

a) Atomic Structure and Mixtures

b) Periodic Table

c) Structure and Bonding

d) Quantitative Chemistry

e) Chemical Changes

f) Energy Changes

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Covalent Bonding

Ionic Bonding

Nanoparticles

Covalent Bonding

Graphene and Fullerene

Metallic Bonding

State of Matter

Ionic compounds

Covalent Compounds

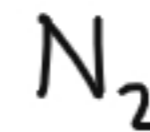
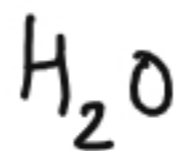
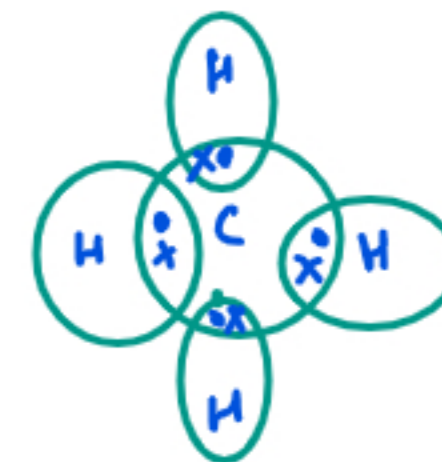
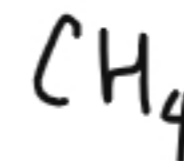
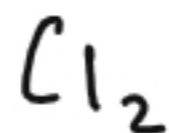
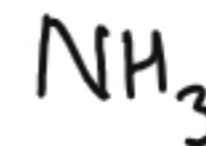
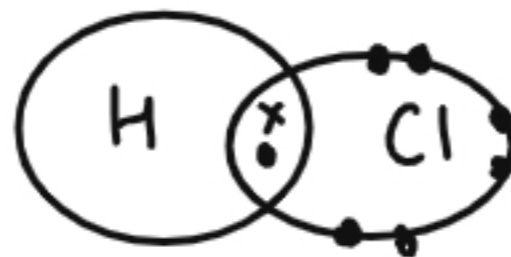
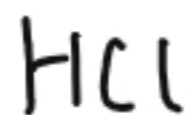
Diamond and Graphite

COVALENT BONDING

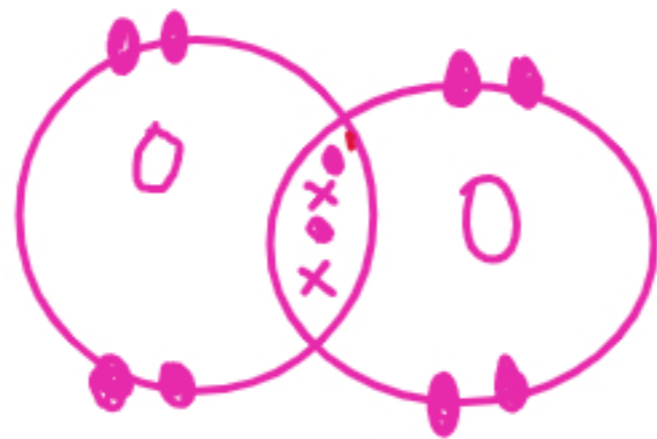
It is between two non metals

It involves the sharing of electrons between two non metals.

