

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**M.Tech. Summer 2018 - 19 Examination**

**Semester: 2****Subject Code:203215153****Subject Name: Subsurface Investigations And Instrumentation****Date: 08/05/2019****Time: 10:30 To 01:00pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Discuss the various factors affecting sample disturbance. (05)  
B) Explain the objective of surface exploration. (05)  
C) Describe the salient features of a good sub-soil investigation report. (05)
- Q.2 Answer the following questions. (Attempt any three) (Each five mark) (15)**  
A) What is reconnaissance? What type of information is obtained in reconnaissance?  
B) Discuss the dynamic cone penetration test. What are its limitations?  
C) Describe the split spoon sampler. What is its use?  
D) Discuss the various soil samplers used for obtaining undisturbed soil samples..
- Q.3** A) Summarize different semi direct methods of soil exploration. (07)  
B) Write short note on plate load test with neat sketch. (08)
- OR**
- B) Write a short note on:  
i) piezometer (08)  
ii) inclinometer
- A) Write a short note on:  
i) boring log (07)  
ii) sub surface profile
- OR**
- A) Write a note on geophysical exploration using electrical resistivity method. (07)  
B) What are the various steps considered in the planning of sub-soil exploration Programme? (08)