

Unit 8 - Week 6

Assignment 6

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

Due on 2019-09-11, 23:59 IST.

Note: Don't consider the weight of pile. Don't restrict the tip resistance of the value to a limiting value or take full tip resistance of the pile

1) 1 point

A rectangular footing of size 2m x 4m plan is founded at a depth of 1 m below the ground surface. 2500 kN load on the footing acts at an angle of 15° to the vertical and is eccentric in the direction of length by 15cm. $c' = 30 \text{ kN/m}^2$ and $\phi' = 20^\circ$. $N_c = 14.8$, $N_q = 6.4$, $N_\gamma = 2.9$. The unit wt of soil 18 kN/m^3 . Determine the factor of safety against bearing. Using Meyerhof's method

- a) 1.95
- b) 1.87
- c) 1.77
- d) 1.55

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

d)

2) 1 point

Actual contact pressure or stress distribution beneath a flexible footing resting on cohesive soil is

- (a) Less at edges compared to middle
- (b) More at edges compared to middle
- (c) Uniform through out
- (d) None of above

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

c)

3) 1 point

Determine the ultimate bearing capacity of a strip footing 2.5 m in width with its base at a depth of 2 m below ground surface and resting on a saturated soil with the properties: $\gamma_{\text{sat}} = 20 \text{ kN/m}^2$, $c' = 20 \text{ kN/m}^2$, $\phi' = 30^\circ$. $N_c = 37.2$, $N_q = 22.5$, $N_\gamma = 19.7$. The natural water table is at a depth of 1 m below ground level. Using Terzaghi's Theory

- a) 1465 kN/m²
- b) 1565 kN/m²
- c) 1665 kN/m²
- d) 1765 kN/m²

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

c)

4) 1 point

The uses of pile are

- a) To carry vertical load
- b) To resist uplift load
- c) To resist horizontal or inclined load
- d) All of the above

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

d)

5) 1 point

Which of the following pile is best for rock or very dense sand

- a) H- pile
- b) Circular pile
- c) Square pile
- d) Rectangular pile

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

a)

6) 1 point

The pile which transmit the majority amount of load to the pile tips is called

- a) Friction pile
- b) End bearing pile
- c) Combined end-bearing and friction pile
- d) None of the above

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

b)

7) 1 point

Which of the following pile is best suited to clay soil

- a) Driven pile
- b) Jetted pile
- c) Bored pile
- d) None of the above

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

c)

8) 1 point

The bored piles in sand have a point bearing or top resistance (q_{pu}) is _____ of the value of the driven piles

- a) $\frac{1}{2}$ to $\frac{1}{3}$
- b) $\frac{1}{4}$ to $\frac{1}{5}$
- c) 1 to 2
- d) None of the above

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

a)

9) 1 point

A 12 m long, 300 mm diameter pile is driven in a uniform deposit of sand ($\phi' = 38^\circ$). The water table is at a great depth and is not likely to rise. Using $\gamma = 16 \text{ kN/m}^3$, $N_q = 137$, and $K = 2$, the ultimate pile load capacity is (without considering critical depth concept), $\delta = 0.75\phi$

- a) 1656 kN
- b) 3038 kN
- c) 2843 kN
- d) 4943 kN

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

b)

10) 1 point

In problem 9, if the water table present at 4m below the ground surface, determine the ultimate pile load capacity of pile (without considering critical depth concept). Unit wt of soil above (γ or γ_{bulk}) and below (γ_{sat}) the water table are 16 kN/m^3 and 18 kN/m^3 respectively. $\gamma_w = 10 \text{ kN/m}^3$.

- a) 2934 kN
- b) 3772 kN
- c) 4312 kN
- d) 2156 kN

- a)
- b)
- c)
- d)

No, the answer is incorrect.

Score: 0

Accepted Answers:

d)

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