

# GEOL 332 Quiz 5: Clay Minerals, Diagenesis

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Clay Minerals

Match the Atomic Combination with the Clay Mineral Structure (circle A or B).

- (1) Silicon-Oxygen: A or B (A) Tetradedral Layers  
 (2) Aluminum-Oxygen (Hydroxyl): A or B (B) Octahedral Layers

Circle the correct layer configuration for each of the following three clays. Also circle which clays are shrink swell.

- (3) Kandites (like Kaolinite) 1:1 (T-O) 2:1 (T-O-T) shrink swell? Yes No  
 (4) Smectites (like Pyrophyllite) 1:1 (T-O) 2:1 (T-O-T) shrink swell? Yes No  
 (5) Illites (like Muscovite) 1:1 (T-O) 2:1 (T-O-T) shrink swell? Yes No

## Stream Power $\Omega$

Write the formula for stream power

given the following variables:

$\rho$  = water density (1,000kg/m<sup>3</sup>)

$g$  = gravity (9.8 m/s<sup>2</sup>)

$Q$  = discharge (m<sup>3</sup>/s)

$S$  = Slope

$$\Omega =$$

## Solubility of Calcite, Silica, and Quartz Fill in the blanks:

