

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**FIRST SEMESTER M. TECH DEGREE EXAMINATION**

**Civil Engineering**

**(Geomechanics & Structures)**

**04CE 6309—Soil Exploration and Field Testing**

Max. Marks: 60

Duration: 3 Hours

**PART A**

*Answer All Questions*

*Each question carries 3 marks*

1. Explain Auger boring.
2. Differentiate between representative and non-representative soil samples.
3. Write short note on dilatometer test.
4. Explain Pull out test in piles.
5. What is soil profile?
6. What do you mean by forensic analysis?
7. Explain drillship investigation.
8. What is magnet extensometer?

**PART B**

*Each question carries 6 marks*

9. Discuss various factors that govern sub-soil exploration, bringing out the guiding principle for deciding location of bore holes in an engineering project.  
OR
10. Propose a comprehensive site investigation programme for a national highway.
11. Discuss possible ways of disturbances while collecting an undisturbed sample and remedial measures to minimize such disturbances  
OR
12. The inner diameter of a sampling tube and that of a cutting edge are 70mm and 68mm respectively, their outer diameters are 72mm and 74 mm respectively. Determine the inside clearance, outside clearance and area ratio of the sampler.
13. Explain standard penetration test and also corrections to be applied for the N value.  
OR
14. Explain about pressure meter test with neat sketch.
15. How to estimate Coefficient of Elastic Uniform Compression using Cyclic Plate Load Test?  
OR
16. Explain seismic cross hole test.
17. Explain about soil investigation reports.  
OR
18. Draw neatly a typical boring log incorporating all details in a subsoil investigation report.
19. Explain different types of underwater samplers.  
OR
20. Explain Geotechnical Instrumentation for Pore water Pressure and soil settlement.