

Name:

Chem 343 Reich Review Quiz 0B
September 5, 2007

1. How many valence electrons do the following atoms or ions have?

- a) Nitrogen atom _____ d) Sodium ion (Na^{+1}) _____
b) Silicon atom _____ e) Oxide ion (O^{-2}) _____

2. Draw the Lewis structure of ammonia.

3. Draw the Lewis structure of 1,2-dichloroethane.

4. The pK_a of methanol (CH_3OH) is 16 and the pK_a of ammonia (NH_3) is 35. Which is a stronger **base** methoxide (CH_3O^-) or amide (NH_2^-) ?

5. Give an example of a carbon compound containing σ (sigma) bonds. **Circle** a sigma bond. What kind of orbitals are used in σ bonding by carbon?

6. What is the oxidation number of Cr in $\text{K}_2\text{Cr}_2\text{O}_7$?

7. Complete the following acid-base equations.



8. What is the pH of 0.01 M NaOH solution in water?

9. The equilibrium constant for the following reaction is 9. What is the percentage of A present at equilibrium?

