TED (21) – 5014B
(REVISION – 2021)

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Reg.No……
Signature…….

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER - 2025

GROUND IMPROVEMENT TECHNIQUES

[Maximum Marks:75] [Time: 3 Hours]

PART - A

I. Answer all the following questions in one word or one sentence. Each question carries 'one' marks.

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1	Determine the equipment having projecting studs on the surface of rollers.	M1.02	A
2	List the various surface compaction equipments.	M1.02	R
3	Choose a commonly available and relatively inexpensive aqueous solution.	M2.03	A
4	Define permeation.	M2.03	R
5	List the types of soil reinforcement materials.	M3.02	R
6	List the forms of soil reinforcement.	M3.02	R
7	Choose the two major groups in geosynthetics.	M3.04	A
8	List the uses of preloading in civil engineering works.	M4.04	R
9	List the types of vertical drains.	M4.04	R

PART - B

II. Answer *any eight* questions from the following. Each question carries 'Three' marks.

(8 x 3 = 24 Marks)

		Module Outcome	Cognitive level
1	List the disadvantages of wellpoint systems with pumps.	M1.04	R
2	Illustrate the vacuum dewatering system.	M1.04	A
3	Draw the figure of permeation.	M2.03	A
4	Define groutability ratio.	M2.03	R
5	Draw the figure of compaction grouting.	M2.03	A
6	Sketch two-shot and one-shot methods of chemical grouting.	M2.03	A

7	List the major disadvantages of sheep foot rollers.	M1.02	R
8	Illustrate deep-well dewatering.	M1.04	A
9	List the applications of soil reinforcement in ground improvement.	M3.02	R
10	List the advantages of geodrains.	M4.04	R

PART - C

Answer all the questions from the following. Each question carries 'seven' marks.

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Describe single-statge wellpoint installation by progressive system with a neat sketch.	M1.04	U
	OR		
IV.	Discuss about vibrating smooth-drum rollers.	M1.02	U
V.	List the various aqueous solutions.	M2.03	R
	OR		
VI.	Report the applications of the various grout types: a) PFA, b) cement, c) clays d) clay/cement e) emulsions f) solutions, one shot, g) solutions, two shot.	M2.04	U
VII.	Describe non-woven with a neat sketch.	M3.04	U
	OR		
VIII.	Describe Geosynthetic nets.	M3.04	U
IX.	Discuss geometrical aspects of geosynthetics.	M3.04	U
	OR		
X.	Describe the following properties of geosynthetics: a) Abrasion Resistance b) Ultra Violet Resistance	M3.04	U
XI.	Illustrate the following. a) conslidometer b) floating ring cell c) fixed ring cell	M4.03	A
	OR		
XII.	Discuss the advantages of preloading methods.	M4.04	U
XIII.	Explain sand drains construction by wash boring.	M4.04	U
	OR		
XIV.	Explain cardboard drains with a neat sketch.	M4.04	U

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