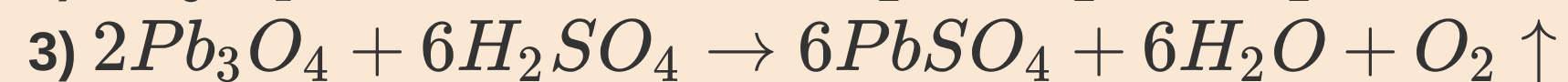
Correct statement

- 1) Energy order : Fullerenes > Diamond > Graphite    2)  $C_{60}$  aromatic in nature    3) In  $C_{60}$  all carbon atoms undergo  $sp^2$  Hybridisation  
4)  $SiO_2$  & Diamond both are soluble in HF





Correct reaction







Bond present in silicones

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





# ADITYA JUNIOR COLLEGES

308075

$SiO_2$  react with

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







# ADITYA JUNIOR COLLEGES

308092

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<sup>-1</sup>-mole<sup>-1</sup>)





# ADITYA JUNIOR COLLEGES

308095

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

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





# ADITYA JUNIOR COLLEGES

308096

The  $u_{rms}$  of  $O_2$  if its density at 1 atm pressure and  $0^\circ\text{C}$  is  $1.4290\text{g litre}^{-1}$  is \_\_\_\_\_





# ADITYA JUNIOR COLLEGES

308097

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.)







# ADITYA JUNIOR COLLEGES

308098

A balloon is filled upto  $\frac{3}{4}^{\text{th}}$  of its maximum stretching capacity at  $30^{\circ}\text{C}$ . The temperature upto which the balloon can be safely heated at constant pressure is \_\_\_\_\_K.





# ADITYA JUNIOR COLLEGES

308100

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<sup>3</sup>, 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<sup>-1</sup>

\_\_\_\_\_



