

## Unit 38. Pre-Class Quiz Questions

1. The pseudo-continuum model assumes that diffusion occurs
  - a. within straight pores with circular cross sections and a distribution of pore diameters
  - b. within a network of pores that are interconnected at nodes
  - c. along a tortuous, curving path leading to the center of the particle
  - d. within odd shaped (without circular cross section) pores
  - e. in a straight line in the radial direction
2. True or false? The defining equation for the Thiele modulus is different for different catalyst particle geometries.
3. True or false? The defining equation for the Thiele modulus is different for different reaction rate orders.
4. The global effectiveness factor
  - a. accounts only for gradients in the boundary layer
  - b. represents the rate of reaction relative to the rate of diffusion
  - c. accounts for gradients in both the pores and the boundary layer
  - d. represents the rate of transport in the boundary layer relative to the rate of transport in the pores
  - e. accounts only for gradients in the pores
5. The Thiele modulus is a dimensionless number representing
  - a. the ratio of reaction rate to diffusion rate
  - b. the actual rate of diffusion relative to the rate of diffusion if no reaction was taking place
  - c. the actual rate of reaction relative to the rate of reaction if there were no gradients
  - d. the rate of diffusion through the boundary layer relative to the rate of diffusion in the pores
  - e. the rate of reaction relative to the rate of convective flow in the reactor