



**INDIAN SCHOOL MUSCAT**  
**DEPARTMENT OF CHEMISTRY**  
**CLASS – 11**  
**THE p-BLOCK ELEMENTS**



1. The hybridization of C atoms in  $C_{60}$  molecule is \_\_\_\_\_  
a)  $sp$     b)  $sp^2$     c)  $sp^3$     d)  $dsp^2$
2. An aqueous solution of borax is \_\_\_\_\_
3.  $SiF_4$  gets hydrolysed giving \_\_\_\_\_
4. Assertion –Reason type questions:  
In the following questions a statement of assertion followed by a statement of reason is given, Choose the correct answer from the following choices.  
(a) Both assertion and reason are correct statements and the reason is a correct explanation for assertion.  
(b) Both assertion and reason are correct but reason is not a correct explanation for assertion.  
(c) Assertion is correct but reason is incorrect.  
(d) Assertion is wrong but reason is correct.
  - i. Assertion :In  $B_2H_6$  there is no B-B bond  
Reason: The  $B_2H_6 \cdot 2NH_3$  adduct on heating gives borazine
  - ii. Assertion:  $TiCl_3$  is more stable than  $TiCl$   
Reason: +1 oxidation state of Ti is more stable than +3
5. Give reasons:
  - a) There is gradual increase in electro negativity from Al to Tl.
  - b) Boron does not form  $[BF_6]^{3-}$  ion.
  - c)  $BCl_3$  is more stable than  $TiCl_3$ .
  - d)  $PbI_4$  does not exist.
  - e)  $PbCl_4$  decomposes easily on heating.
  - f) Aluminium vessels should not be used to store water.
  - g) Al is used in making alloys for aircraft industry.
  - h) Boric acid forms polymeric structure.
  - i) Si does not form graphite like structure.
  - j) Fullerenes are the purest forms of carbon.
  - k)  $CCl_4$  cannot be hydrolysed.

- l) CO is highly poisonous.
6. Describe with suitable examples:
- Zeolites
  - Silicates
  - Allotropes
7. What happens when?
- Diborane is heated with ammonia
  - Borax is dehydrated
  - Boric acid is heated
8. Explain the structures of:
- Boric acid
  - Fullerene
  - Diborane
9. How are silicones prepared? Give its uses.
10. Compare the structure of:
- Graphite and diamond.
  - SiO<sub>2</sub> and CO<sub>2</sub>.
11. Define inert pair effect. Give two consequences..
12. Complete and balance the equations:
- $B + O_2 \rightarrow$
  - $B + N_2 \rightarrow$
  - $Al + NaOH + H_2O \rightarrow$
  - $BF_3 + NH_3 \rightarrow$
13. Give the method of preparation of LiBH<sub>4</sub>
14. A salt A, gives the following results :
- Its aqueous solution is alkaline to litmus
  - It swells up to a glassy material B on strong heating.
  - When conc. H<sub>2</sub>SO<sub>4</sub> is added to a hot solution of A, white crystals and an acid C separates out. Write equations for all the above reactions and identify A, B and C.