

UNIT-IV

S.No	Questions	BTL	CO	PO
Part-A (Short Answer Questions)				
1	Define normally consolidated, under consolidated and over consolidated soils.	1	4	1
2	Explain the significance of pre-consolidation pressure.	2	4	1
3	Explain Terzaghi's assumptions	2	4	1
4	Define compression index, coefficient of consolidation	1	4	1
5	Differentiate between compaction and consolidation of soils.	2	4	1
6	Define immediate settlement, primary consolidation, Consolidation.	1	4	1
7	Explain logarithm of time fitting method	2	4	1
8	Differentiate between standard and modified Proctor test	2	4	1
9	Discuss Terzaghi's theory of consolidation.	2	4	1
10	A sand fill compacted to bulk density of 18.84 kN/m^3 is to be placed on a compressible saturated marsh deposit 3.5m thick. The height of the sand fill is to be 3m. if the volume compressibility of the deposit is $7 \times 10^{-4} \text{ m}^2/\text{KN}$, estimate final settlement of the fill.	3	4	1
Part-B (Long Answer Questions)				
1	Explain spring analogy for primary consolidation.	2	4	2
2	Discuss Terzaghi's theory of consolidation, stating the various Assumptions and their validity.	2	4	3
3	Explain the different e-log p curves for the consolidation.	2	4	3
4	Differentiate between (i)primary consolidation and secondary Consolidation (ii)standard and modified Proctor test.			
5	Explain the significance of pre-consolidation pressure. Describe the Casagrande method of determining it.	2	4	3
6	What is over consolidation soil? Explain briefly with an example.	1	2	3
7	A soil sample 20 mm thick takes 20 minutes to reach 20% consolidations. Find the time taken for a clay layer 6 m thick to reach 40% consolidation. Assuming double drainage in both the cases.	4	4	3
8	The stresses on a failure plane in a drained test on a cohesion less soil areas under: Normal stress(σ) = 100 kN/m^2 Shear stress(τ) = 40 kN/m^2 (i) Determine the angle of shearing resistance and the angle which the failure plane makes with the major principal plane. Also find the major and minor principal stresses	4	4	3

Blooms Taxonomy Level (BT) : (L1–Remembering; L2–Understanding; L3–Applying; L4– Analyzing; L5–Evaluating; L6–Creating)

