

## Unit 6 - Week 4

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## Assignment 4

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

**Due on 2020-10-14, 23:59 IST.**

- 1) \_\_\_\_\_ Complex is formed when water molecule forms a bridge between the metal ion and the ligand? 1 point
- a. Inner sphere complex  
b. Intermediate sphere complex  
c. Outer sphere complex  
d. All of the above
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: c.
- 2) The ability of solid components in soil to resupply an ion that is depleted from the soil solution is known as \_\_\_\_\_. 1 point
- a. Intensity factor  
b. Capacity factor  
c. Efficiency factor  
d. None of the above
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: b.
- 3) When is soil saturation achieved while preparing a saturation paste? 1 point
- a. The soil glistens  
b. The soil drops freely from the spatula  
c. The soil flows together when separated with a spatula  
d. All of the above
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: d.
- 4) What is the relationship between the activity and concentration of any ion (denoted by B) in a solution? 1 point
- a.  $(B) = [B] / \gamma_B$   
b.  $(B) = \gamma_B / [B]$   
c.  $(B) = \gamma_B [B]$   
d.  $(B) = [B]$
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: c.
- 5) What is the condition for dissolution to occur? 1 point
- a. The soil solution must have less solute than in equilibria  
b. The soil solution must be in equilibria with solid components of soil  
c. The soil solution must have more solute than in equilibria  
d. None of the above
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: a.
- 6) The activity of any solid phase in its pure form is \_\_\_\_\_ at standard temperature and pressure. 1 point
- a. 0.01  
b. 0.1  
c. 1  
d. 10
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: c.
- 7) In the stability diagram, the line corresponding to the most stable mineral phase will be located \_\_\_\_\_. 1 point
- a. Farthest from the x and y axes  
b. At a middle distance from the x and y axes  
c. Closest to the x and y axes  
d. None of the above
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: c.
- 8) How is the ionic strength of a solution (I) calculated? 1 point
- a.  $I = \frac{1}{2} \sum_i C_i (Z_i)^2$   
b.  $I = \frac{1}{2} \sum_i Z_i (C_i)^2$   
c.  $I = \frac{1}{2} \sum_i (C_i Z_i)^2$   
d.  $I = \frac{1}{2} \sum_i (C_i/Z_i)$
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: a.
- 9) "The desorption curve is higher than the adsorption curve for mesoporous material". The above statement is \_\_\_\_? 1 point
- a. True  
b. False
- a  
 b
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: a.
- 10) The use of adsorbent to remove targeted substance in a solution is called \_\_\_\_\_. 1 point
- a. Sorption  
b. Absorption  
c. Adsorption  
d. Chemical analysis
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: c.
- 11) Adsorption process is due to \_\_\_\_\_ force. 1 point
- a. Van der waal  
b. Gravitational  
c. Henry  
d. Bohr
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: a.
- 12) \_\_\_\_\_ is the contaminant that adheres to the sorbing material. 1 point
- a. Sorbate  
b. Sorbent  
c. Sorption  
d. Adsorbent
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: a.
- 13) Which among the following statement is false? 1 point
- a. The adsorption may be monolayered or multilayered  
b. Particle size of adsorbent will not affect the amount of adsorption  
c. Increase of pressure increases amount of adsorption  
d. Increase of temperature may decrease the amount of adsorption
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: b.
- 14) Calculate the adsorption of a dye on activated carbon at 25°C, where  $K_d = 0.025$ ,  $n = 0.5$  and  $C = 0.04$  based on the Freundlich isotherm. 1 point
- a. 0.00005  
b. 0.00003  
c. 0.00004  
d. 0.00006
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: c.
- 15) For the adsorption of a gas on a solid, the plot of  $\log(x/m)$  versus  $\log P$  is linear with slope equal to \_\_\_\_\_ 1 point
- a. k  
b.  $\log k$   
c. n  
d.  $1/n$
- a  
 b  
 c  
 d
- No, the answer is incorrect.  
Score: 0  
Accepted Answers: d.