B.E. Civil Engineering Seven Semester CE708 - Elective-I : Ground Improvement Techniques

P. Pages : 2 Time : Three Hours		2 ee Hours	* 1 3 6 8 * GUG/W/18/ Max. Mark	UG/W/18/1740 Max. Marks : 80	
	Note	s: 1. 2. 3. 4.	All questions carry equal marks. Answer all questions. Due credit will be given to neatness and adequate dimensions. Assume suitable data wherever necessary.		
1.	a) Explain i) Cla ii) Pro iii) Pre		expensive soil related to the following : ay mineralogy oblems occurred due to soil eventions.	10	
	b)	What are techniqu	e the different factors to be considered while selecting ground improvement les.	6	
			OR		
2.	a)	Enlist ar	nd explain different problematic soils and their remedies.	8	
	b)	Explain	multistage well point system.	8	
3.	a)	Explain	the effect of compaction on engineering behaviour of soil.	8	
	b)	Explain	in brief lime stabilization and their effect on soil properties.	8	
			OR		
4.	a)	Explain	the principle and installation of sand drain.	8	
	b)	A clay l	\checkmark	4 8	

- b) A clay layer 6 m thick is consolidated with the help of sand drawn of dia. 30 cm and spaced at 2.7 m c/c. Determine the influence of wall on the average degree of consolidation in the clay without well would be equal to 20% make computation under two cases of permeability
 - i) $k_r = k_3 \text{ or } C_{vr} = C_{v3}$
 - ii) $k_r 5 kg \text{ or } C_{vr} = 5 C_{v3}$

Consider following Table

Т	abl	le I

U%	Pv	Ur%	Pv	
15	0.018		n = 5	n = 10
20	0.031	30	0.065	0.070
25	0.049	35	0.076	0.0850

Table II

5.	a)	Explain the various advantage of grouting.					
	b)	Explain in brief various factors affecting the selection of grouting techniques.					
	OR						
6.	a)	Explain the effect of cement stabilization on soil properties and also discuss the factors that affects the selection of cement grout.	10				
	b)	Explain Fly ash stabilization and its effect on soil.	6				
7.	a)	Explain the different applications of soil reinforcement with neat sketches.	8				
	b)	Explain Base isolation with neat sketches.	8				
	OR						
8.	a)	Explain with neat sketches temporary supporting system.	8				
	b)	What are the different requirement of reinforcement.	8				
9.	a)	Explain in brief soil nailing with neat sketches.	8				
	b)	Explain stepwise procedure of rock bolt design.	8				
		OR					
10.	a)	Explain micropyles and its advantages.	8				
	b)	Explain with neat sketch under pinning.	8				
