

Unit 6 - Week 4

Course outline

How does an NPTEL online course work?

Practice Assignment

Week 1

Week 2

Week 3

Week 4

Lecture 14: Soil- water- environment interaction- I

Lecture 15: Soil- water- environment interaction- II

Lecture 16: Soil- water- environment interaction- III

Lecture 17: Particle energy field theory- I

Lecture 18: Particle energy field theory- II

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Weekly Feedback

Quiz : Assignment-4

Assignment-4 solutions

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Week 7

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Text Transcripts

Assignment-4

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

Due on 2020-02-26, 23:59 IST.

1) Which of the following get expelled in the compaction process?

1 point

- Minerals
 Air
 Water
 Both b and c

No, the answer is incorrect.
Score: 0

Accepted Answers:
Air

2) Which of the following interactions will not occur during agricultural activities?

1 point

- Soil-chemical
 Soil-bacterial
 Soil-thermal
 None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

3) Which of the following effects are ignored in the classical theories of geotechnical engineering?

2 points

- Chemical
 Thermal
 Hydraulic
 All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Chemical
Thermal

4) Which of the following soils will exhibit higher specific-surface area?

1 point

- Presence of various grain-sizes
 Heterogeneous mineralogy
 Presence of contamination
 Difficult to comment

No, the answer is incorrect.
Score: 0

Accepted Answers:
Difficult to comment

5) The cation-exchange capacity of soils will mainly get influenced by_____

1 point

- specific surface area
 Types of cations
 Surface features
 All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

6) Which of the following soils would exhibit lesser specific surface area?

1 point

- Clays of high plasticity
 Silty clays
 Clean sands
 Contaminated states of (a), (b) and(c)

No, the answer is incorrect.
Score: 0

Accepted Answers:
Clean sands

7) Match the following:

2 points

- | | |
|-----------------------------------|------------------|
| i. Buried pipeline and soil mass | a) Liquid-liquid |
| ii. Saltwater intrusion | b) Solid-solid |
| iii. Preparation of carbonic acid | c) Gas-gas |
| iv. Dispersion of plume in air | d) Gas- liquid |

- b, d, c, a
 b, c, d, a
 b, a, d, c
 c, a, d, b

No, the answer is incorrect.
Score: 0

Accepted Answers:
b, a, d, c

8) Match the following:

2 points

- | | |
|------------------------------|----------------------------|
| i. Soil with $S_r=0$ | a) Two-phase system |
| ii. Soil with $S_r=1$ | b) Three-phase system |
| iii. Leachate | c) Solid-gas interaction |
| iv. Partially saturated soil | d) Soil-liquid interaction |

- c, a, b, d
 d, c, a, b
 c, a, d, b
 a, c, d, b

No, the answer is incorrect.
Score: 0

Accepted Answers:
c, a, d, b

9) Which of the following statements are incorrect?

2 points

- Compaction increases the density and voids ratio of the soils
 Compaction of granular soils might lead to particle crushing
 Expulsion of air, only, from the voids leads to increase in the dry-density of soils
 The same dry-density can be obtained at different moisture contents

No, the answer is incorrect.
Score: 0

Accepted Answers:
Compaction increases the density and voids ratio of the soils
Expulsion of air, only, from the voids leads to increase in the dry-density of soils