

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2020 (ONLINE MODE)

Course: Ground Improvement Techniques
Program: B Tech Civil Engineering
Course Code: CEEG 361

Semester: VIII
Time 03 hrs.
Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	The term ground improvement refers to the _____ in _____ properties of a soil that are carried out at a _____ where the soil in its _____ state does not possess _____ that are _____ to us for proposed Civil Engineering activity.	5	CO1
Q 2	a) Dynamic compaction involves the _____ lifting and _____ of a weight at a location, to increase the _____ of soil beneath that location. (3marks) b) In Vibropiles, vibratory hammer at the top of the casing is used to _____ and _____ soil.(2 marks)	5	CO2
Q 3	Cement grout not only _____ the voids and _____ permeability but also _____ with time and _____ the soil _____ together.	5	CO3
Q 4	_____, _____, _____, _____ are the functions of geosynthetics.	5	CO4
Q 5	To achieve the desired soil behavior, we have to _____ the soil properties, e.g. increase the _____ strength, reduce the _____ and _____ or _____ the permeability.	5	CO1
Q 6	a) Vibro-compaction is carried out with the help of special _____ tool called the _____. It is used to _____ the density of loose sand. (3 marks) b) In blasting _____ is buried in _____ sand deposit. (2 marks)	5	CO2

SECTION B

Q 7	Explain In-situ ground improvement techniques.	10	CO1
Q 8	Explain the steps of blasting used to improve sandy soils.	10	CO2
Q 9	Discuss the advantages and disadvantages of compensation grouting.	10	CO3
Q 10	Describe the use of geo-composites in drains.	10	CO4
Q 11	Differentiate between double direct and triple separation process of jet grouting	10	CO3

SECTION-C

Q 12	a) Interpret the need of testing Geosynthetics for resistance to chemical and biological damage during their use. (10 marks) b) Suggest methods of durable ground improvement for clayey soil and justify their selection. (10 marks)	5+5+1 0	CO1, CO2, CO4
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