Ans. There each carbon atom is covalently bonded with 4 different carbon atoms in a diamond. It forms a tetrahedral arrangement to create a rigid structure. Whereas in graphite, each carbon atom is covalently bonded to three different carbon atoms in a hexagonal arrangement.

FULLERENES: discovered in 1985 – Robert F Curl, Harold W and Richard E. This fullerenes has closed structures like a football with 60 carbon atoms.



Fullerenes are formed when vaporized carbon condenses in an atmosphere of an inert gas(An inert gas is a gas which does not undergo chemical reactions under a set of given conditions.)

Now in addition to the three allotropic forms, carbon also exists in three micro-crystalline or amorphous forms of graphite. They are charcoal, coke and carbon black.

Charcoal: Charcoal is formed when wood is heated strongly in the absence of air. It has a large surface area. Activated charcoal is a pulverized form whose surface has been made free from any adsorbed materials by heating with steam. It is widely used for adsorbing coloured impurities and bad odours from water and other substances.

Coke: Coke is an impure form of carbon. It is formed when coal is strongly heated in the absence of air. It is used as a reducing agent in metallurgy(Metallurgy is defined as a process that is used for the extraction of metals in their pure form).

Take samples of graphite, coal, charcoal and compare their properties.

• Carbon black is formed by heating hydrocarbons in limited supply of oxygen. For example,  $CH_4(g) + O_2(g) \longrightarrow C(s) + 2H_2O(g)$ 

Preview from Pad Compounds of Carpon

A compared is a material formed by chemically bording two or more chemical elements. The type of bond keeping elements in a compound together may vary: covalent bonds and ionic bonds are two common types.

Carbon is known to form a number of compounds due to the salient properties it carries with itself. The most general or the *basic compound formed by carbon is methane (CH<sub>4</sub>)*. Such types of compounds formed by the combination of hydrogen and carbon are known as hydrocarbons.

Compounds of carbon: it can be calssified as organic and inorganic compounds.

ORGANIC COMPOUNDS	IN-ORGANIC COMPOUNDS	
• They are found in most of the living thing	• They are found in non-living thing	
<ul> <li>These compounds exist in the form of solids, liquids and gases</li> </ul>	• These exist as solids, mainly in minerals for eg. Limestone, marble	
• Low melting solids or liquids but generally insoluble in water.	• Being generally solids which have high melting and boiling points. And dissolve in water but are insoluble in organic solvents	
Cleasify the following compounds as organic or increasing		

Classify the following compounds as organic or inorganic:

Sugar	:	organic
Calcium carbide	:	inorganic
Kerosene	:	organic