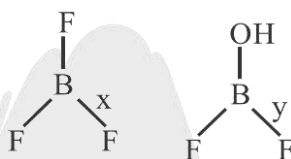


## Single Correct Type

- In  $\text{AsH}_3$ ,  $\text{H} - \text{As} - \text{H}$  bond angle is  $91.8^\circ$ , % s and % p character in As-H bond approximately will be:  
 (A) 33% s & 66%p (B) 25% s & 75%p  
 (C) 33.3% s&66.6%p (D) 3% s&97%p
- Which of the following molecule has higher p-character in  $\text{X} - \text{H}$  bond.  
 (A)  $\text{NH}_3$  (B)  $\text{PH}_3$  (C)  $\text{SbH}_3$  (D)  $\text{AsH}_3$
- Compare Bond length in

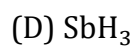
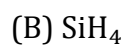
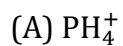


- (A)  $x > y$  (B)  $x < y$  (C)  $x = y$  (D) none of these
- If energy **required** for hybridisation is  $600 \text{ kJ mol}^{-1}$  in case of  $\text{PH}_3$  molecule, then select the correct statement for the energy released during bond formation in  $\text{PH}_3$  :  
 (A) Energy released is more than  $600 \text{ kJ mol}^{-1}$   
 (B) Energy released is less than  $600 \text{ kJ mol}^{-1}$   
 (C) Energy released is exactly equal to  $600 \text{ kJ mol}^{-1}$   
 (D) Energy released has no relation with the formation of hybrid orbitals.

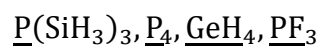
## More than One Correct Type

- Which of the following molecules contains stereochemically inactive lone pair?  
 (A)  $\text{SbH}_3$  (B)  $\text{H}_2\text{Se}$  (C)  $\text{XeF}_6$  (D)  $\text{PH}_3$
- Select the correct statement regarding  $\text{PH}_3$  molecule :  
 (A)  $\text{PH}_3$  has much lower solubility in water as compared to that of  $\text{NH}_3$   
 (B) formation of  $\text{PH}_4^+$  ion is difficult as compared to that of  $\text{NH}_4^+$   
 (C) The complexing ability of  $\text{PH}_3$  is much higher as compound to that of  $\text{NH}_3$ .  
 (D) The lone pair donating ability for P in case of  $\text{PMe}_3$  is much less because the lone pair resides at almost pure s orbital.
- Which of the following order is correct about bond angle ?  
 (A)  $\text{PH}_3 < \text{PF}_3$  (B)  $\text{PH}_3 < \text{PBr}_3$  (C)  $\text{PF}_3 < \text{PCl}_3$  (D)  $\text{PH}_3 < \text{PH}_4^+$
- Select the incorrect order(s) of bond angle among the following :  
 (A)  $\text{SiF}_4 < \text{SiH}_4 < \text{SiCl}_4$  (B)  $\text{PH}_3 < \text{PF}_3 < \text{PCl}_3$   
 (C)  $\text{BF}_2^- < \text{BF}_4^- < \text{BH}_4^-$  (D)  $\text{H}_2\text{S} < \text{H}_2\text{O} < \text{H}_2\text{Te}$

9. Which of the following molecules have  $sp^3$  hybridisation

**Integer Type**

10. Find the number of molecules in which hybridisation is absent in underlined atom



**ANSWER KEY**

1. D    2. C    3. B    4. B    5. ABD    6. AB    7. ABCD  
8. ACD    9. AB    10. 2

A