

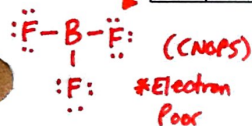
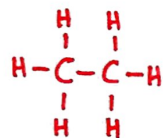
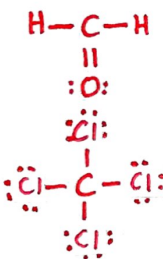
ANSWER KEY - HONORS

Intermolecular (Interparticle) Forces:

Name: _____

- For the following substances, identify the type of substance as either *Ionic*, *Polar Covalent*, *Non-Polar Covalent*, *Metallic*, or *Networks*.
- Determine the interparticle force for each type of substance: *H-bonding (H-B)*, *dipole-dipole (D-D)*, *ion-dipole (I-D)*, *London Dispersion Force (LDF)*, *Network Covalent (NC)*, or *Metallic (M)*.
- Rank the relative melting point for each substance from *highest (1)* to *lowest (9)*.
- Rank the relative boiling point for each substance from *highest (1)* to *lowest (9)*.
- Determine the conductivity for each substance: Choose from *High*, *NONE*, *In Solution/Liquid*
- Determine the solubility for each substance: Choose from *YES*, *NO*, or *Slightly*

	Substance	Type of Substance	Strongest Interparticle Force	Relative Melting Point	Relative Boiling Point	Conductivity	Solubility
1)	NH ₃	Polar Covalent	H-Bonding (H-B)	5	5	None	Slightly
2)	CH ₂ O	PC	D-D	6	6	None	Slightly
3)	K ₃ PO ₄	Ionic	I-D	2	2	In Soln/ Liquid	Yes
4)	CCl ₄	NPC	LDF	7	7	None	No
5)	Zn	Metallic	Metallic	4	4	High	No
6)	C _(diamond)	Network	NC	1 Highest	1	None	No
7)	LiCl	Ionic	I-D	3	3	In Soln/ Liquid	Yes
8)	C ₂ H ₆	NPC	LDF	9 Lowest	9	None	No
9)	BF ₃	NPC	LDF	8	8	None	No

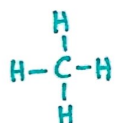


For the following substances, identify the type of substance first, followed by its interparticle force (see example #1). If the attraction is dipole-dipole, determine if the molecule forms hydrogen bonds.

- Type of Substance:** *Ionic*, *Polar Covalent*, *Non-Polar Covalent*, *Metallic*, or *Networks*.
- Interparticle:** *H-Bonding (H-B)*, *Dipole-Dipole (D-D)*, *Ion-Dipole (I-D)*, *London Dispersion Force (LDF)*, *Network Covalent (NC)*, or *Metallic (M)*.

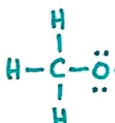
1. I₂ Non-Polar Covalent → London Dispersion Force (LDF)

2. Cu Metallic → Metallic



3. CH₄ NPC → LDF

4. CH₂O PC → D-D

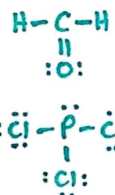


5. LiOH Ionic → I-D

6. CH₂O PC → D-D

7. Na₃PO₄ Ionic → I-D

8. PCl₃ PC → D-D



9. Fe Metallic → Metallic

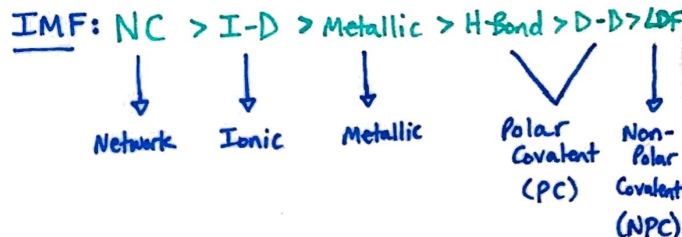
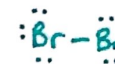
10. C_(graphite) Network → NC

11. HF PC → H-Bonding



12. CuBr₂ Ionic → I-D

13. Br₂ NPC → LDF



* Diatomics (BrINC(H)OF) are always non-polar