ADAMAS UNIVERSITY PURSUE EXCELLENCE	**ADAMAS UNIVERSITY** **END (EVEN)SEMESTER EXAMINATION : MAY 2021** (Academic Session: 2020 – 21)		
Name of the Program:	B.Tech (Civil Engineering)	**Semester:**	VIII
Paper Title :	ELECTIVE II - FOUNDATION ENGINEERING	**Paper Code:**	ECE44110
Maximum Marks :	40	**Time duration:**	3 Hours
Total No of questions:	9	**Total No of Pages:**	02
(Any other information for the student may be mentioned here)	**1.** At top sheet, clearly mention Name, Univ. Roll No., Enrollment No., Paper Name & Code, Date of Exam. **2.** All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. **3.** Assumptions made if any, should be stated clearly at the beginning of your answer.		

Answer all the Groups

Group A

(Answer all the questions)

$5 \times 1 = 5$

1. (a) How is the Depth of Exploration decided in the process of site exploration?
   (b) Discuss about any two limitations of Seismic refraction method for soil exploration.
   (c) What is Modulus of subgrade reaction?
   (d) What is tension pile?
   (e) What is braced excavation?

Group B

(Answer any three questions)

$3 \times 5 = 15$

2. Illustrate about (a) Auger boring and (b) Open drive sampler. (2.5 + 2.5)
3. Explain conventional method for analysis of Raft Foundation as per IS 2950 in brief.
4. A concrete pile having base dimensions as 30 cm × 30 cm, length of 5 m, is subjected to a horizontal load of 5 kN and a moment of 4000 Nm at the ground level. Taking η_h (unit modulus of subgrade reaction or constant of soil modulus) = 20 N/cm^3. Considering the head of the pile to be free, calculate (a) Maximum deflection and (b) Maximum bending moment. Take modulus of elasticity (E) of concrete as 3×10^6 N/cm^2, Consider deflection coefficients for maximum deflection corresponding to Depth Coefficient (Z) = 0 to be $A_y = 2.435$ and $B_y = 1.623$. Consider moment coefficients for maximum bending moment corresponding to Depth Coefficient (Z) = 1 to be $A_m = 0.727$ and $B_m = 0.852$. (3 + 2)
5. Explain different stability checks considered for retaining walls.
6. (a) What is Soil dynamics and Machine Foundation? (b) Explain different types of Machine foundations. (2 + 3)

Group C

(Answer any two questions)

$2 \times 10 = 20$

7. (a) Discuss about Plate load test. (b) How can bearing capacity be determined from the plate load test data? (5 + 5)
8. (a) Explain Slurry method of drilled shaft construction with neat diagrams. (b) Discuss about the desirable conditions for this method. (7 + 3)
9. (a) What is a sheet pile structure? (b) Explain cantilever sheet piling with suitable diagram. (c) Discuss about caissons and their types. (2 + 4 + 4)