

Unit 9 - Week 7

Course outline

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Assignment Solution

Assignment 7

The due date for submitting this assignment has passed.

Due on 2019-09-18, 23:59 IST.

As per our records you have not submitted this assignment.

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) A precast concrete pile of size 45x45 cm is driven into stiff clay. The unconfined compressive strength of the clay is 200 kN/m². Determine the length of the pile required to carry a safe working load of 400 kN with $F_s=2.5$. Take $\alpha=0.4$. 1 point

- (a) 11.35 m
 (b) 9.16 m
 (c) 10.5 m
 (d) 6.78 m

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

a

 2) The diameter of under-reamed pile is generally times the stem diameter 1 point

- (a) 1 to 2
 (b) 1.25 to 1.5
 (c) 2 to 3
 (d) 3 to 4

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

c

 3) A concrete pile of 45 cm diameter is driven through a system of layered cohesive soils. The length of the pile is 16m. The following details are available. The water table is close to the ground surface. 1 point

- Top layer 1: Soft clay, thickness= 8m, $c=30$ kN/m², $\alpha=0.9$
 Layer 2: Medium stiff, thickness= 6m, $c=50$ kN/m², $\alpha=0.75$
 Layer 3: Stiff stratum extends to greater depth, $c=105$ kN/m², $\alpha=0.5$
 Find out Q_u and Q_{safe} using $F_s=2.5$.
 (a) 1350 kN and 540 kN
 (b) 922 kN and 369 kN
 (c) 560 kN and 224 kN
 (d) 430 kN and 150 kN

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

b

 4) The test which can be used for separating load (tip resistance and frictional resistance) carried by the pile is 1 point

- (a) Static pile load test
 (b) Cyclic pile load test
 (c) Penetration test
 (d) All of the mentioned

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

b

 5) A 14 m long, 300 mm diameter pile is driven in a uniform deposit of sand ($\phi' = 39^\circ$). The water table present at 3 m below the ground surface. Unit wt of soil above (γ) and below (γ_{sat}) the water table are 16 kN/m³ and 20 kN/m³ respectively. $\gamma_w = 10$ kN/m³. Using $N_q = 137$, and $K=1$, $\delta=20^\circ$. The ultimate pile load capacity is (with considering critical depth concept). 1 point

- (a) 1647 kN
 (b) 1585 kN
 (c) 1059 kN
 (d) 3343 kN

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

c

 6) Match List-I (Types of soil) with the List- II(suitable type of foundation) and select the correct answer using the codes given below. 1 point

List-I

- A. Strong soil in surface layer
 B. Weak surface layer followed by rock at shallow depth below ground
 C. Swelling soil in surface layer expanding up to a few meters below GL
 D. Weak heterogenous surface soil layer

List- II

1. Raft foundation
 2. Isolated Foundation
 3. End bearing pile
 4. Under Reamed pile
- | | A | B | C | D |
|-----|---|---|---|---|
| (a) | 4 | 3 | 2 | 1 |
| (b) | 3 | 1 | 2 | 4 |
| (c) | 1 | 2 | 3 | 4 |
| (d) | 2 | 3 | 4 | 1 |

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

d

 7) The pile load test should be performed on 1 point

- (a) Working pile
 (b) Test pile
 (c) All of the mentioned
 (d) Neither (a) nor (b)

- a
 b
 c
 d

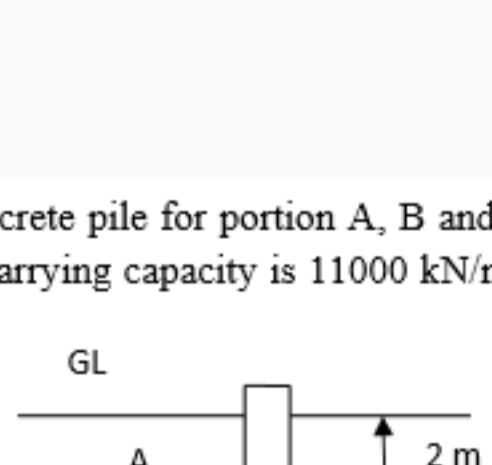
 No, the answer is incorrect.
 Score: 0

Accepted Answers:

c

 8) Skin frictional capacities of a 40 cm diameter driven concrete pile for portion A, B and C are 17kN, 63 kN and 503 kN respectively. The point load carrying capacity is 11000 kN/m². Total pile load capacity will be 1 point

- (a) 1965 kN
 (b) 2345 kN
 (c) 1545 kN
 (d) 3009 kN



- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

a

 9) Under-reamed piles are usually 1 point

- a) Precast piles
 b) Driven piles
 c) Bored piles
 d) None of them

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

c

 10) The pile load test are carried out under 1 point

- (a) Compressive load
 (b) Lateral load
 (c) Uplift load
 (d) All of the mentioned

- a
 b
 c
 d

 No, the answer is incorrect.
 Score: 0

Accepted Answers:

d