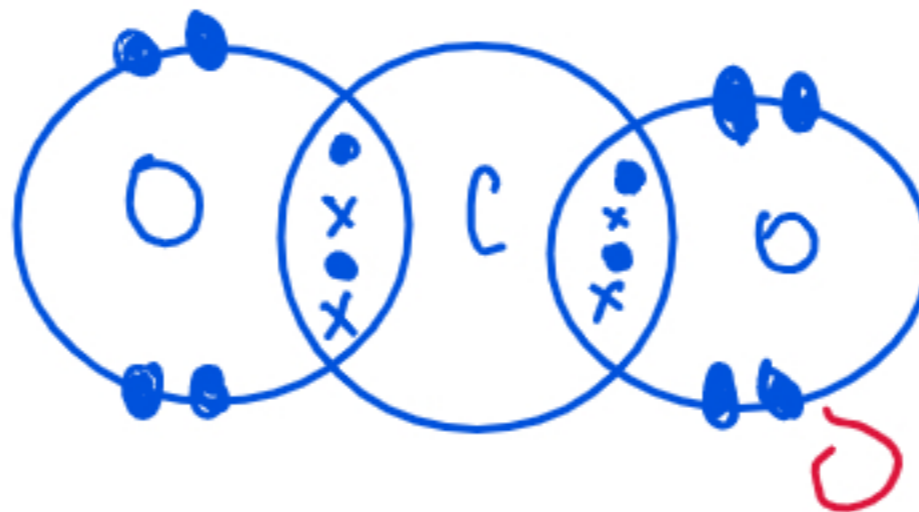
More than one electron pair can also be shared resulting in the formation of single double and triple bonds.



O_2



CO_2



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Properties of Covalent Compounds !!!!!

Properties of Ionic and Covalent Compounds

Ionic

- Crystals
- High melting Points + boiling Points
- Hard, Brittle
- Usually soluble in H₂O
- Electrolytes

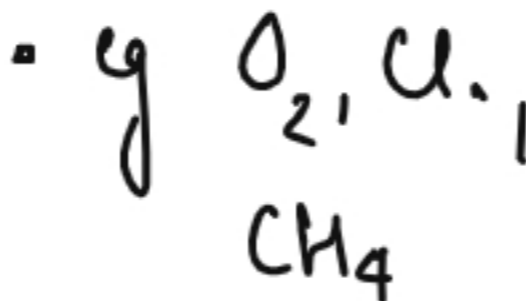
Covalent

- S, I, G
- Lower Melting Point / boiling point
- Poor conductors
- Don't usually dissolved in H₂O
- Flammable

Source: Flickr.com

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Simple Molecule



Giant Covalent

Diamond

Graphite

Silicon Dioxide

★ They have weak intermolecular forces in them so have a lower melting and a boiling points

★ The intermolecular forces increases with increase in size as the surface area between the molecules increases.

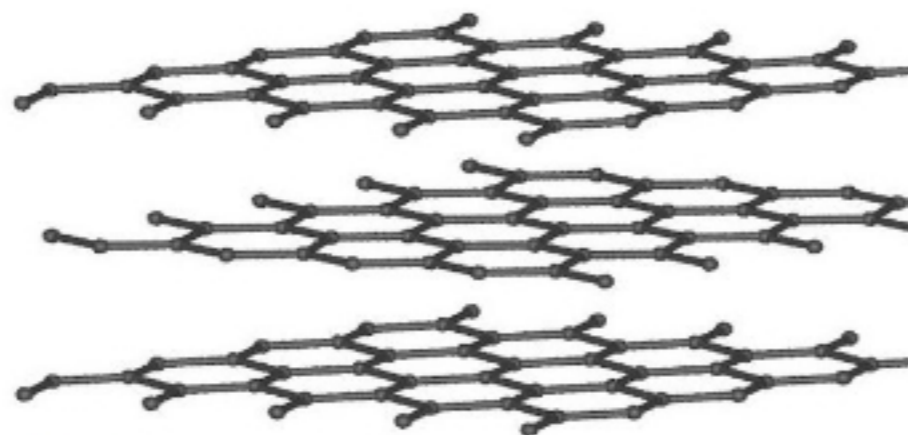
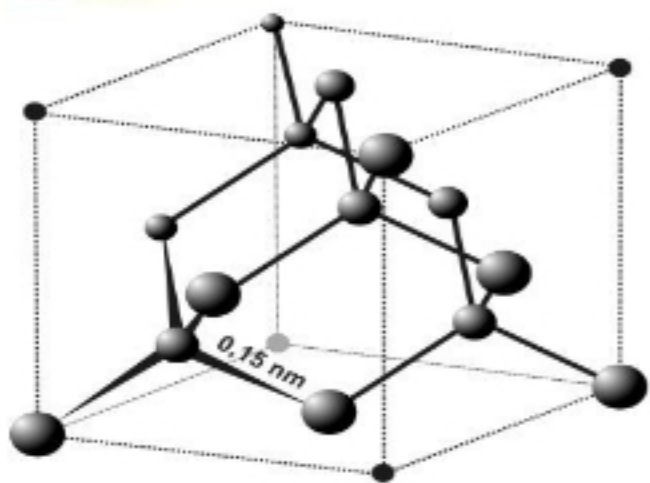
★ Therefore, polymers which have covalent bonding between them have high melting and boiling point due to increase in chain length.

