Code: 19A01603b **R19**

B.Tech III Year II Semester (R19) Supplementary Examinations January/February 2023

GROUND IMPROVEMENT

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	What are the applications of rapid impact roller.	2M
	(b)	Write advantages of smooth wheeled roller.	2M
	(c)	What is well point method.	2M
	(d)	What is replacement technique.	2M
	(e)	What are the components of total compression.	2M
	(f)	What are methods of evaluating compressibility.	2M
	(g)	What do you mean by lime stabilisation.	2M
	(h)	What is chemical grouting.	2M
	(i)	Write the applications of geocells.	2M
	(j)	Write note on ground anchors.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Explain moisture content and in-situ density measurements in field compaction.	5M
	(b)	List the types of surface compaction methods. Explain any two with neat sketch.	5M
		OR	
3	(a)	Explain suitability of soil for various compaction methods.	5M
	(b)	Explain impact roller with neat sketch.	5M
4	(a)	Explain design steps for dewatering system.	5M
	(b)	Explain vibro-compaction method with neat sketch.	5M
		OR	
5	(a)	Explain deep-well dewatering system.	5M
	(b)	Explain methods to prevent soil failure on sides in deep excavation.	5M
6	(a)	Explain rate of consolidation in preloading technique.	5M
	(b)	With a neat sketch, explain sand drain installation with surcharge.	5M
		OR	
7	(a)	Explain efficiency of vertical drains.	5M
	(b)	Explain prefabricated vertical drains with neat sketch.	5M
8	(a)	Explain procedure of grouting.	5M
	(b)	Explain calcium and sodium chloride soil stabilisation.	5M
		OR	
9	(a)	Explain need for soil stabilisation.	5M
	(b)	Explain soil stabilisation with natural and synthetic resins.	5M
10	(a)	Explain steps involved in installation of soil nails with neat sketch.	5M
	(b)	List and explain applications of geosynthetic products.	5M
		OR	
11	(a)	Explain mechanical and hydraulic properties of geosynthetics.	5M
	(b)	Explain applications of soil nails and ground anchors.	5M

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Code: 19A01603b **R19**

B.Tech III Year II Semester (R19) Regular Examinations July/August 2022

GROUND IMPROVEMENT

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	(a)	List the advantages of sheep foot rollers.	2M
	(b)	What is compaction quality control?	2M
	(c)	Explain filter requirements.	2M
	(d)	Explain open sumps.	2M
	(e)	Explain settlement-time curve obtained during preloading technique.	2M
	(f)	Write the compressibility characteristics of soil deposit.	2M
	(g)	Explain groutability.	2M
	(h)	Explain cement stabilisation.	2M
	(i)	Write the applications of geotextiles.	2M
	(j)	Explain soil nails.	2M

PART – B

(Answer all the questions: 05 X 10 = 50 Marks)

2	(a)	Compare compaction on dry of optimum and wet of optimum.	5M
	(b)	Explain vibratory compaction equipment.	5M
		OR	
3	(a)	Explain dynamic compaction of soil with neat sketch.	5M
	(b)	Explain selection of field compaction procedures.	5M
4	(a)	Explain vacuum dewatering system.	5M
	(b)	Explain deep well drainage with neat sketch.	5M
		OR	
5	(a)	Explain vibro-compaction method with neat sketch.	5M
	(b)	Explain dewatering by electro-osmosis method.	5M
6	(a)	With a neat sketch, explain stress void ratio curves of typical natural soils.	5M
	(b)	Explain design of vertical drains.	5M
		OR	
7	(a)	Explain types and construction of vertical drains.	5M
	(b)	Explain construction requirements for preloading technique.	5M
8	(a)	List the grouting materials. Explain any two.	5M
	(b)	Explain bituminous stabilisation of soil.	5M
		OR	
9	(a)	Explain compaction grouting with neat sketch.	5M
	(b)	Explain mix-in-place method and stationary plant method.	5M
10	(a)	Explain steps involved in installation of soil nails with neat sketch.	5M
	(b)	Explain suitability of geosynthetic products for different functions.	5M
		OR	
11	(a)	Explain the use of geosynthetics in engineered sanitary landfill.	5M
	(b)	Explain the applications of geocell and geonets.	5M

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