

Quiz 5.7 (ii): Physical Properties of Ionic and Covalent Bond

- (a) Melting and Boiling Point
- (b) Differences between simple Molecular structure and Giant structure of Covalent compound.

1. Table shows the physical properties of compounds X, and Y.

Compound	Melting point
X	2470
Y	801

(a) State the type of chemical bond in Compound X and Compound Y.

- (i) Compound X :
- (ii) Compound Y :

(b) State the type of particles in compound X and Y

- (i) Compound X :
- (ii) Compound Y :

(c) Explain why compound X has high melting point than compound Y.

.....

(d) Explain why compound Y has high melting point than compound X.

.....

2. Differences between Simple Molecular structure of covalent compounds and Giant Molecular structure of covalent compounds.

SIMPLE MOLECULAR STRUCTURE	ASPECTS	GIANT MOLECULAR STRUCTURE
Small and simple structures can be found in the form of	Structure	Very large structures and usually exists as
..... covalent bond between the atom within the molecule only while there is Van der Waals forces between molecules.	Chemical Bond covalent bond between the atom within the molecule only while there is Van der Waals forces between molecules.
	Melting and boiling Point	
..... heat energy is needed to overcome the between the molecules.	Reason : heat energy is needed to overcome the between the molecules.
Similarities		
<ul style="list-style-type: none"> ▪ All atoms are bonded to each other through 		

Simple Molecule of Covalent Compound	Giant Molecule of Covalent Compound
Bond / Forces	Bond / Forces
Strong Covalent bond	Strong Covalent bond
Weak Van der Waals forces	Weak Van der Waals forces
Has melting and boiling point due to attracted by Van der Waals forces between molecules.	Has melting and boiling point due to attracted by Covalent bond between molecules only.

3. Diamond is a giant molecule of covalent compound while carbon dioxide, CO₂ is a simple molecule of covalent compound.

(a) Compare the melting point and boiling point of diamond and carbon dioxide, CO₂. Explain.

- The melting point and boiling point of diamond is than carbon dioxide.
- This is because diamonds have covalent bonds.
- heat energy is needed to overcome these forces to melt and boil diamonds.
- On the other hand, carbon dioxide molecules are held by
- heat energy is needed to overcome these forces to melt and boil carbon dioxide.

(b) Predict the electrical conductivity of diamond. Explain your prediction.

- Diamond conduct electricity.
- Diamond is a compound.
- Diamond made up of neutral molecules and any charges.

Thanks for Cooperation ☺