FOUNDATION ENGINEERING

5 marks!!

Quiz 1

By:
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RULES & REGULATIONS

1. Please be in your group. Each groups consist of not more than 4 group members.
2. Every single question will have their own timeline and each group representative must write the answer in a piece of paper when the time's up.
3. Here are the marks:

   Wright answer : 5 marks

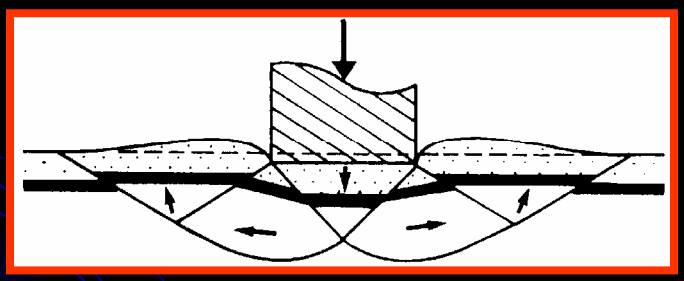
   Wrong answer : -2

   no answer at all : - 4

WISH U ALL BEST OF LUCK!!!

QUESTION 1

What is the type of failure shown by this figure?



TIME: 1 minute

Time's up!

The answer is……

ANSWER Q1

General Shear Failure....

Ready!

QUESTION 2

What is the Nq where the internal friction angle of soil is 30 degrees?

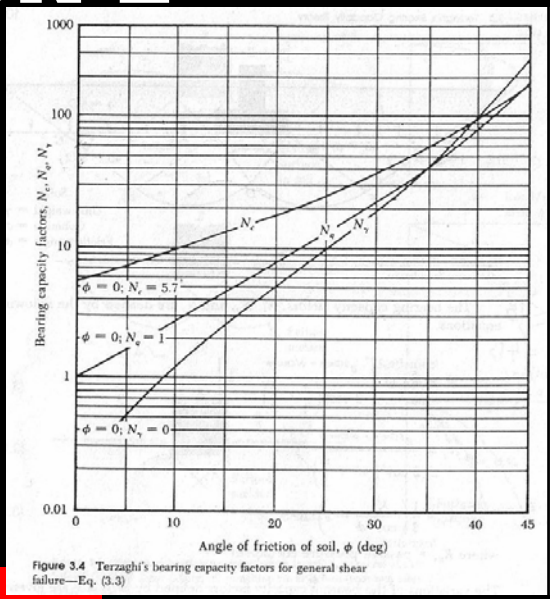


Figure 3.4 Terzaghi's bearing capacity factors for general shear failure—Eq. (3.3)

TIME: 2 minutes

Time's up!

The answer is……

ANSWER Q2

Nq=

22-25!!

Ready!

QUESTION 3

Sands with the SPT value of 4-10 can be considered as _____ (consistency)

TIME: 1 minute

Time's up!

The answer is……

ANSWER Q3

Loose..

Table 1.2. SPT values for sands and gravels

Consistency	*N* value
Very dense	> 50
Dense	30–50
Medium dense or compact	10–30
Loose	4–10
Very loose	< 4

Ready!

QUESTION 4

What are the different between Terzaghi and Meyerhof Bearing capacity equations?

TIME: 1 minute

Time's up!

The answer is……

ANSWER Q4

S, D and I factors!!

Ready!

QUESTION 5

What is the net ultimate bearing capacity for the square footing at the depth of 1 m for:

