Code No: **R1641013** **R16** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, July/Aug - 2021

GEOTECHNICAL ENGINEERING -II

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART – A *(14 marks)*

1. a). Explain the finite slope in clayey soils. [2]
   b). Write clear note on Passive Earth Pressure with the help of neat sketch. [3]
   c). Which factors are needed to be considered for the selection of foundations? [2]
   d). Explain the system of providing piles in group. [2]
   e). Show different shapes of well foundations. [3]
   f). Write clear note on planning of programme for subsoil exploration. [2]

PART- B *(4x14=56 marks)*

2. a) Write clear note on Taylor's Stability Number? Write different conditions for stability of dams? [7]
   b) Derive suitable formulae for slope stability analysis using Standard Method of Slices? [7]

3. a) Write short note on Earth pressures in layered soils and explain with the help of neat sketch? [7]
   b) Write the importance of Culmann's graphical method? [7]

4. What do you understand about the SPT- N Value and how this can be obtained and explain with the help of neat sketch? [14]

5. a) Write clear note of components of well and their functions? [7]
   b) Write theoretical note on Load carrying capacity of pile groups in Clayey soils? [7]

6. a) Write clear note on preparation of soil investigation report? [7]
   b) What do you understand about the Penetration test in soil exploration and explain any one method? [7]

7. a) Write clear note on Settlement criteria? [7]
   b) Find the allowable gross load and the net allowable load for a square footing of 2.65m side and the depth of foundation is 1.25 m. Calculate the required data by Using Terzaghi's theory and also assume local shear failure. Consider $\Phi' = 26^0$, $\gamma = 17 kN/m^3$, and $c' = 14\ kN/m^2$, factor of safety= 3.
   Note: provide tables for calculating necessary data. [7]