GIANT COVALENT STRUCTURES !!!!

Substances which have huge network of atoms joined together by covalent bonds form giant covalent structures.

Diamond

Graphite



DIAMOND	GRAPHITE
It is hard.	It is soft and greasy.
It is an insulator	It is a conductor
It has a high density.	It has a lower density than diamond.
Each carbon atom is covalently bonded to four other carbon atoms giving it a strong rigid structure.	Carbon atoms are bonded in the form of layer in the form of hexagons. No covalent bonding between the layers so they can slide past. Each carbon atom is bonded with three other carbon leaving the fourth electron has delocalized
No delocalised electrons present	It has delocalised electrons
Used in cutting or jewellery	It is used in pencil leads.

Q1 Why graphite is soft and slippery ?

In graphite, Carbon atoms are bonded in the form of layers in the form of hexagons. No covalent bonding between the layers so they can slide past each other. The layers have only weak intermolecular forces between them. By applying a little pressure then layers can easily slide past each other making graphite soft and slippery.

Q2 Why graphite conduct electricity ?

In graphite, Carbon atoms are bonded in the form of layer in the form of hexagons. No covalent bonding between the layers so they can slide past. Each carbon atom is bonded with three other carbon leaving the fourth electron has delocalized, These delocalized electrons are mobiles electrons which can move and conduct electricity.

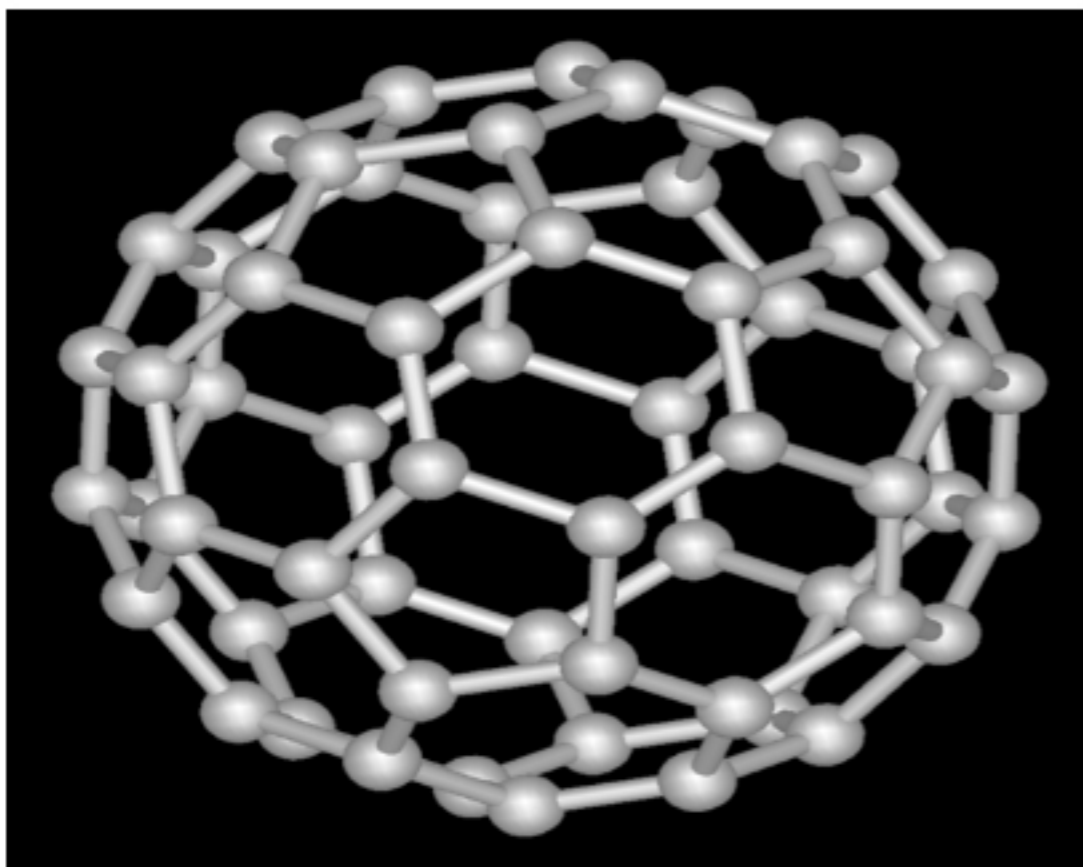
Insert an **apostrophe** in the correct place in the sentence below.

