

**Reg. No:**

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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech IV Year II Semester Regular Examinations September 2020**  
**GROUND IMPROVEMENT TECHNIQUES**

(Civil Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a Discuss in detail various well point techniques for dewatering soils. **6M**  
b Explain electro osmosis method to control groundwater in low permeable soils. **6M**

**OR**

- 2 a Explain briefly various methods of grouting. **6M**  
b Explain the criteria for the selection of a particular fill material around the drains. **6M**

**UNIT-II**

- 3 a What are the advantages of using wick geo drains? **8M**  
b Explain the vibro compaction method for cohesion less soils. **4M**

**OR**

- 4 a Write short notes on densification of cohesive soils by lime columns. **7M**  
b Explain the impact at ground surface method to densify granular soils. **5M**

**UNIT-III**

- 5 a Explain the proportioning techniques of mechanical stabilization. **6M**  
b Write short notes on bituminous stabilization. **6M**

**OR**

- 6 a What is the necessity of soil stabilization? **5M**  
b Write short notes on sodium silicate stabilization. **7M**

**UNIT-IV**

- 7 a What is the objective of soil reinforcement? **6M**  
b What are the applications of geotextiles? **6M**

**OR**

- 8 a Explain the applications of geo textiles on their separation & drainage functions. **6M**  
b Discuss the external stability aspects in the design of reinforced earth wall. **6M**

**UNIT-V**

- 9 a Explain briefly about improvement of expansive soils. **6M**  
b Write short notes on Granular fill. **6M**

**OR**

- 10 a What are the various foundation techniques adopted in expansive soils? **6M**  
b Explain the consolidometer method used for determination of swell pressure. **6M**

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