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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (CE) (2012 to 2017) (Sem.-6)

FOUNDATION ENGINEERING

Subject Code : BTCE-603

M.Code : 71084

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**Answer briefly :**

1. What do you understand by site investigation?
2. What is reconnaissance? What is its use?
3. Define Earth Pressure at rest.
4. Define the following terms :
 - a) Net safe bearing capacity.
 - b) Gross safe bearing capacity.
5. Write short note on Vesic's bearing capacity theory.
6. Differentiate between the general shear failure and the local shear failure.
7. Discuss the effect of water table on the bearing capacity of the soil.
8. How would you fix the depth of foundation? Mention the formula used generally.
9. Enumerate various types of pile foundations.
10. Write whether the following statements are true or false with justification:
 - a) A disturbed sample is not a truly representative sample.
 - b) A disturbed sample is absolutely undisturbed.

SECTION-B

11. What is the basic difference between a drilled pier and a caisson? What are the conditions in which a drilled pier is more suitable than a caisson?
12. How would you estimate the load carrying capacity of drilled pier in sand?
13. Describe any two methods for the construction of drilled piers.
14. What are different types of earth pressure? Give examples.
15. What are the assumptions in Coulomb's theory?

SECTION-C

16. Determine the ultimate bearing capacity of a strip footing, 1.20 m wide, and having the depth of foundation of 1.0 m. Use Terzaghi's theory and assume general shear failure. Take $\Phi' = 35^\circ$, $\gamma = 18 \text{ kN/m}^3$ and $c' = 15 \text{ kN/m}^2$.
17. Describe the procedure for the design of a strap footing.
18. How would you fix the depth of foundation? Discuss Rankine's formula for the minimum depth.

NOTE : Disclosure of identity by writing mobile number or making passing request on any page of Answer sheet will lead to UMC case against the Student.