Set No. 1

Code No: **R1641013** 

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

**R16** 

(Civil Engineering)

Time: 3 hours

1.

a). b). Max. Marks: 70

[2]

[3]

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

Write clear note on Passive Earth Pressure with the help of neat sketch.

## $\frac{PART - A}{Explain the finite slope in clayey soils.}$

|    | c).<br>d).<br>e).<br>f). | Which factors are needed to be considered for the selection of foundations?<br>Explain the system of providing piles in group.<br>Show different shapes of well foundations.<br>Write clear note on planning of programme for subsoil exploration.  | [2]<br>[2]<br>[3]<br>[2] |
|----|--------------------------|---|--------------------------|
|    |                          | <b>PART- B</b> (4x14=56 marks)  |                          |
| 2. | a)                       | Write clear note on Taylor's Stability Number? Write different conditions for   | [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   | ith the help of [7]      |
|    | h)                       | neat sketch?<br>Write the importance of Culmann's graphical method?   |                          |
|    | 0)                       | whice the importance of Cumum s graphical method.   | [']                      |
| 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)<br>b)                 | Write clear note on preparation of soil investigation report?<br>What do you understand about the Penetration test in soil exploration and<br>explain any one method?   | [7]                      |
|    |                          |   | [7]                      |
| 7. | a)<br>b)                 | Write clear note on Settlement criteria?<br>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 <sup>3</sup> , and c' = 14 kN/m <sup>2</sup> , factor of safety= 3. | [7]                      |
|    |                          | Note: provide tables for calculating necessary data.  | [7]                      |
|    |                          |   |                          |