

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

1	<p>Give reasons:</p> <ul style="list-style-type: none">a) Ga has lower atomic radius as compared to Alb) BCl_3 is more stable than TlCl_3.c) PbCl_4 decomposes easily on heating.d) Aluminium vessels should not be used to store water.e) CCl_4 cannot be hydrolyzed.f) C differs from the rest of the members of its familyg) PH_3 has lower boiling point than NH_3h) Nitrogen shows lower tendency of catenationi) Pentahalides more covalent than trihalidesj) PCl_5 fumes in airk) H_3PO_2 is a stronger reducing agent than H_3PO_3
2	Describe zeolites with examples.
3	<p>What happens when?</p> <ul style="list-style-type: none">a) Boron trifluoride is treated with sodium hydrideb) Iodine is treated with conc. HNO_3c) Boric acid is heatedd) Silicon dioxide reacts with sodium hydroxide at elevated temperatures.e) Phosphine is treated with hydrogen iodide
4	<p>Draw the structures of:</p> <ul style="list-style-type: none">a) $(\text{HPO}_3)_3$b) $\text{H}_4\text{P}_2\text{O}_7$c) B_2H_6
5	How are silicones prepared? Give its uses.
6	Compare the structure and reactivity of White phosphorus and red phosphorus.
7	Explain manufacture of a) ammonia b) nitric acid.

8	<p>Complete and balance the equations:</p> <ol style="list-style-type: none"> $\text{Al} + \text{NaOH} + \text{H}_2\text{O} \rightarrow$ $\text{BF}_3 + \text{NH}_3 \rightarrow$ $\text{Cu}^{2+} + 4\text{NH}_3 \rightarrow$ $\text{PH}_4\text{I} + \text{KOH} \rightarrow$ $\text{Ag} + \text{PCl}_5 \rightarrow$ $\text{Zn} + \text{HNO}_3(\text{dil}) \rightarrow$
9	<p>Arrange the following in the increasing order of property mentioned in the bracket</p> <ol style="list-style-type: none"> Hydrides of group 15 [basic character] $\text{H}_3\text{PO}_2, \text{H}_3\text{PO}_3, \text{H}_3\text{PO}_4$ [basicity] Hydrides of group 15 [bond angle]
10	<p>A salt A, gives the following results :</p> <ol style="list-style-type: none"> Its aqueous solution is alkaline to litmus It swells up to a glassy material B on strong heating. When conc. H_2SO_4 is added to a hot solution of A, white crystals of an acid C separate out. Write equations for all the above reactions and identify A, B and C.