M.A.College of Engineering, Kothamangalam

Second Sessional– October, 2026

Seventh semester

Ground Improvement Techniques (CET 423) *Elective*

Time: 90 minutes **Max. Marks: 40**

Use γ_w= 10.0 kN/m^3

PART A (4questions * 3marks = 12marks)

1. List the **types of drains** in ground improvement.
2. With a neat sketch, brief the **well-point system** of hydraulic modification.
3. List the different **functions of geosynthetics** in ground improvement.
4. List out the merits and demerits of **micropiling**.

PART B (2questions * 14marks = 28marks)

5. With a **settlement vs. time plot**, compare the effect of (a) Preloading and (b) Vertical Drains (4)
6. A **4.0 m high** retaining wall carries a sand backfill of Saturated Unit weight **22 kN/m^3.** The angle of internal friction of the soil is **30 degrees**. Assume an RCC Cantilever retaining wall. Estimate the **percentage reduction in moment** at the base if a set of interceptor drains are provided to relieve the pore pressure acting on the wall. (10).
7. Explain the **design considerations** of Reinforced Earth Wall (7 marks), and Soil Nailing (7).

Question No	1	2	3	4	5	6	7	Total Marks
CO Mapping	CO3	CO3	CO4	CO4	CO3	CO3	CO4	
Bloom's Taxonomy Level	Remember	Understand	Remember	Remember	Remember	Understand	Understand	
Marks	3	3	3	3	4	10	14	40

Prepared by	Scrutinized by	Approved by
Balu E George	**Prof. Eldhose M.M.**	**Dr. Elson John (HoD)**