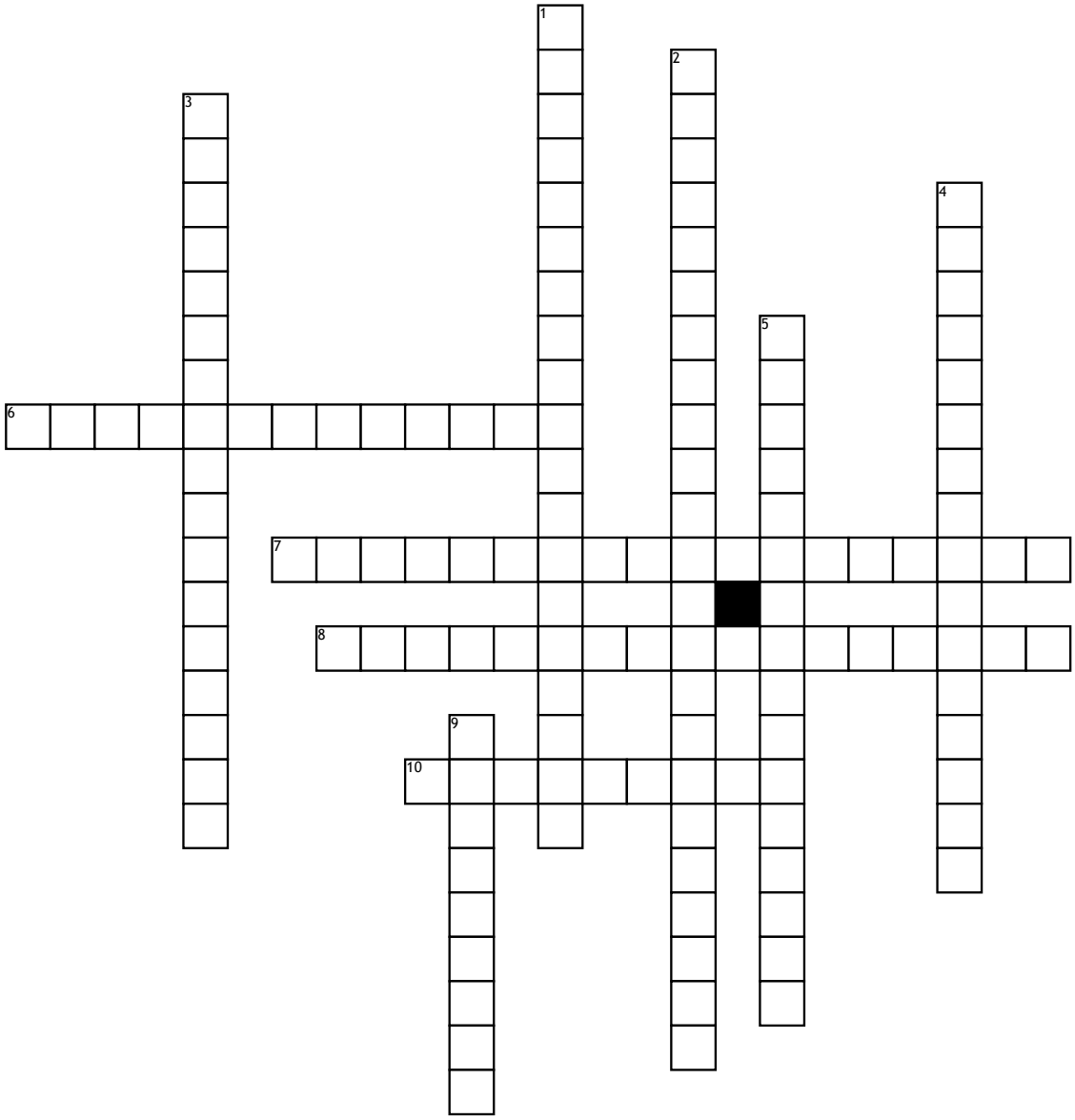
Name: _____ Date: _____

Hydrogen Bonding



Across

6. orbital (1s) at sufficiently low energy, hydrogen bonds are mainly electrostatic in nature

7. The acceptor capability primarily depends on the gas-phase basicity of the hydrogen-bond acceptor groups to hydrogen atoms. It is modified by the acceptor competitive effect due to the coordination and bond strength of the acceptor atom Y

8. The anti-cooperative or competitive effect means the decrease of the strength of hydrogen bonds

10. Hydrogen bonds in solid H2O (weak)

Down

1. In the case of weak and very weak hydrogen bonds, hydrogen bonding is mainly electrostatic in nature

2. systematic investigation of isotypic compounds and correlation of the structural, spectroscopic and theoretical data called

3. The cooperative effect means the increase of the donor strength of a hydrogen-bond donor if the donor concurrently acts also as acceptor for a second hydrogen bond

4. The synergetic effect describes the increase of the strength of a hydrogen bond through metal ions coordinated to the donor atom X

5. bonded complexes formed with HF and lone pair orientation as indicated by VSEPR theory

9. Hydrogen bonds in solid HF (strong)