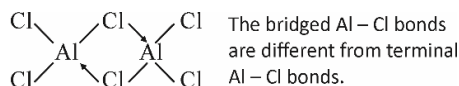


- The two common allotropes of carbon are diamond and graphite. Diamond is the hardest, natural substance, used as an abrasive while graphite is soft, used as a lubricant.
- (B)** Graphite has layered structure and conducts electricity moderately. Silica and diamond have 3-dimensional network structure and non-conducting.
- Carbon dioxide solidifies at very low temperature, hence solid CO_2 is very cold, commonly known as dry ice. Also solid carbon dioxide sublimates without passing through liquid state.
- (F)** Phosgene gas is obtained by treatment of CCl_4 with superheated steam :

$$\text{CCl}_4 + \text{H}_2\text{O}(\text{vapour}) \longrightarrow \text{COCl}_2 + 2\text{HCl}$$
- Graphite has layered structure and the adjacent layers are weakly associated giving slippery nature, used as solid lubricant.
- (T)** Graphite is better lubricant on moon than on earth because of less gravitational pull on the moon.
- (F)** In Al_2Cl_6 all the Al – Cl bonds are not equivalent :



8.

X		Y		Z	
1	Yeast	a	Fermentation	p	Ethanol
2	Mica	b	Layered structure	q	Insulator
3	Superphosphate	c	Bone ash	r	Fertiliser
4	Carbon fibers	d	Graphite	s	Reinforced plastics
5	Rock salt	e	Crystalline cubic	t	Preservative
6	Carborundum	f	Diamond structure	u	Abrasive

- $$3\text{SiCl}_4 + 4\text{Al} \xrightarrow{\Delta} 4\text{AlCl}_3 + 3\text{Si}$$

Vapour Molten Volatilizes Crystalline
- Silicones are organosilicon polymers, obtained by hydrolysis of alkyl substituted chlorosilanes.
- (T)** Due to smaller size of carbon than silicon, C – C bond is stronger than Si – Si bond, hence former is more likely to extend than later.
- (F)** The basic nature of hydroxide of group-13 increases from top to bottom due to increase in electropositive character.
- (T)** Graphite has a layer structure of hexagonal carbon rings stacked one over other which makes it slippery.
 On the other hand, in diamond, each carbon is tetrahedrally bonded to other four carbons extended in three dimensional space, giving a giant, network structure. Due to this reason, diamond is harder than graphite.
- Buckminster fullerene is the name of recently discovered allotrope of carbon.

15. After dimerisation, no reactive functional group remains.

