INSTRUCTIONS: Use a soft, #2 pencil. Your marks must be dark to be counted correctly.

Bubble in Form B on your Scantron Form

Write your perm number and bubble in your perm number.

There are 10 questions worth 2 points each, you will not lose more than 2 points for incorrect answers.

You may work out the problems and write your answers on this quiz. Turn in the Scantron form only. Keep the quiz so you can check your work and your answers later. The answers to the quiz will be posted on the web.

www.chem.ucsb.edu

Go to "undergrads" then "course pages", then to Chem. 1C/1CL (Van Koppett), select "quiz answers"

The quizzes will be graded by Thursday and your score will be posted on the web. Only you can check your score. To check your quiz score go to "student accounts" to set up a new account. You will need to enter your perm number and a 4-digit pin (choose any 4 digits that you will remember to sign on in the future). It will ask you for your email address. This will allow me to send messages to you and the rest of the class.

Note: To view the web lectures the username and password is chem1c.

1. What is the dominant intermolecular force for the substance HOCl?
   a) ionic   b) H-bonding   c) dipole-dipole   d) LDF

2. What is the hybridization on carbon in HOCl?
   a) dsp³   b) d²sp³   c) sp   d) sp²   e) sp³

3. How many π-bonds in HOCl?
   a) 1   b) 2   c) 3   d) 4   e) 5

4. Stronger Intermolecular force
   a) CH₃CH₃   b) H₂CO   c) CH₃OH

   LDF   dipole   H-bonding

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a block  d block  p block
5. Polar molecule
   a) NCl₃  b) SF₆  c) BF₃  d) CO₂

6. Sulfur is the central atom in SO₃²⁻. What is the hybridization on the sulfur atom in SO₃²⁻?
   a) dsp³  b) d²sp³  c) sp²  d) sp²  e) sp²

7. What is the molecular geometry of SO₃²⁻?
   a) trigonal pyramid  b) trigonal planar  c) linear  d) bent  e) tetrahedral

8. The molecular orbital energies for CN increase in the following order: (σ₁s)²(σ₂s)²(σ₂p)²(π₁p)²(π₂p)². According to the MO model, what is the bond order for CN⁻?
   a) 1  b) 1.5  c) 2  d) 2.5  e) 3.0

CN⁻  10 valence electrons
(σ₁s)²(σ₂s)²(σ₂p)²(π₁p)²(π₂p)²

9. Highest boiling point
   a) SO₃  b) SO₂  c) CH₄  d) CO₂

10. Lowest vapor pressure at 25°C
    a) Cl₂  b) Br₂  c) I₂

* q Either a) or b) is counted correct