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

IV B.Tech I Semester Regular/Supplementary Examinations, Jan/Feb - 2022

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) Show different earth slopes with help of a neat sketch. [3]
   b) Define active earth pressure. [2]
   c) Write the importance of foundation. [2]
   d) Define a deep foundation. [2]
   e) Define a well foundation. [2]
   f) Define site exploration and explain briefly. [3]

PART–B *(4x14 = 56 Marks)*

2. a) What are the type in slope failures? Explain them with the help of neat sketch. [7]
   b) Write clear note on Taylor's stability Number. [7]

3. a) What are the uses of retaining walls in-connection with earth pressure theories. [7]
   b) Describe the Rankine's lateral earth pressure theory for active and passive earth pressure conditions with the help of neat sketches. [7]

4. a) Show the different types of foundations with the help of neat sketches. [7]
   b) Determine the ultimate bearing capacity of a strip footing of 1.30m wide and with the depth of footing is 1.20m. Use Terzaghi's theory and assume general shear failure. Take $\Phi' = 32^0$, $C' = 15$ kN/m^2, $\gamma = 17$ kN/m^3 [7]

5. a) Which factors are influencing the pile foundations? Explain the requirements for providing the pile foundation. [7]
   b) Write the procedure for calculating load capacity of piles based on static pile formulae. [7]

6. a) Show and explain various components of well foundation with the help a neat sketch? [7]
   b) What are the different shapes of wells? Explain briefly. [7]

7. a) What are the different types of soil samples collected from the field during subsoil investigation? Explain briefly. [7]
   b) Write the importance and procedure involved in plate load test with the help of a neat sketch. [7]