

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: CE 362
Course Name: GROUND IMPROVEMENT TECHNIQUES

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

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| 1 | a) | What are the factors that should be considered in the selection of the best ground improvement technique? | 5 |
| | b) | What are the different aspects of grouting? | 5 |
| | c) | Explain briefly the major distribution of soil in India. | 5 |
| 2 | a) | What is the difference between suspension grout and solution grout? | 5 |
| | b) | Write any 3 applications of grouting with neat sketches. | 5 |
| | c) | What is reclaimed soil? Explain the different types of reclamation materials. | 5 |
| 3 | a) | What are the different ground conditions which will enable an engineer to decide a proper treatment approach? Explain. | 5 |
| | b) | Explain compaction grouting using neat sketches. | 5 |
| | c) | Briefly explain the grouting procedure for any type of grouting. | 5 |

PART B

Answer any two full questions, each carries 15 marks.

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| 4 | a) | Write a short note on soil nailing. | 5 |
| | b) | Explain briefly soil bitumen stabilization. | 5 |
| | c) | Explain the principle of soil-lime stabilization. | 5 |
| 5 | a) | What do you understand about fly ash stabilization? | 5 |
| | b) | Write short notes on ground anchors. | 5 |
| | c) | Explain how the engineering properties are changed by the addition of calcium and sodium chlorides. | 5 |
| 6 | a) | Explain the principle and mechanism of cement stabilization. | 8 |
| | b) | Write short notes on rock bolts. | 7 |

PART C

Answer any two full questions, each carries 20 marks.

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| 7 | a) | Explain well point system of dewatering for ground improvement. | 7 |
| | b) | With neat sketches, explain vibro-compaction method. | 7 |
| | c) | What is vacuum dewatering method? Explain. | 6 |
| 8 | a) | Explain the electro-osmotic method of dewatering for ground improvement. | 7 |
| | b) | What are the different shallow surface compaction methods? Explain. | 7 |
| | c) | Explain the deep compaction method of explosion with a neat sketch. | 6 |
| 9 | a) | Briefly explain dynamic compaction method using neat sketches. | 7 |
| | b) | Explain the moisture-density relationship for different compaction energy. | 7 |
| | c) | Explain the dewatering method using open sump and ditches. | 6 |
