

Name : Date :

Covalent Bonding Q/A Worksheet

1. Define covalent bonding.

2. What are the properties of covalent compounds?

3. What are polar and non-polar covalent compounds? Explain with examples.

4. Label the following as polar covalent compounds (P) or non-polar covalent compounds (NP).

a. N_2 →

e. Cl_2 →

b. H_2O →

f. NH_3 →

c. CH_4 →

g. CCl_4 →

d. HCl →

h. CO_2 →

Name : _____ Date : _____

Covalent Bonding Q/A Worksheet

1. Define covalent bonding.

When two (or sometimes more) non-metallic atoms share a pair of electrons to achieve stability, the bond formed between them is covalent.

2. What are the properties of covalent compounds?

Covalent compounds are known to have the following properties:

- These compounds are available in all states of matter - gases, liquids, and solids.
- Non-metallic atoms share electrons to achieve stability.
- Generally, these compounds melt and boil at low temperatures.
- They are poor electrical conductors in all phases of matter.
- Covalent compounds tend to be soluble in non-polar liquids and not in water.
- They are poor conductors of heat, making them great insulators.

3. What are polar and non-polar covalent compounds? Explain with examples.

A covalent bond is considered polar when the electrons are not equally shared, leading to a shift in electron density. For example, in HCl, chlorine carries a partial negative charge, while hydrogen carries a partial positive charge.

When the electrons in a covalent bond are equally shared, the bond is said to be non-polar as the electrons are consistently distributed throughout. For example, in H₂, the hydrogen atoms share their electrons equally.

4. Label the following as polar covalent compounds (P) or non-polar covalent compounds (NP).

