BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VII CIVIL : WINTER- 2022
SUBJECT : FOUNDATION ENGINEERING

Day : Tuesday | Time : 02:30 PM-05:30 PM

Date : 13-12-2022 | **W-13622-2022** | Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of Non-programmable **CALCULATOR** is allowed.
4) Assume suitable data if **NECESSARY**.

Q.1 Write advantages and disadvantages of Wash boring and Rotary drilling. **(10)**

OR

Explain Electrical Resistivity method for subsurface exploration. **(10)**

Q.2 Discuss the modes of shear failure with neat sketch. **(10)**

OR

A rectangular footing of size 3m x 6m is founded at a depth of 1m in a homogeneous sandy soil. The unit weight of soil is 18 kN/m^3, cohesion is zero and $\emptyset = 40^0$. (Nc = 95.7, Nq = 81.3, Nγ = 100.4) determine net ultimate bearing capacity **(10)**
i) if water table is at great depth from footing and ii) if water table is at ground level. Interpret the result.

Q.3 Define and explain the following **(10)**

i) Coefficient of compressibility
ii) Coefficient of consolidation
iii) Compression index
iv) Primary consolidation settlement
v) Degree of consolidation.

OR

Explain logarithm of time fitting method with neat sketch and necessary formulae. **(10)**

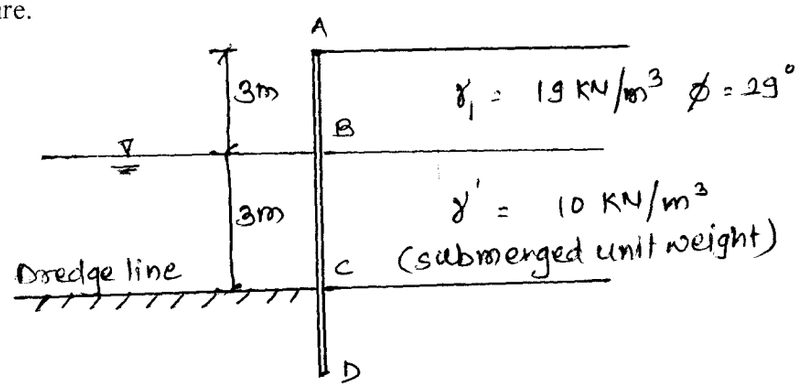
Q.4 Define Pile foundation. Write details classification of pile foundation. **(10)**

OR

a) Compute the load carrying capacity of a square pile 400 mm wide and 12 –m long in sandy soil having γ_{sat} = 18 KN/m^3 $\emptyset = 33^0$ and N = 100. **(06)**

b) Write engineering news formula and explain the notations. **(04)**

Q.5 Determine the safe embedment depth for the cantilever sheet pile shown in figure. **(10)**



OR

Describe the under-ream pile foundations with respect to its objective, design considerations and safe load on it. **(10)**

Q.6 Discuss the types of Geosynthetics its properties and functions. **(10)**

OR

Discuss the necessity of soil stabilization and explain any two methods. **(10)**

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