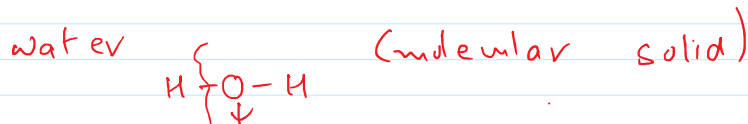
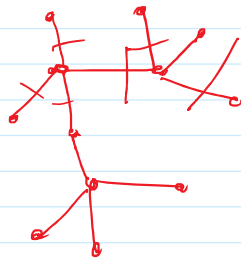
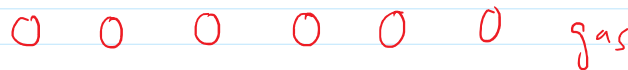


Note:



↓ heat (overcome intermolecular forces)



Covalent solid

Note:

Covalent compounds have low melting and boiling point because we overcome intermolecular forces to melt/boil them, which are weak. But in case of diamond/graphite strong carbon-carbon bond is to be broken to melt them, hence they have high melting/boiling point.

Catenation

Ability of atom to link to itself forming large chains or rings

eg: S_8 .



Latin → catena → chain

Versatile nature of carbon

Factors responsible for carbon forming so many compounds

i) Catenation

Carbon-carbon bond is very strong and stable hence carbon exhibits catenation tendency to a very

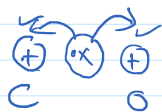
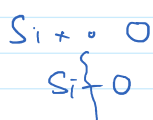
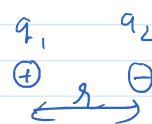
large extent as compared to any other element.

ii) Carbon atoms may be linked by single, double or triple bond.

iii) Tetravalency

Carbon can form four bonds, thus chains/rings formed by carbon bonds may extend in three dimensions.

iv) As carbon is small in size, this enables the nucleus to hold on to the shared pairs of electrons strongly. Thus carbon forms stable bonds with most other elements. Bonds formed by elements having larger atoms are much weaker.



$$\frac{k q_1 q_2}{r^2} = F$$

Q. No

1. Define Allotropy. Give examples - (2)
2. Differentiate between diamond and graphite - (4)
3. What is geometry in which carbon is linked in diamond. - (1)