

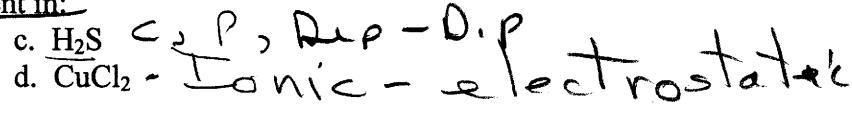
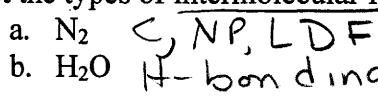
Short Notes on Intermolecular Forces Worksheet

Name: _____

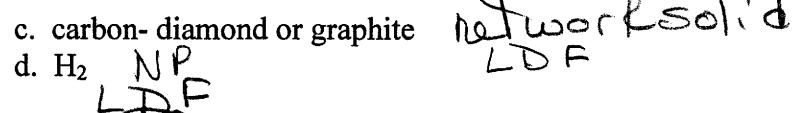
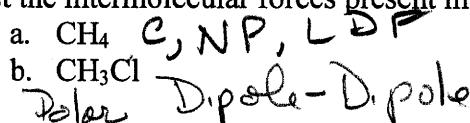
Period: _____

1st ~~strong~~ for C; P or NP; IMF

1. List the types of intermolecular forces present in:



2. List the intermolecular forces present in:



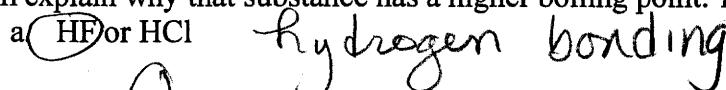
3. Which should have a higher melting point, CCl₃F or KCl? Why? 1st list shape, 2nd IMF, 3rd strongest IMF (that will answer the why?)

Covalent v.s. Ionic Electrostatic attraction stronger

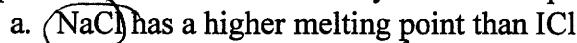
4. Arrange in order of increasing (from lowest to highest) boiling points: Br₂, KCl, Cl₂. Explain the order.

Cl₂ Br₂ KCl

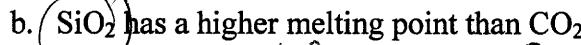
5. For each of the following pairs of molecular substances, choose the one with a higher boiling point and then explain why that substance has a higher boiling point. 1st list shape, 2nd IMF, 3rd strongest IMF



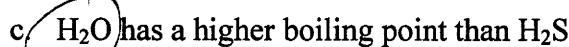
6. Explain in terms of structure why?: 1st list shape, 2nd IMF, 3rd strongest IMF



Ionic Electrostatic

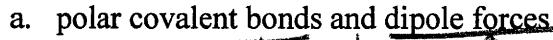


Both NP LDF SiO₂ higher mass

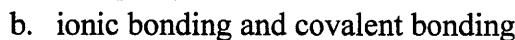


Hydrogen bonding

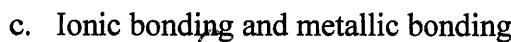
7. Explain in your own words the difference between:



Intramolecular & Inter molecular Bonds



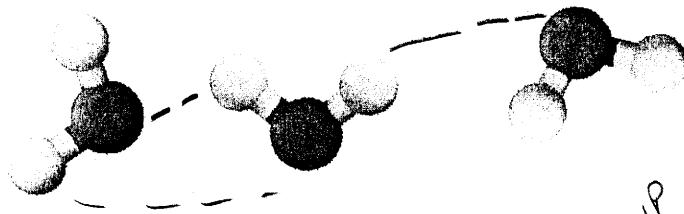
ionic e⁻ transfer to form ions v.s. covalent share e⁻



Ionic transfer e⁻; metallic share all electrons with the metal cations

8. Indicate where a hydrogen bond exists in the following diagram of water:

next pg



NP NP NP P NP
71 16 68 44

9. Rank the following from strongest to weakest intermolecular forces: Cl_2 , CH_4 , BF_3 , SCl_2 , CO_2

Di-Di LDF $\text{SCl}_2, \text{Cl}_2, \text{BF}_3, \text{CO}_2, \text{CH}_4$

10. Which of the following compounds are likely to dissolve in water? P find P

- Polar (a) SCl_2 $\text{Cl} \ddot{\text{S}} \text{ i } \text{C}$
 Polar (b) O_2
 Polar (c) NaCl
 Polar (d) CO_2
 Polar (e) PH_3

11. Which of the following will dissolve in C_6H_{14} (hexane)? NP find NP

- (a) SCl_2
 (b) O_2 — NP
 (c) NaCl
 (d) CO_2 — NP
 (e) PH_3

12. What is the force of attraction between molecules of the following substances?

- | | |
|--|--|
| a. PCl_3 Di-Di Polar | e. HCl Polar Dipole-Dipole |
| b. NiCl_2 Ionic Electrostatic | f. CH_3OH Polar Hydrogen Bonding |
| c. I_2 LDF NP | g. H_3PO_4 Polar " |
| d. HF Polar Hydrogen Bonding | i. BF_3 NonPolar LDF |