

**Elective - II: Geotechnical Investigation & Ground Improvement Technique**

P. Pages : 2

Time : Three Hours



**KNT/KW/16/7536**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Solve Question 1 OR Questions No. 2.
  3. Solve Question 3 OR Questions No. 4.
  4. Solve Question 5 OR Questions No. 6.
  5. Solve Question 7 OR Questions No. 8.
  6. Solve Question 9 OR Questions No. 10.
  7. Solve Question 11 OR Questions No. 12.
  8. Due credit will be given to neatness and adequate dimensions.
  9. Assume suitable data whenever necessary.
  10. Diagrams and chemical equations should be given whenever necessary.
  11. Illustrate your answers whenever necessary with the help of neat sketches.
  12. Use of non programmable calculator is permitted.

1. a) Chalk out the Geotechnical Investigation Programme for college Building having plot size (1000m X 1500 m). Consider depth of bore hole as 15m. 7

b) Explain Salient features of Bore Log. 6

**OR**

2. a) Explain electrical Resistivity Method of Geotechnical Investigation Programme. 7

b) Explain various Precautions to be taken at the Lime of sample collection and shipment. 6

3. a) Explain Seismic refraction Method of exploration with the help of neat sketch. 7

b) Explain static cone penetration Method for determining Soil properties. 7

**OR**

4. a) Write short note on Settlement of Foundation. 7

b) Explain field vane shear Test with the help of neat sketch. 7

5. a) Describe Various Grouting Materials and their suitability. 7

b) Explain Geosynthetic encased stone column. 6

**OR**

6. a) Explain concept of Reinforced Soil wall. 7

b) Describe various types of Geosynthetics used for construction works. 6

7. a) Describe application process of Geofoam. **6**  
b) Describe cement stabilization Method and lime stabilization method. **7**

**OR**

8. a) Explain construction method for Ground anchoring. **6**  
b) What are the various types of Anchoring method? **7**
9. a) Explain Soil nailing system. **7**  
b) What are the various limitations of Soil nailing? **7**

**OR**

10. a) Explain construction procedure of diaphragm wall, with the help of neat sketch. **7**  
b) What do you understand by Deep Soil Mixing. **7**
11. a) Explain Cement Slurry wall. **6**  
b) What are the various Advantages of Deep Soil Mixing. **7**

**OR**

12. a) Write short note on following. **6**  
i) Skirted stone column.  
ii) Cemented stone column.  
iii) Encased stone column.
- b) Explain Limitations of Deep Soil Mixing. **7**

\*\*\*\*\*