

## Unit 8 - Week 6

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## Assignment 6

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

Due on 2020-10-28, 23:59 IST.

- 1) Out of various transport and chemical reaction processes which affect the rate of soil chemical reactions, which one will limit the rate of a particular reaction? 1 point
- a) The fastest of these  
b) The slowest of these  
c) Both a and b  
d) None of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 2) Intraparticle diffusion happens in \_\_\_\_\_ 1 point
- a) Pores  
b) surfaces  
c) Solids  
d) All of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 3) Which of the following soil component has a more rapid sorption reaction? 1 point
- a) Vermiculite  
b) Micaceous minerals  
c) Smectite  
d) All of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 4) In a chemical reaction, when the rate of the reaction is independent of the reactant concentration, it is called as \_\_\_\_\_? 1 point
- a) Zero order reaction  
b) First order reaction  
c) Second order reaction  
d) Third order reaction
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)
- 5) Rates of a chemical reaction are expressed as \_\_\_\_\_? 1 point
- a) Decrease in reactant concentration per unit time  
b) Increase in product concentration per unit time  
c) Both a and b  
d) None of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 6) If the plot of natural logarithm of reactant concentration vs time is linear and has a negative slope, then the reaction is said to be of 1 point
- a) Zeroth order  
b) First order  
c) Second order  
d) Unpredictable
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 7) The half-life of a first order reaction was found to be 9 min at a certain temperature. What is its rate constant? 1 point
- a)  $1 \text{ s}^{-1}$   
b)  $0.5 \text{ s}^{-1}$   
c)  $0.779 \text{ s}^{-1}$   
d)  $0.00128 \text{ s}^{-1}$
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d)
- 8) When the order of a reaction is assumed incorrectly in plotting kinetic data, \_\_\_\_\_ occurs 1 point
- a) Convergence  
b) Curvature  
c) Flatness  
d) None of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 9) Which of the following is a characteristic of second order reaction? 1 point
- a) Plot of  $\ln \left( \frac{[A]_0[B]}{[A][B]_0} \right)$  is linear  
b) Its half-life is inversely proportional to its initial concentration  
c) Both a and b  
d) None of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 10) The slope of a zeroth order equation is given by \_\_\_\_\_? 1 point
- a)  $1/k$   
b)  $k$   
c)  $-k$   
d)  $k^2$
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 11) Which of the following equations are used specifically to describe the metal reactions on soils and soil constituents and pesticide reactions? 1 point
- a) Elovich equation  
b) Parabolic diffusion equation  
c) Power function equation  
d) Darcy's equation
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 12) Relaxation methods are used to measure \_\_\_\_\_ reactions 1 point
- a) slow  
b) moderate  
c) rapid  
d) All of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 13) Lower activation energies indicate \_\_\_\_\_ reactions? 1 point
- a) Physical adsorption processes  
b) Chemical reactions  
c) Surface controlled processes  
d) All of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)
- 14) The dissolution rate of a mineral for surface controlled reactions is proportional to 1 point
- a) Density of the mineral  
b) Surface area of the mineral  
c) Mass of the mineral  
d) All of the above
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 15) The unit  $\text{s}^{-1}$  is the unit of rate constant for the reaction of which order? 1 point
- a) 1  
b) 2  
c) 0.5  
d) 0
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)