Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 91275

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019
Seventh Semester
Civil Engineering
CE 6012 – GROUND IMPROVEMENT TECHNIQUES
(Regulations 2013)
(Common to PTCE 6012 – Ground Improvement Techniques for B.E. (Part-Time) – Sixth Semester – Civil Engineering – Regulations 2014)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A **(10×2=20 Marks)**

1. What is the need for improving the ground ?
2. State the geotechnical problems of soft clay.
3. List out the different types of well point systems.
4. What is vacuum dewatering ?
5. Enumerate the various methods of in-situ densification.
6. What is the function of vertical drain ?
7. What is the mechanism involved in soil reinforcement ?
8. Enlist the applications of geosynthetics in geotechnical engineering.
9. Mention the different methods of grouting.
10. How do you control shell potential of expansive soil ?

PART – B **(5×13=65 Marks)**

11. a) Explain the various factors influencing the selection of ground improvement techniques. **(13)**

(OR)

b) Discuss the geotechnical problems associated with soft clays, expansive clays disposive soil and alluvial soils. **(13)**

12. a) Discuss the features of Deep Well system by listing their merits and demerits. **(13)**

(OR)

b) Explain in brief the various steps involved in designing a dewatering system. **(13)**

13. a) Write in detail the principle, operation and applications of vibro-compaction method of ground improvement. **(13)**

(OR)

b) Explain the stages of operation in installation and action of a lime pile with its advantage and disadvantage. **(13)**

14. a) Explain the principle and components of reinforced earth for ground improvement. **(13)**

(OR)

b) How do geosynthetics function as a filter ? How does it differ in its function for drainage ? Explain in detail with sketches. **(13)**

15. a) Describe in detail about the various methods of grouting. **(13)**

(OR)

b) Enumerate in detail the different methods of mechanical stabilization. **(13)**

PART – C **(1×15=15 Marks)**

16. a) Explain in brief the principle adopted in electro-osmotic dewatering with the help of a case study. **(15)**

(OR)

b) Write a detailed note on :

a) Stabilization of expansive clays. **(5)**

b) Soil grouting. **(5)**

c) Electro osmotic dewatering. **(5)**