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Courses » Geoenvironmental Engineering (Environmental Geotechnology); Landfills, Slurry Ponds &

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Unit 12 - Week 11

Course outline

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Lecture 35: Planning & Design of Slurry Ponds

Lecture 36: Stability of Incrementally Raised Embankments- Part 1

Assignment 11

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2018-10-17, 23:59 IST.**

1) In an incrementally raised ash pond, the starter dyke of the first new ash pond is usually constructed of _____. **1 point**

- Loosely deposited ash
- Mine tailings
- Local soil
- Concrete
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

Local soil

2) The amount of earthwork involved in a slurry pond is maximum in _____ method of raising. **1 point**

- Upstream
- Downstream
- Centerline

No, the answer is incorrect.

Score: 0

Accepted Answers:

Downstream

3) It is essential to have at least two compartments of a slurry pond or two slurry ponds for upstream method of raising because: **1 point**

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Measures for Slope Failures in Embankments / Dykes of Slurry Ponds

Quiz : Assignment 11

Assignment 11 solution

Week 12

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No, the answer is incorrect.

Score: 0

Accepted Answers:

upstream raisings should only be constructed on dry surface. If one pond is operational and other one ca be raised for further operations

4) It is essential to secure enough space outside the periphery of starter dyke in an incrementally raised slurry pond. Choose the correct option: **1 point**

- Above statement is true only for upstream method of raising
- Above statement is true for downstream and centreline method of raising
- Above statement is false.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Above statement is true for downstream and centreline method of raising

5) The most critical factor governing stability of slopes in a slurry pond is: **1 point**

- Density of slurry deposited ash
- Provision of internal drains
- Proximity to bedrock
- Provision of vegetative cover over dyke slope

No, the answer is incorrect.

Score: 0

Accepted Answers:

Provision of internal drains

6) Disadvantage(s) of locating decantation well close to starter dyke in an ash pond raised incrementally by upstream method of construction is/are: **1 point**

- It will get buried with time and hence needs to be relocated
- It will result in high phreatic line leading to stability issues of downstream slope
- It will result in high phreatic line leading to stability issues of downstream slope
- Fines will get deposited close to upstream side which will lead to stability issues of further raisings
- All of above
- None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of above

7) Indicate the correct statement in context of slurry pond raised incrementally: **1 point**

- Peripheral dykes are temporary embankments and have factor of safety lower than partition dykes
- Peripheral dykes are permanent embankments and have factor of safety lower than partition dykes
- Partition dykes are permanent embankments and have factor of safety lower than peripheral dykes
- Partition dykes are temporary embankments and have factor of safety lower than peripheral

dykes

No, the answer is incorrect.

Score: 0

Accepted Answers:

Partition dykes are temporary embankments and have factor of safety lower than peripheral dykes

8) Compute the factor of safety for downstream slope (3H:1V) of the dyke of mine tailings pond when the pond is full. The dykes are made of compacted local soil. The properties of the compacted local soil are: $\gamma_{dry} = 17 \text{ kN/m}^3$, $\gamma_{sat} = 19 \text{ kN/m}^3$, $c' = 0$, $\phi' = 30^\circ$ and for mine tailings are $\gamma_{dry} = 20 \text{ kN/m}^3$, $\gamma_{sat} = 24 \text{ kN/m}^3$, $c' = 0$, $\phi' = 35^\circ$. Internal drains are absent. Use formulae for factor of safety as applicable for failure surface parallel to outer slope. **2 points**

- 0.7
- 0.9
- 1.0
- 1.2

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.7

9) Compute the factor of safety of the downstream slope (3H:1V) of an ash pond raised by downstream method of construction. The pond is full with loosely deposited ash ($\gamma_{sat} = 15 \text{ kN/m}^3$, $c' = 0$, $\phi' = 26^\circ$) and the dykes of pond are made of compacted ash ($\gamma_{dry} = 14 \text{ kN/m}^3$, $\gamma_{sat} = 17 \text{ kN/m}^3$, $c' = 0$, $\phi' = 35^\circ$). Chimney drains are provided at all stages. Use formulae for factor of safety as applicable for failure surface parallel to outer slope. **2 points**

- 1.5
- 1.8
- 1.9
- 2.1

No, the answer is incorrect.

Score: 0

Accepted Answers:

2.1

10) Barges with pumps do not find favour in India for decanting water from tailings pond because they need regular maintenance? **0.5 points**

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

11) Chimney drains of each stage of raising are interconnected vertically in an upstream method of construction of a slurry pond? **0.5 points**

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

12 For an embankment witnessing distress due to wetness of downstream slope, a stabilizing berm can be placed on the downstream face with an inclined chimney drain in between. **0.5 points**

- True
 False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

13 Filter criteria ensures that no seepage occurs through an incrementally raised embankment. **0.5 points**

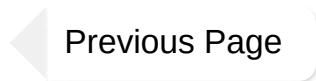
- True
 False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

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