Assignment 9

Due on: 2019-10-02, 23:59 IST

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

1. A solution volume of 3 liters with the initial concentration of 5M NaCl was treated and reached a final concentration of 7M NaCl after it passed through a filter. Calculate the change in concentration. Assume that the reduction in the concentration was a result of evaporation of NaCl inside the salt-mine in the solid phase. What is the distribution coefficient of the salt-mine?

Options: 
A. 0.62
B. 0.75
C. 0.85
D. 0.92

Correct Answer: B. 0.75

2. What all of the following techniques can be used to measure the undisturbed in-situ sample moisture content?

Options: 
A. Electrical impedance
B. FDP probe
C. Air drying
D. UVMF Open-Vented

Correct Answer: A, B, C

3. Volume of water in a soil sample is a function of:

Options: 
A. Porosity
B. Degree of saturation
C. Volume of the soil sample
D. All of the above

Correct Answer: D. All of the above

4. Saturating process involves conversion of the substance from:

Options: 
A. Solid to liquid phase
B. Liquid to gasous phase
C. Gaseous to liquid phase
D. Solid to gasous phase

Correct Answer: A. Solid to liquid phase

5. A soil mass consists of 24% of organic matter by weight. The NCC (i.e., organic carbon normalized absorption coefficient of the soil) is:

Options: 
A. 0.64 X10^-1
B. 4.1 X10^-2
C. 6.7 X10^-2
D. 4.1

Correct Answer: D. 4.1

6. A soil mass has a porosity of 76% in its loose state. Further, on compaction, using the standard and modified Proctor tests, the porosity was reduced from 71% to 43.5%, respectively. Suggest in which state the thermal conductivity will be higher:

Options: 
A. Less dense
B. Compaction under standard Proctor conditions
C. Compaction under modified Proctor conditions
D. None of the above

Correct Answer: A. Less dense

7. The electronic diode consists of the solid mass to its degree of saturation. The right answer is:

Options: 
A. Directly proportional
B. Inversely proportional
C. Not related

Correct Answer: A. Directly proportional

8. The purpose of utilization of the heat and fluid for conducting the thermal resistivity test is:

Options: 
A. To improve the contrast between the probe and the sample
B. To increase the conductivity of the sample
C. Both A and B
D. To heat the sample

Correct Answer: C. Both A and B

9. The thermal resistivity of air is _______ as compared to the fully saturated fine-grained soils mass.

Options: 
A. High
B. Low
C. Not related

Correct Answer: B. Low

10. Viscosity of the liquids is _______ to temperature.

Options: 
A. Directly proportional
B. Inversely proportional
C. Equal
D. Not related

Correct Answer: A. Directly proportional