Pupils coats should be hung on the pegs.

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Source: Wikimedia Commons !!!

Fullerene: Hollow shaped molecule having hexagonal rings like a bucky ball.

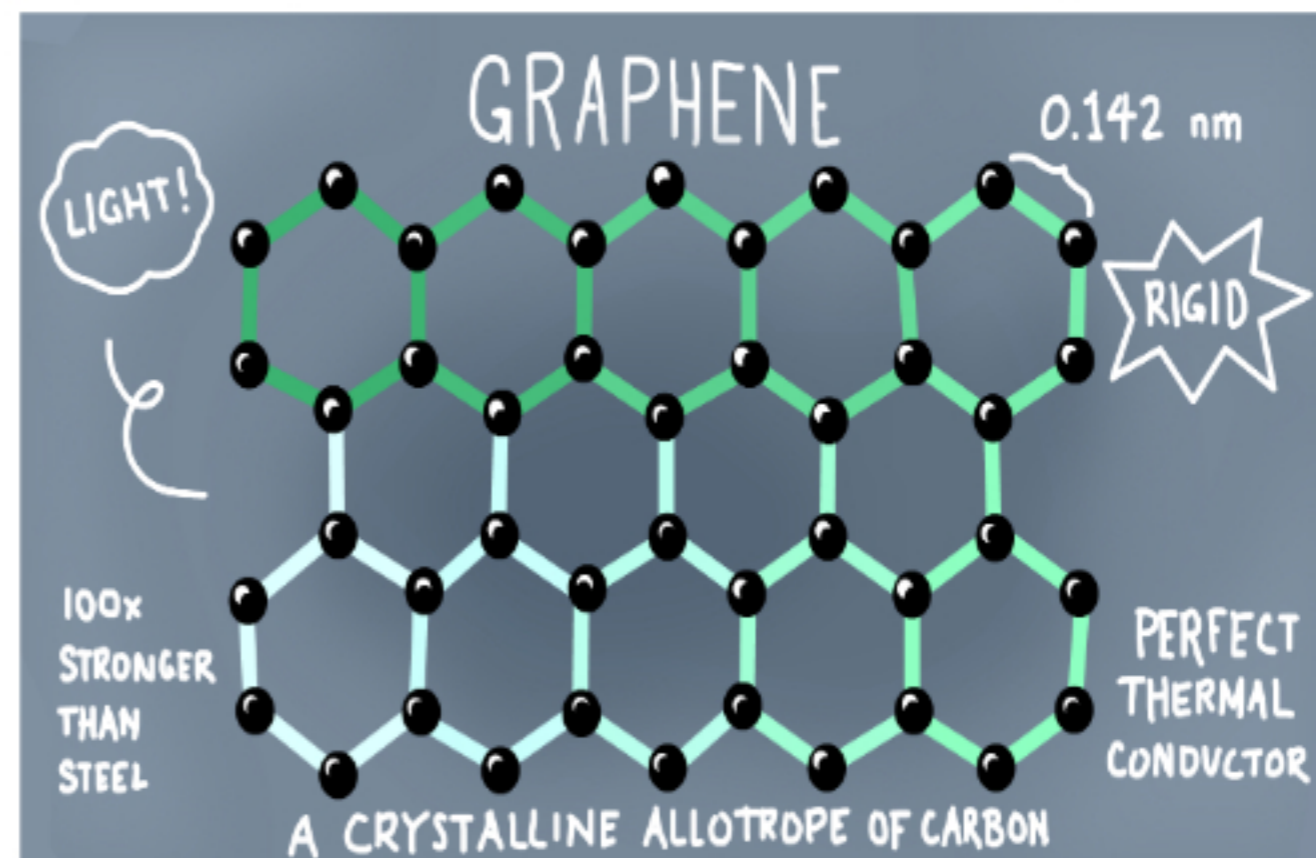


Also known as bucky ball or buckminsterfullerene.

Carbon can be in the form of pentagon or hexagon rings

Used as catalyst, drug delivery and treating cancer.

Graphene: Layer of interlocking hexagonal rings like single sheet of graphite.

