

UNIT-V

S.No	Questions	BTL	CO	PO
Part–A (Short Answer Questions)				
1	What are the important characteristics of Mohr's circle	1	5	1
2	What are the different test for shear strength	1	5	1
3	State Mohr-Coulomb failure theories.	1	5	1
4	Define Dilatancy, Critical void ratio, liquefaction, Shear strength Of clays.	1	5	1
5	Explain different types of soils.	2	5	1
6	What are the merits and demerits of triaxial test.	1		1
7	What are the merits and demerits of vane shear test.	1	5	1
8	What are the factors effecting of cohesion less soils.	1	5	1
9	What are the factors effecting of cohesive soils.	1	5	1
10	What are the advantages and disadvantages of a tri axial compression test in comparison with a direct shear test	1	5	1
Part–B (Long Answer Questions)				
11	Explain Mohr-Coulomb theory of shear strength. Sketch typical Strength envelope for a soft clay, clean sand and a silty clay	2	5	2
12	Classify the shear tests based on drainage conditions. Explain how the pore pressure variation and volume change take place during these tests. Enumerate the field conditions which necessitate each of these tests.	3	5	2
13	What types of field tests are necessary for determining the shear Strength parameters of sensitive clays?	1	5	2
14	A soil specimen when tested in unconfined compression test fails at axial test of 120kN/m^2 the same sample tested in tri-axial compression test. The failure occurs at cell pressure of 40kN/m^2 and axial deviator stress of 160kN/m^2 . Determine shear strength parameter.	4	5	1
15	Two samples were tested in a tri axial machine. The all found pressure maintained further first sample was 2kg/cm^2 and 20kg/cm^2 and the failure occurred at additional axial stress of 7.7kg/cm^2 , while for the second the values were 5.0 kg/cm^2 and 13.7 kg/m^2 resp. Find c and ϕ of the soil.	4	5	3
16	A remoulded specimen of soil prepared by compaction to standard proctor maximum dry unit weight at optimum moisture content, is used for consolidated-un drained tri axial test with pore pressure measurements. The test results are given below: Determine the values of effective shear stress parameters by (i) Drawing Mohr envelope (ii) Drawing modified envelop	4	5	3
17	A soil specimen when tested in unconfined compression test fails at axial test of 120kN/m^2 the same sample tested in tri-axial compression test. The failure occurs at cell pressure of 40kN/m^2 and axial deviator stress of 160kN/m^2 . Determine shear strength parameter.	4	5	1

18	A direct shear test was performed on a 6cmx6cm sample of dry Sand the normal load was 360N. the failure occurred data shear load of 180N. Plot the Mohr's strength envelope and determine ϕ . Assume $c=0$ also determine principal stress at failure	4	5	3
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Blooms Taxonomy Level (BT) : (L1–Remembering; L2–Understanding; L3–Applying; L4– Analyzing; L5–Evaluating; L6–Creating)