a) A granular soil? c = 0; Ø= 30°; B = 2m; γ= 18kN/m³

TIME: 3 minutes

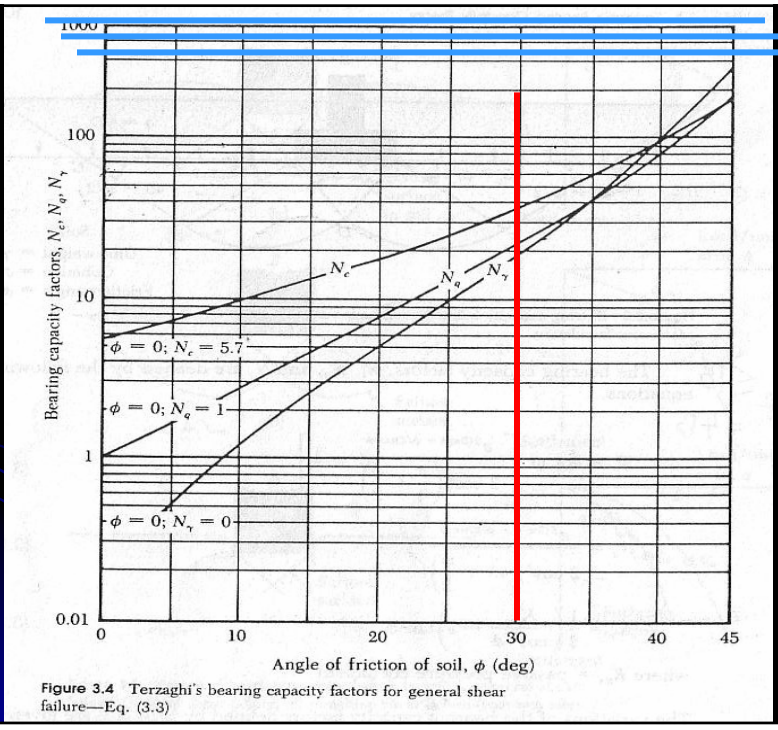


Figure 3.4 Terzaghi's bearing capacity factors for general shear failure—Eq. (3.3)

Time's up!

The answer is……

Answer Q5

From figure 3.4; Ø = 30o
Nc = 37.16
Nq = 22.46
Nγ = 19.73
a) A granular soil
c = 0;
Ø= 30o;
B = 2m;
D = 1m
γ= 18kN/m3
Square foundation
qult = 1.3cNc + qNq + 0.4γBNγ
= 0 + 1m(18 kN/m3)(22.46) + 0.4(18 kN/m3)(2m)(19.73)
= 404.28 kN/m2 + 284.112 kN/m2

= 688.392 kN/m^2

Ready!

QUESTION 6

The Q_{ult} depends upon the:

1. Thpe of soil and its properties
2. Contact pressure applied to the soil
3. Form and size of the footing
4. Depth of the footing below the ground

Of these statements???

(a)1 and 2 are correct (b) 1,2,3 and 4 are correct

(c) 3 and 4 are correct (d) 1,3 and 4 are correct

TIME: 1 minute

Time's up!

The answer is……

ANSWER-Q6

(b) 1,2,3 and 4 are correct

Ready!

Q7

JKR recommend that soil with SPT more than 3 are suitable for shallow foundation, True or false??

TIME: 1 minute

Time's up!

The answer is……

ANSWER -Q7

False!!

> SPT 5…

Ready!

QUESTION 8

Identify the incorrect statement.
Bearing capacity of a footing on sand depends on...

(a) Depth of Footing

(b) Width of footing

(c) Position of water table

(d) Undrained shear strength

TIME: 2 minutes

Time's up!

The answer is……

Answer - Q8

(d) Undrained Shear Strength

Ready!

question 9

A footing on sand is likely to fail under punching shear failure when the relative density is.....

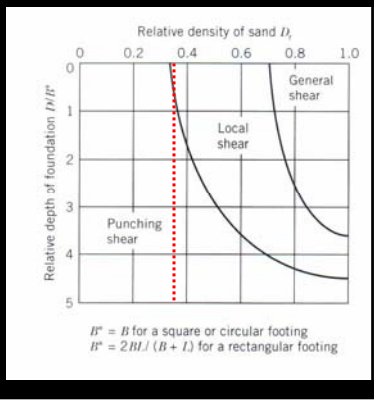
TIME: 2 minutes

Time's up!

The answer is……

Answer - Q9

Less than 26%



Ready!

Q10

Identify the incorrect statement. Terzaghi's bearing capacity theory cannot be applied to footings under the following conditions..

(a) Circular shape
(b) Tilted base
(c) Smooth base
(d) Subjected to moment

TIME: 1 minute

Time's up!

The answer is……

Answer - Q10

(a)

Circular shape

That's all..

Thank you!