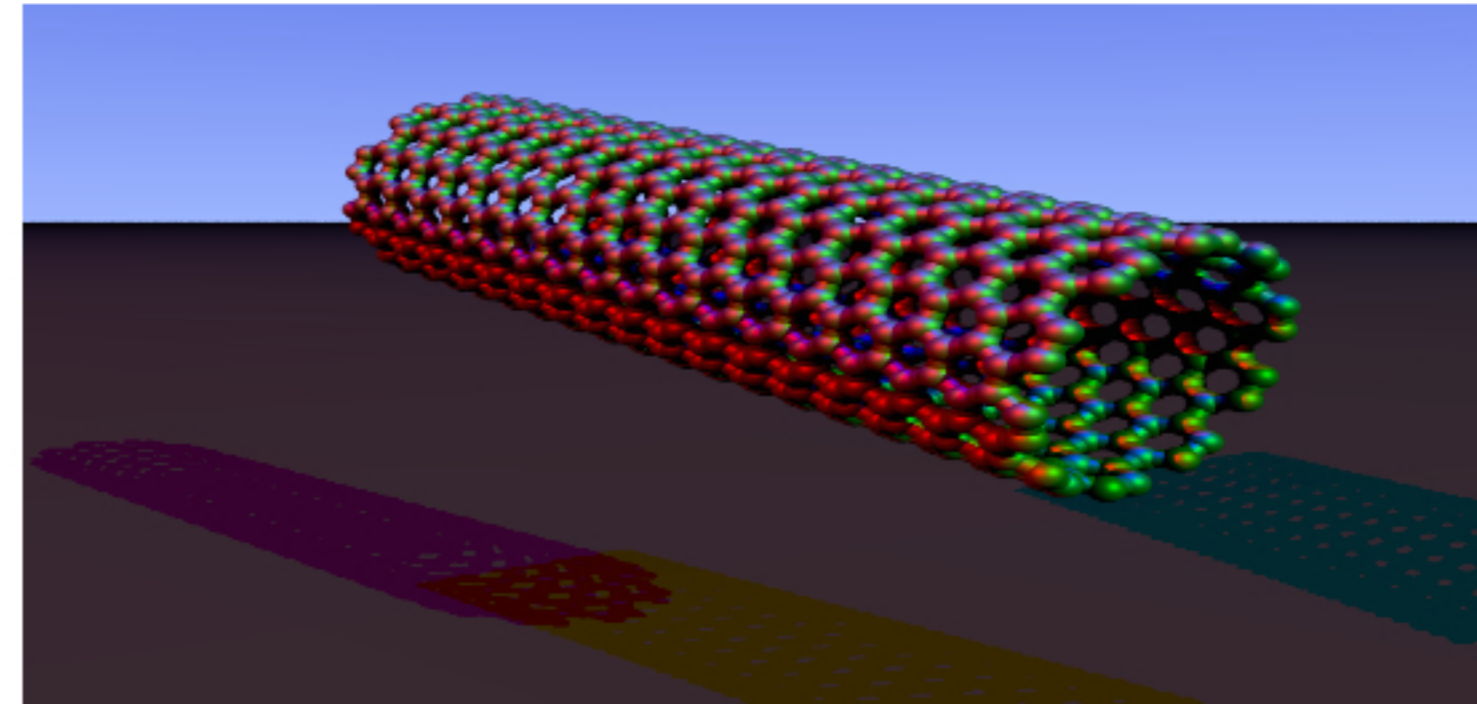
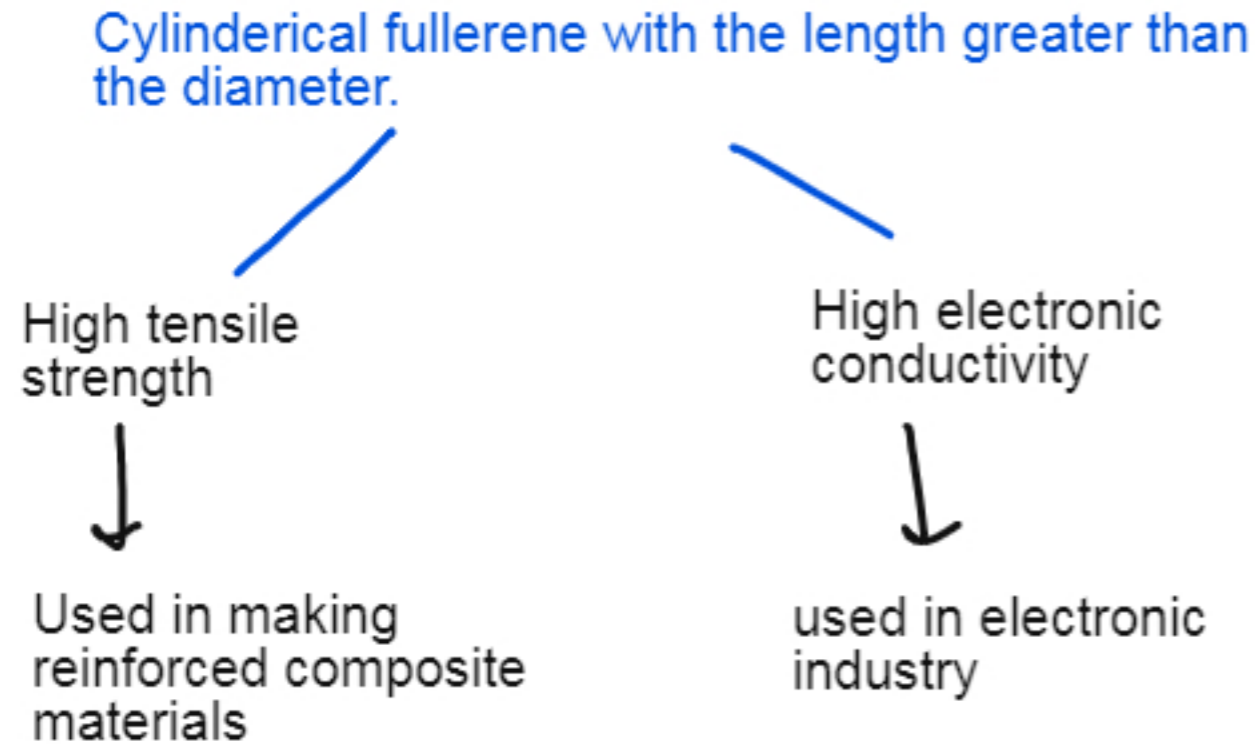


It is a better conductor than graphite, light and have low density.

Used in making computer chips and flexible electronic displays.

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CARBON NANOTUBES !!!!!



Source: Wikipedia

NEXT STEP !!!!!



Check the specification



Do Exam Style Questions on this topic

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